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Document (1)

1. *15-1795 Unwired Planet, LLC v. Apple Inc.*
   Client/Matter: -None-
   Search Terms: 7233790 or 7,233,790
   Search Type: Terms and Connectors
   Narrowed by:

Content Type	Narrowed by
Dockets	-None-

Roku Exhibit 1014
Roku v. Videolabs

15-1795, Unwired Planet, LLC v. Apple Inc.

US Circuit Court of Appeals - Federal Circuit

This case was retrieved on 06/23/2022

Header

Case Number: 15-1795
Date Filed: 07/06/2015
Date Full Case Retrieved: 06/23/2022
Status: Closed 11/23/2015
Misc: (999) 830: Patent Infringement (Fed. Qst.); Appeal

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Associated Cases

Case Number	Relationship	Lead Case	Member Case	Additional Information
	Current Case: Cross-appeal	15-1725	15-1795	StartDate: 07/06/2015

Additional Case

Additional Case Information
Civil Private
Appeal from: United States District Court for the Northern District of California
District: 0971 Division: 3 CaseNumber: 3:13-cv-04134-VC DateFiled: 09/06/2013
Trial Judge: Vince Chhabria , Judge
Date NOA Filed: 06/19/2015

Proceedings

Renee Preston

15-1795, Unwired Planet, LLC v. Apple Inc.

Date	#	Proceeding Text	Details
07/06/2015		Appeal docketed. Received: 07/02/2015. [253650]. [JCS]	
07/06/2015		Note to file: The following cases are associated:15-1725 Lead with 15-1795 cross-appeal. FURTHER ENTRIES WILL BE ADDED TO THE LEAD APPEAL ONLY. [253654] [JCS]	
11/23/2015		ORDER granting motion to terminate cross-appeal filed by Cross-Appellant Apple Inc.; issuing mandate in 15-1795. Service as of this date by Clerk of Court. [291040] [15-1725, 15-1795] [SJ]	

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User Name: Renee Preston
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Job Number: 173888254

Document (1)

1. *3:13cv4134, Unwired Planet, Llc V. Apple, Inc.*
   Client/Matter: -None-
   Search Terms: 7233790 or 7,233,790
   Search Type: Terms and Connectors
   Narrowed by:

Content Type	Narrowed by
Dockets	-None-

3:13cv4134, Unwired Planet, Llc V. Apple, Inc.

US District Court Docket

United States District Court, California Northern

(San Francisco)

This case was retrieved on 06/23/2022

Header

Case Number: 3:13cv4134
Date Filed: 09/06/2013
Assigned To: Judge Vince Chhabria
Referred To: Magistrate Judge Joseph C. Spero
Nature of Suit: Patent (830)
Cause: Patent Infringement
Lead Docket: None
Other Docket: Federal Circuit, 15-01795. Nevada, 3:12-cv-00505
Jurisdiction: Federal Question

Class Code: Closed
Closed: 04/25/2017
Statute: 15:1126
Jury Demand: Both
Demand Amount: $0
NOS Description: Patent

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Proceedings

#	Date	Proceeding Text	Source
1	09/19/2012	COMPLAINT against Apple, Inc. (Filing fee $ 350 receipt number 0978-2527930), filed by Unwired Planet, LLC. Certificate of Interested Parties due by 9/29/2012. Proof of service due by 1/17/2013. (Attachments: # 1 Exhibit A, # 2 Exhibit B, # 3 Exhibit C, # 4 Exhibit D, # 5 Exhibit E, # 6 Exhibit F, # 7 Exhibit G, # 8 Exhibit H, # 9 Exhibit I, # 10 Exhibit J, # 11 Civil Cover Sheet, # 12 Summons) (Rounds, Michael) Modified on 9/20/2012 to reflect that Summons was issued on 9/20/2012 (HJ). (Entered: 09/19/2012)	
2	09/20/2012	NOTICE TO COUNSEL PURSUANT TO LOCAL RULE IA 10-2. Counsel Theodore Stevenson III to comply with completion and electronic filing of the Designation of Local Counsel and Verified Petition. For your convenience, click on the following link to obtain the form from the Court's website - www.nvd.uscourts.gov/Forms.aspx. Counsel is also required to register for the Court's Case Management and Electronic Case	

#	Date	Proceeding Text	Source
		Filing (CM/ECF) system and the electronic service of pleadings. Please visit the Court's website www.nvd.uscourts.gov to register Attorney(s). Verified Petition due by 11/4/2012.(no image attached) (WJ) (Entered: 09/20/2012)	
3	09/20/2012	NOTICE TO COUNSEL PURSUANT TO LOCAL RULE IA 10-2. Counsel Kevin Burgess to comply with completion and electronic filing of the Designation of Local Counsel and Verified Petition. For your convenience, click on the following link to obtain the form from the Court's website - www.nvd.uscourts.gov/Forms.aspx. Counsel is also required to register for the Court's Case Management and Electronic Case Filing (CM/ECF) system and the electronic service of pleadings. Please visit the Court's website www.nvd.uscourts.gov to register Attorney(s). Verified Petition due by 11/4/2012.(no image attached) (WJ) (Entered: 09/20/2012)	
4	09/20/2012	NOTICE TO COUNSEL PURSUANT TO LOCAL RULE IA 10-2. Counsel Pierre Hubert to comply with completion and electronic filing of the Designation of Local Counsel and Verified Petition. For your convenience, click on the following link to obtain the form from the Court's website - www.nvd.uscourts.gov/Forms.aspx. Counsel is also required to register for the Court's Case Management and Electronic Case Filing (CM/ECF) system and the electronic service of pleadings. Please visit the Court's website www.nvd.uscourts.gov to register Attorney(s). Verified Petition due by 11/4/2012.(no image attached) (WJ) (Entered: 09/20/2012)	
	09/20/2012	Case assigned to Chief Judge Robert C. Jones and Magistrate Judge Valerie P. Cooke. Nature of Suit: 830 Patent Case (WJ) (Entered: 09/20/2012)	
5	09/20/2012	AO 120 - REPORT on the filing or determination of an action regarding a patent or trademark. E-mailed to the US Patent and Trademark Office. (Attachments: # 1 Complaint) (HJ) (Entered: 09/20/2012)	
6	09/20/2012	SUMMONS ISSUED as to Apple, Inc. re 1 Complaint. (HJ) (Entered: 09/20/2012)	
7	09/28/2012	CERTIFICATE of Interested Parties filed by Unwired Planet, LLC that identifies all parties that have an interest in the outcome of this case. Corporate Parent Unwired Planet, Inc., Corporate Parent Unwired Planet IP Holdings, Inc. for Unwired Planet, LLC added.. (Yowell, Adam) (Entered: 09/28/2012)	
8	10/12/2012	SUMMONS Returned Executed by Unwired Planet, LLC. Unwired Planet, LLC served on 10/9/2012, answer due 10/30/2012. (Rounds, Michael) (Entered: 10/12/2012)	
9	10/23/2012	STIPULATION FOR EXTENSION OF TIME (First Request) by Defendant Apple, Inc.. (Fountain, Jonathan) (Entered: 10/23/2012)	
10	10/24/2012	ORDER ON STIPULATION re 9 Stipulation to Extend Time to Answer, Move, or Otherwise Respond to Complaint. Apple, Inc. answer due 11/29/2012. Signed by Magistrate Judge Valerie P. Cooke on 10/24/12. (Copies have been distributed pursuant to the NEF - JC) (Entered: 10/24/2012)	
11	10/29/2012	VERIFIED PETITION for Permission to Practice Pro Hac Vice by Theodore Stevenson, III and DESIGNATION of Local Counsel Michael D. Rounds (Filing fee $ 200 receipt number 0978-2578210) filed by Plaintiff Unwired Planet, LLC. Motion ripe 10/29/2012. (Rounds, Michael) (Entered: 10/29/2012)	
12	10/29/2012	VERIFIED PETITION for Permission to Practice Pro Hac Vice by Pierre Hubert and DESIGNATION of Local Counsel Michael D. Rounds (Filing fee $ 200 receipt number 0978-2578224) filed by Plaintiff Unwired Planet, LLC. Motion ripe 10/29/2012. (Rounds, Michael) (Entered: 10/29/2012)	
13	10/29/2012	VERIFIED PETITION for Permission to Practice Pro Hac Vice by	

#	Date	Proceeding Text	Source
		Kevin Burgess and DESIGNATION of Local Counsel Michael D. Rounds (Filing fee $ 200 receipt number 0978-2578233) filed by Plaintiff Unwired Planet, LLC. Motion ripe 10/29/2012. (Rounds, Michael) (Entered: 10/29/2012)	
14	11/01/2012	ORDER APPROVING 11 Verified Petition for Permission to Practice Pro Hac Vice for Theodore Stevenson, III, and approving Designation of Local Counsel Michael Rounds. Signed by Chief Judge Robert C. Jones on 11/1/12. Any Attorney not yet registered with the Court's CM/ECF System shall submit a Registration Form on the Court's website www.nvd.uscourts.gov (Copies have been distributed pursuant to the NEF - JC) (Entered: 11/02/2012)	
15	11/01/2012	ORDER APPROVING 12 Verified Petition for Permission to Practice Pro Hac Vice for Pierre J. Hubert and approving Designation of Local Counsel Michael Rounds. Signed by Chief Judge Robert C. Jones on 11/1/12. Any Attorney not yet registered with the Court's CM/ECF System shall submit a Registration Form on the Court's website www.nvd.uscourts.gov (Copies have been distributed pursuant to the NEF - JC) (Entered: 11/02/2012)	
16	11/01/2012	ORDER APPROVING 13 Verified Petition for Permission to Practice Pro Hac Vice for Kevin L. Burgess and approving Designation of Local Counsel Michael Rounds. Signed by Chief Judge Robert C. Jones on 11/1/12. Any Attorney not yet registered with the Court's CM/ECF System shall submit a Registration Form on the Court's website www.nvd.uscourts.gov (Copies have been distributed pursuant to the NEF - JC) (Entered: 11/02/2012)	
17	11/15/2012	VERIFIED PETITION for Permission to Practice Pro Hac Vice by H. Mark Lyon and DESIGNATION of Local Counsel Jonathan W. Fountain (Filing fee $ 200 receipt number 0978-2604080) by Defendant Apple, Inc.. Motion ripe 11/15/2012. (Fountain, Jonathan) (Entered: 11/15/2012)	
18	11/15/2012	VERIFIED PETITION for Permission to Practice Pro Hac Vice by Stuart M. Rosenberg and DESIGNATION of Local Counsel Jonathan W. Fountain (Filing fee $ 200 receipt number 0978-2604116) by Defendant Apple, Inc.. Motion ripe 11/15/2012. (Fountain, Jonathan) (Entered: 11/15/2012)	
19	11/15/2012	VERIFIED PETITION for Permission to Practice Pro Hac Vice by Y. Ernest Hsin and DESIGNATION of Local Counsel Jonathan W. Fountain (Filing fee $ 200 receipt number 0978-2604127) by Defendant Apple, Inc.. Motion ripe 11/15/2012. (Fountain, Jonathan) (Entered: 11/15/2012)	
20	11/15/2012	VERIFIED PETITION for Permission to Practice Pro Hac Vice by Brooke Wallace and DESIGNATION of Local Counsel Jonathan W. Fountain (Filing fee $ 200 receipt number 0978-2604135) by Defendant Apple, Inc.. Motion ripe 11/15/2012. (Fountain, Jonathan) (Entered: 11/15/2012)	
21	11/15/2012	VERIFIED PETITION for Permission to Practice Pro Hac Vice by Etai Lahav and DESIGNATION of Local Counsel Jonathan W. Fountain (Filing fee $ 200 receipt number 0978-2604141) by Defendant Apple, Inc.. Motion ripe 11/15/2012. (Fountain, Jonathan) (Entered: 11/15/2012)	
22	11/15/2012	VERIFIED PETITION for Permission to Practice Pro Hac Vice by Josh A. Krevitt and DESIGNATION of Local Counsel Jonathan W. Fountain (Filing fee $ 200 receipt number 0978-2604155) by Defendant Apple, Inc.. Motion ripe 11/15/2012. (Fountain, Jonathan) (Entered: 11/15/2012)	
23	11/28/2012	ORDER APPROVING 17 Verified Petition for Permission to	

#	Date	Proceeding Text	Source
		Practice Pro Hac Vice for Mark Lyon and approving Designation of Local Counsel Jonathan Fountain. Signed by Chief Judge Robert C. Jones on 11/28/12. Any Attorney not yet registered with the Court's CM/ECF System shall submit a Registration Form on the Court's website www.nvd.uscourts.gov (Copies have been distributed pursuant to the NEF - JC) (Entered: 11/29/2012)	
24	11/28/2012	ORDER APPROVING 18 Verified Petition for Permission to Practice Pro Hac Vice for Stuart Rosenberg and approving Designation of Local Counsel Jonathan Fountain. Signed by Chief Judge Robert C. Jones on 11/28/12. Any Attorney not yet registered with the Court's CM/ECF System shall submit a Registration Form on the Court's website www.nvd.uscourts.gov (Copies have been distributed pursuant to the NEF - JC) (Entered: 11/29/2012)	
25	11/28/2012	ORDER APPROVING 19 Verified Petition for Permission to Practice Pro Hac Vice for Y. Ernest Hsin and approving Designation of Local Counsel Jonathan Fountain. Signed by Chief Judge Robert C. Jones on 11/28/12. Any Attorney not yet registered with the Court's CM/ECF System shall submit a Registration Form on the Court's website www.nvd.uscourts.gov (Copies have been distributed pursuant to the NEF - JC) (Entered: 11/29/2012)	
26	11/28/2012	ORDER APPROVING 21 Verified Petition for Permission to Practice Pro Hac Vice for Etai Lahav and approving Designation of Local Counsel Jonathan Fountain. Signed by Chief Judge Robert C. Jones on 11/28/12. Any Attorney not yet registered with the Court's CM/ECF System shall submit a Registration Form on the Court's website www.nvd.uscourts.gov (Copies have been distributed pursuant to the NEF - JC) (Entered: 11/29/2012)	
27	11/28/2012	ORDER APPROVING 22 Verified Petition for Permission to Practice Pro Hac Vice for Josh Krevitt and approving Designation of Local Counsel Jonathan Fountain. Signed by Chief Judge Robert C. Jones on 11/28/12. Any Attorney not yet registered with the Court's CM/ECF System shall submit a Registration Form on the Court's website www.nvd.uscourts.gov (Copies have been distributed pursuant to the NEF - JC) (Entered: 11/29/2012)	
28	11/28/2012	ORDER APPROVING 20 Verified Petition for Permission to Practice Pro Hac Vice for Brooke Wallace and approving Designation of Local Counsel Jonathan Fountain. Signed by Chief Judge Robert C. Jones on 11/28/12. Any Attorney not yet registered with the Court's CM/ECF System shall submit a Registration Form on the Court's website www.nvd.uscourts.gov (Copies have been distributed pursuant to the NEF - JC) (Entered: 11/29/2012)	
29	11/29/2012	ANSWER to 1 Complaint,, with Jury Demand (Certificate of Interested Parties due by 12/9/2012., Discovery Plan/Scheduling Order due by 1/13/2013.), COUNTERCLAIM against Unwired Planet, LLC filed by Apple, Inc.. (Attachments: # 1 Exhibit 1, # 2 Exhibit 2, # 3 Exhibit 3, # 4 Exhibit 4, # 5 Exhibit 5, # 6 Exhibit 6, # 7 Exhibit 7, # 8 Exhibit 8, # 9 Exhibit 9, # 10 Exhibit 10, # 11 Exhibit 11, # 12 Exhibit 12, # 13 Exhibit 13, # 14 Exhibit 14, # 15 Exhibit 15, # 16 Exhibit 16, # 17 Exhibit 17, # 18 Exhibit 18)(Fountain, Jonathan) (Entered: 11/29/2012)	
30	11/30/2012	NOTICE PURSUANT TO LOCAL RULE IB 2-2: In accordance with 28 USC § 636(c) and FRCP 73, the parties in this action are provided with a link to the "AO 85 Notice of Availability, Consent, and Order of Reference - Exercise of Jurisdiction by a U.S. Magistrate Judge" form on the Court's website - www.nvd.uscourts.gov. Consent forms should NOT be electronically filed. Upon consent of all parties, counsel are	

#	Date	Proceeding Text	Source
		advised to manually file the form with the Clerk's Office. A copy of form AO 85 has been mailed to parties not receiving electronic service. (no image attached) (DRM) (Entered: 11/30/2012)	
31	12/10/2012	CERTIFICATE of Interested Parties filed by Apple, Inc.. There are no known interested parties other than those participating in the case. (Fountain, Jonathan) (Entered: 12/10/2012)	
32	12/21/2012	Plaintiff's ANSWER to 29 Answer to Complaint,,, Counterclaim,, with Certificate of Service filed by Unwired Planet, LLC.(Rounds, Michael) (Entered: 12/21/2012)	
33	01/11/2013	PROPOSED Discovery Plan/Scheduling Order filed by Counter Defendant Unwired Planet, LLC, Plaintiff Unwired Planet, LLC Special Scheduling Review Requested. (Rounds, Michael) (Entered: 01/11/2013)	
34	01/17/2013	MINUTE ORDER IN CHAMBERS of the Honorable Magistrate Judge Valerie P. Cooke, on 1/17/2013. By Deputy Clerk: LGM. A Case Management Conference is set for 2/4/2013 at 11:00 AM in Reno Courtroom 1 before Magistrate Judge Valerie P. Cooke. Out-of-town and out-of-state counsel shall be allowed to appear telephonically for this hearing and shall advise Lisa Mann at (775)686-5653 at least two (2) days prior of the telephone number at which counsel can be reached for the conference. The parties shall jointly file a case management report by no later than the close of business on Thursday, January 24, 2013. See the attached order for specifications. (Copies have been distributed pursuant to the NEF - LGM) (Entered: 01/17/2013)	
35	01/24/2013	Joint STATUS REPORT CASE MANAGEMENT REPORT by Counter Defendant Unwired Planet, LLC, Plaintiff Unwired Planet, LLC. (Rounds, Michael) (Entered: 01/24/2013)	
36	01/31/2013	MINUTE ORDER IN CHAMBERS of the Honorable Magistrate Judge Valerie P. Cooke, on 1/31/2013. By Deputy Clerk: LGM. Out-of-town and out-of-state counsel appearing telephonically for the case management conference set before this Court on Monday, February 4, 2013 at 11:00 AM shall dial 877-336-1829 at least five (5) minutes prior to the hearing to be properly connected into the courtroom. The Access Code is 2809752 and the Security Code is 125050204. IT IS SO ORDERED. (no image attached) (Copies have been distributed pursuant to the NEF - LGM) (Entered: 01/31/2013)	
37	02/01/2013	MOTION to Transfer by Counter Claimant Apple, Inc., Defendant Apple, Inc.. Responses due by 2/18/2013. (Attachments: # 1 Declaration Mark Buckley, # 2 Declaration Danielle Durkee, # 3 Declaration Brooke Wallace, # 4 Exhibit 1 (Part 1 of 4), # 5 Exhibit 1 (Part 2 of 4), # 6 Exhibit 1 (Part 3 of 4), # 7 Exhibit 1 (Part 4 of 4), # 8 Exhibit 2, # 9 Exhibit 3, # 10 Exhibit 4, # 11 Exhibit 5, # 12 Exhibit 6, # 13 Exhibit 7, # 14 Exhibit 8, # 15 Exhibit 9, # 16 Exhibit 10, # 17 Exhibit 11, # 18 Exhibit 12, # 19 Exhibit 13, # 20 Exhibit 14, # 21 Exhibit 15, # 22 Exhibit 16, # 23 Exhibit 17, # 24 Exhibit 18, # 25 Exhibit 19)(Fountain, Jonathan) (Entered: 02/01/2013)	
38	02/04/2013	SCHEDULING ORDER Minute Order in Chambers of Magistrate Judge Valerie P. Cooke on 2/4/13. Discovery due: 10/7/2013 Please see attached for other deadlines and details. (Copies have been distributed pursuant to the NEF - JC) (Entered: 02/05/2013)	
39	02/04/2013	MINUTES OF PROCEEDINGS - Case Management Conference held on 2/4/2013 before Magistrate Judge Valerie P. Cooke. Crtrm Administrator: LGM; Pla Counsel: Adam Yowell and (By telephone) Michael Rounds, Pierre Hubert and John Shoemaker; Def Counsel: Ernest Hsin, Leif Reid, and Johnathan Fountain; Court Reporter/FTR #: 11:05:44 - 11:23:56; Time of Hearing:	

#	Date	Proceeding Text	Source
		11:05 a.m.; Courtroom: 1; The Court recites the agreement of parties regarding certain protocol and procedures they intend to abide by as they proceed with litigation in this action. The first pre-claim settlement conference is set for Friday, July 12, 2013 at 9:00 AM. Monthly Case Management Conferences are scheduled as follows: 3/15/2013 at 10:00 AM, 4/11/2013 at 09:00 AM, 5/10/2013 at 10:00 AM, 6/10/2013 at 09:00 AM, 7/11/2013 at 10:00 AM, and 8/9/2013 at 09:00 AM all in Reno Courtroom 1 before Magistrate Judge Valerie P. Cooke. Counsel shall file a joint or separate case management report by no later than the close of business three (3) court days prior to each conference. See the attached order for specifications. (Copies have been distributed pursuant to the NEF - LGM) (Entered: 02/06/2013)	
40	02/11/2013	TRANSCRIPT of Proceedings, 39 Miscellaneous Hearing, held on 2/4/13, before Magistrate Judge Valerie P. Cooke. Court Reporter/Transcriber: Donna Davidson, 775-329-0132. Transcript may be viewed at the court public terminal or purchased through the Court Reporter/Transcriber using the court's "Transcript Order" form available on our website www.nvd.uscourts.gov before the deadline for Release of Transcript Restriction. After that date it may be obtained through PACER Redaction Request due 3/4/2013. Redacted Transcript Deadline set for 3/14/2013. Release of Transcript Restriction set for 5/12/2013. (DD) (Entered: 02/11/2013)	
41	02/14/2013	STIPULATION FOR EXTENSION OF TIME (First Request) re 37 MOTION to Transfer ; TO FILE AND SERVE OPPOSITION TO APPLE INC.'S MOTION TO TRANSFER by Counter Defendant Unwired Planet, LLC, Plaintiff Unwired Planet, LLC. (Rounds, Michael) (Entered: 02/14/2013)	
42	02/14/2013	STIPULATION FOR EXTENSION OF TIME (First Request) FOR SERVING ASSERTED CLAIMS AND INFRINGEMENT CONTENTIONS by Counter Defendant Unwired Planet, LLC, Plaintiff Unwired Planet, LLC. (Rounds, Michael) (Entered: 02/14/2013)	
43	02/19/2013	MINUTE ORDER IN CHAMBERS of the Honorable Magistrate Judge Valerie P. Cooke, on 2/19/2013. By Deputy Clerk: LGM. In light of a conflict with the Court's calendar, the case management conference currently set for 3/15/2013 at 10:00 AM is VACATED and ADVANCED to 3/11/2013 at 09:00 AM in Reno Courtroom 1 before Magistrate Judge Valerie P. Cooke. Counsel shall file a joint or separate case management report by no later than the close of business on Wednesday, March 6, 2013. IT IS SO ORDERED. (no image attached) (Copies have been distributed pursuant to the NEF - LGM) (Entered: 02/19/2013)	
44	02/19/2013	VERIFIED PETITION for Permission to Practice Pro Hac Vice by John Shumaker and DESIGNATION of Local Counsel Michael D. Rounds (Filing fee $ 200 receipt number 0978-2710416) filed by Counter Defendant Unwired Planet, LLC, Plaintiff Unwired Planet, LLC. Motion ripe 2/19/2013. (Rounds, Michael) (Entered: 02/19/2013)	
45	02/19/2013	VERIFIED PETITION for Permission to Practice Pro Hac Vice by James E. Quigley and DESIGNATION of Local Counsel Michael D. Rounds (Filing fee $ 200 receipt number 0978-2710423) filed by Counter Defendant Unwired Planet, LLC, Plaintiff Unwired Planet, LLC. Motion ripe 2/19/2013. (Rounds, Michael) (Entered: 02/19/2013)	
46	02/19/2013	VERIFIED PETITION for Permission to Practice Pro Hac Vice by Mieke Malmberg and DESIGNATION of Local Counsel Michael D. Rounds (Filing fee $ 200 receipt number 0978-2710432) filed by Counter Defendant Unwired Planet, LLC, Plaintiff Unwired Planet,	

#	Date	Proceeding Text	Source
		LLC. Motion ripe 2/19/2013. (Rounds, Michael) (Entered: 02/19/2013)	
47	02/19/2013	VERIFIED PETITION for Permission to Practice Pro Hac Vice by John F. Garvish and DESIGNATION of Local Counsel Michael D. Rounds (Filing fee $ 200 receipt number 0978-2710438) filed by Counter Defendant Unwired Planet, LLC, Plaintiff Unwired Planet, LLC. Motion ripe 2/19/2013. (Rounds, Michael) (Entered: 02/19/2013)	
48	02/19/2013	VERIFIED PETITION for Permission to Practice Pro Hac Vice by Mario A. Apreotesi and DESIGNATION of Local Counsel Michael D. Rounds (Filing fee $ 200 receipt number 0978-2710440) filed by Counter Defendant Unwired Planet, LLC, Plaintiff Unwired Planet, LLC. Motion ripe 2/19/2013. (Rounds, Michael) (Entered: 02/19/2013)	
49	02/20/2013	VERIFIED PETITION for Permission to Practice Pro Hac Vice by Ryan James Cudnik and DESIGNATION of Local Counsel Michael D. Rounds (Filing fee $ 200 receipt number 0978-2711052) filed by Counter Defendant Unwired Planet, LLC, Plaintiff Unwired Planet, LLC. Motion ripe 2/20/2013. (Rounds, Michael) (Entered: 02/20/2013)	
50	02/21/2013	ORDER on Stipulation 41 re 37 MOTION to Transfer filed by Apple, Inc., (Responses due by 3/6/2013.) Signed by Chief Judge Robert C. Jones on 02/21/13. (Copies have been distributed pursuant to the NEF - LG) (Entered: 02/21/2013)	
51	02/21/2013	ORDER ON STIPULATION re 42 Stipulation, GRANTING extention of time for serving asserted claims and infringement contentions. Signed by Chief Judge Robert C. Jones on 02/21/13. (Copies have been distributed pursuant to the NEF - LG) (Entered: 02/21/2013)	
52	02/21/2013	ORDER granting 44 Verified Petition for Permission to Practice Pro Hac Vice for Attorney John Shumaker for Unwired Planet, LLC and approving Designation of Local Counsel. Signed by Chief Judge Robert C. Jones on 02/21/13. Any Attorney not yet registered with the Court's CM/ECF System shall submit a Registration Form on the Court's website www.nvd.uscourts.gov (Copies have been distributed pursuant to the NEF - LG) (Entered: 02/21/2013)	
53	02/21/2013	ORDER granting 45 Verified Petition for Permission to Practice Pro Hac Vice for Attorney James E. Quigley for Unwired Planet, LLC and approving Designation of Local Counsel. Signed by Chief Judge Robert C. Jones on 02/21/13. Any Attorney not yet registered with the Court's CM/ECF System shall submit a Registration Form on the Court's website www.nvd.uscourts.gov (Copies have been distributed pursuant to the NEF - LG) (Entered: 02/21/2013)	
54	02/21/2013	ORDER granting 46 Verified Petition for Permission to Practice Pro Hac Vice for Attorney Mieke Malmberg for Unwired Planet and approving Designation of Local Counsel. Signed by Chief Judge Robert C. Jones on 02/21/13. Any Attorney not yet registered with the Court's CM/ECF System shall submit a Registration Form on the Court's website www.nvd.uscourts.gov (Copies have been distributed pursuant to the NEF - LG) (Entered: 02/21/2013)	
55	02/21/2013	ORDER granting 47 Verified Petition for Permission to Practice Pro Hac Vice for Attorney John F. Garvish for Unwired Planet, LLC and approving Designation of Local Counsel. Signed by Chief Judge Robert C. Jones on 02/21/13. Any Attorney not yet registered with the Court's CM/ECF System shall submit a Registration Form on the Court's website www.nvd.uscourts.gov (Copies have been distributed pursuant to the NEF - LG)	

#	Date	Proceeding Text	Source
		(Entered: 02/21/2013)	
56	02/21/2013	ORDER granting 48 Verified Petition for Permission to Practice Pro Hac Vice for Attorney Mario A. Apreotesi for Unwired Planet, LLC and approving Designation of Local Counsel. Signed by Chief Judge Robert C. Jones on 02/21/13. Any Attorney not yet registered with the Court's CM/ECF System shall submit a Registration Form on the Court's website www.nvd.uscourts.gov (Copies have been distributed pursuant to the NEF - LG) (Entered: 02/21/2013)	
57	02/21/2013	MINUTE ORDER IN CHAMBERS of the Honorable Chief Judge Robert C. Jones, on February 21, 2013, by Carrie Lipparelli, Judicial Assistant. IT IS HEREBY ORDERED that 49 Verified Petition for Permission to Practice Pro Hac Vice and approving Designation of Local Counsel for Ryan James Cudnik is DENIED. IT IS SO ORDERED. Signed by Chief Judge Robert C. Jones. (Copies have been distributed pursuant to the NEF - CL) (Entered: 02/21/2013)	
58	02/28/2013	VERIFIED PETITION for Permission to Practice Pro Hac Vice by John B. Campbell and DESIGNATION of Local Counsel Michael D. Rounds (Filing fee $ 200 receipt number 0978-2721753) filed by Counter Defendant Unwired Planet, LLC, Plaintiff Unwired Planet, LLC. Motion ripe 2/28/2013. (Rounds, Michael) (Entered: 02/28/2013)	
59	03/01/2013	ORDER APPROVING 58 Verified Petition for Permission to Practice Pro Hac Vice by Attorney John B. Campbell for Unwired Planet, LLC, and approving Designation of Local Counsel Michael D. Rounds. Signed by Chief Judge Robert C. Jones on 03/01/2013. Any Attorney not yet registered with the Court's CM/ECF System shall submit a Registration Form on the Court's website www.nvd.uscourts.gov (Copies have been distributed pursuant to the NEF - KR) (Entered: 03/01/2013)	
60	03/05/2013	MINUTE ORDER IN CHAMBERS of the Honorable Magistrate Judge Valerie P. Cooke, on 3/5/2013. By Deputy Clerk: LGM. Out-of-town counsel shall be allowed to appear telephonically at the case management conference set for Monday, March 11, 2013 at 9:00 AM and shall dial 877-336-1829 at least five (5) minutes prior to the hearing to be properly connected into the courtroom. The Access Code is 2809752 and the Security Code is 125050311. IT IS SO ORDERED. (no image attached) (Copies have been distributed pursuant to the NEF - LGM) (Entered: 03/05/2013)	
61	03/06/2013	MOTION for Leave to File Brief, Declaration and Exhibit Under Seal by Plaintiff Unwired Planet, LLC. Motion ripe 3/6/2013. (Attachments: # 1 Proposed Order 1-(Proposed) Order Granting Motion to For Leave to File Under Seal)(Rounds, Michael) (Entered: 03/06/2013)	
62	03/06/2013	DECLARATION of MICHAEL D. ROUNDS re 61 MOTION for Leave to File Brief, Declaration and Exhibit Under Seal ; by Plaintiff Unwired Planet, LLC. (Rounds, Michael) (Entered: 03/06/2013)	
63	03/06/2013	***DOCUMENT BLOCKED, REFER TO DOCUMENT # 164 *** RESPONSE to 37 MOTION to Transfer, filed by Plaintiff Unwired Planet, LLC. Non-Confidential / Public Version Replies due by 3/16/2013. (Rounds, Michael) Modified on 10/30/2013 (cpS, COURT STAFF). (Entered: 03/06/2013)	
64	03/06/2013	DECLARATION of JOHN F. GARVISH, II re 63 Response to 37 Motion ; by Plaintiff Unwired Planet, LLC. (Attachments: # 1 Exhibit 20-26, # 2 Exhibit 27-32, # 3 Exhibit 33-37, # 4 Exhibit 38-52, # 5 Exhibit 53-57, # 6 Exhibit 58-61, # 7 Exhibit 62, # 8 Exhibit 63-68, # 9 Exhibit 69-75, # 10 Exhibit 76-81)(Rounds, Michael)	

#	Date	Proceeding Text	Source
		Modified on 3/12/2013 link to motion added. (BLG). (Entered: 03/06/2013)	
65	03/06/2013	DECLARATION of DANIEL MENDEZ re 63 Response to 37 Motion ; by Plaintiff Unwired Planet, LLC. (Rounds, Michael) Modified on 3/12/2013 link added. (BLG). (Entered: 03/06/2013)	
66	03/06/2013	DECLARATION of MIKE MULICA re 63 Response to 37 Motion ; by Plaintiff Unwired Planet, LLC. (Rounds, Michael) Modified on 3/12/2013 link added. (BLG). (Entered: 03/06/2013)	
67	03/06/2013	DECLARATION of TIMOTHY ROBBINS re 63 Response to 37 Motion ; by Plaintiff Unwired Planet, LLC. (Rounds, Michael) Modified on 3/12/2013 link added. (BLG). (Entered: 03/06/2013)	
68	03/06/2013	DECLARATION of ERIC VETTER re 63 Response to 37 Motion ; by Plaintiff Unwired Planet, LLC. (Rounds, Michael) Modified on 3/12/2013 link added.(BLG). (Entered: 03/06/2013)	
72	03/06/2013	STATUS REPORT Joint Case Management Report by Defendant Apple, Inc., Plaintiff Unwired Planet, LLC. (Attachments: # 1 Exhibit A, # 2 Exhibit B, # 3 Exhibit C, # 4 Exhibit D, # 5 Exhibit E, # 6 Exhibit F, # 7 Exhibit G, # 8 Exhibit H, # 9 Exhibit I, # 10 Exhibit J, # 11 Exhibit K, # 12 Exhibit L, # 13 Exhibit M)(Rounds, Michael) (Entered: 03/06/2013)	
73	03/11/2013	MINUTES OF PROCEEDINGS - Case Management Conference held on 3/11/2013 before Magistrate Judge Valerie P. Cooke. Crtrm Administrator: LGM; Pla Counsel: Michael Rounds, John Campbell, and Pierre Hubert; Def Counsel: Ernest Hsin and Jonathan Fountain; Court Reporter/FTR #: 9:02:49 - 10:16:56; Time of Hearing: 9:02 a.m.; Courtroom: 1; The Court approves and signs the order granting Unwired Planet's motion for leave to file declaration, deposition transcript and brief under seal 61 . The Court finds it shall take the issues concerning the protective order and number of claims under submission and enter an written order. Court adjourns. (Copies have been distributed pursuant to the NEF - LGM) (Entered: 03/11/2013)	
76	03/11/2013	ORDER Granting Unwired Planet's Motion for Leave to File Declaration, Deposition Transcript and Brief Under Seal. Signed by Magistrate Judge Valerie P. Cooke on 3/11/13. (Copies have been distributed pursuant to the NEF - JC) (Entered: 03/13/2013)	
74	03/12/2013	STIPULATION FOR EXTENSION OF TIME (First Request) re 63 Response to Motion ; by Counter Claimant Apple, Inc., Defendant Apple, Inc.. (Fountain, Jonathan) (Entered: 03/12/2013)	
75	03/12/2013	ERRATA to 63 Response to 37 Motion ; Corrections to Confidential Brief (Doc. 69) and Non-Confidential Brief (Doc. 63) filed by Plaintiff Unwired Planet, LLC. (Yowell, Adam) Modified on 3/13/2013 add link to motion (WJ). (Entered: 03/12/2013)	
77	03/16/2013	MINUTE ORDER IN CHAMBERS of the Honorable Chief Judge Robert C. Jones, on March 16, 2013, by Carrie L. Lipparelli, Judicial Assistant. IT IS HEREBY ORDERED that 74 Stipulation Extending the Time for Defendant Apple Inc. To File and Serve a Reply in Support of its Motion to Transfer (First Request) is GRANTED. Defendant Apple Inc. shall file a reply in support of its motion to transfer on or before March 25, 2013. IT IS SO ORDERED. Signed Chief Judge Robert C. Jones. (Copies have been distributed pursuant to the NEF - CL) (Entered: 03/16/2013)	
78	03/20/2013	TRANSCRIPT of Proceedings, 73 Order on Motion for Leave to File, Miscellaneous Hearing,,,, held on 3-11-13, before Magistrate Judge Valerie P. Cooke. Court Reporter/Transcriber: Kathy French, 530-913-9213. Transcript may be viewed at the court public terminal or purchased through the Court Reporter/Transcriber using the court's "Transcript Order" form available on our website <a href=http://www.nvd.uscourts.gov	

#	Date	Proceeding Text	Source
		target=_blank>www.nvd.uscourts.gov before the deadline for Release of Transcript Restriction. After that date it may be obtained through PACER Redaction Request due 4/10/2013. Redacted Transcript Deadline set for 4/20/2013. Release of Transcript Restriction set for 6/18/2013. (KF) (Entered: 03/20/2013)	
79	03/25/2013	VERIFIED PETITION for Permission to Practice Pro Hac Vice by Warren H. Lipschitz and DESIGNATION of Local Counsel Michael D. Rounds (Filing fee $ 200 receipt number 0978-2752493) filed by Counter Defendant Unwired Planet, LLC, Plaintiff Unwired Planet, LLC . Motion ripe 3/25/2013. (Rounds, Michael) (Entered: 03/25/2013)	
80	03/25/2013	VERIFIED PETITION for Permission to Practice Pro Hac Vice by Ashley N. Moore and DESIGNATION of Local Counsel Michael D. Rounds (Filing fee $ 200 receipt number 0978-2752502) filed by Counter Defendant Unwired Planet, LLC, Plaintiff Unwired Planet, LLC . Motion ripe 3/25/2013. (Rounds, Michael) (Entered: 03/25/2013)	
81	03/25/2013	REPLY to Response to 37 MOTION to Transfer filed by Counter Claimant Apple, Inc., Defendant Apple, Inc.. (Attachments: # 1 Declaration Thomas Bernard, # 2 Declaration Brooke Wallace, # 3 Exhibit 1, # 4 Exhibit 2, # 5 Exhibit 3, # 6 Exhibit 4, # 7 Exhibit 5)(Fountain, Jonathan) (Entered: 03/25/2013)	
82	03/29/2013	VERIFIED PETITION for Permission to Practice Pro Hac Vice by Steven Kalogeras and DESIGNATION of Local Counsel Jonathan W. Fountain (Filing fee $ 200 receipt number 0978-2760163) by Counter Claimant Apple, Inc., Defendant Apple, Inc.. Motion ripe 3/29/2013. (Fountain, Jonathan) (Entered: 03/29/2013)	
83	04/04/2013	MOTION for Leave to File Sur-Reply to Apple's Reply in Support of Its Motion to Transfer Venue by Plaintiff Unwired Planet, LLC. Motion ripe 4/4/2013. (Attachments: # 1 Proposed Order)(Yowell, Adam) (Entered: 04/04/2013)	
84	04/04/2013	MOTION to Seal Motion for Leave to File Sur-Reply Brief Under Seal by Plaintiff Unwired Planet, LLC. Motion ripe 4/4/2013. (Attachments: # 1 Proposed Order)(Yowell, Adam) (Entered: 04/04/2013)	
86	04/04/2013	REPLY to Response to 37 MOTION to Transfer filed by Plaintiff Unwired Planet, LLC. Sur-Reply In Opposition to Apple's Motion to Transfer Venue--REDACTED (Yowell, Adam) (Entered: 04/04/2013)	
87	04/08/2013	ORDER APPROVING 79 Verified Petition for Permission to Practice Pro Hac Vice for Attorney Warren H. Lipschitz for Unwired Planet, LLC and approving Designation of Local Counsel Michael D. Rounds. Signed by Chief Judge Robert C. Jones on 4/5/2013. Any Attorney not yet registered with the Court's CM/ECF System shall submit a Registration Form on the Court's website www.nvd.uscourts.gov (Copies have been distributed pursuant to the NEF - DRM) (Entered: 04/08/2013)	
88	04/08/2013	ORDER APPROVING 80 Verified Petition for Permission to Practice Pro Hac Vice for Attorney Ashley N. Moore for Unwired Planet, LLC and approving Designation of Local Counsel Michael D. Rounds. Signed by Chief Judge Robert C. Jones on 4/5/2013. Any Attorney not yet registered with the Court's CM/ECF System shall submit a Registration Form on the Court's website www.nvd.uscourts.gov (Copies have been distributed pursuant to the NEF - DRM) (Entered: 04/08/2013)	
89	04/08/2013	ORDER APPROVING 82 Verified Petition for Permission to Practice Pro Hac Vice for Attorney Steven Kalogeras for Apple, Inc. and approving Designation of Local Counsel Jonathan	

#	Date	Proceeding Text	Source
		Fountaion. Signed by Chief Judge Robert C. Jones on 4/5/2013. Any Attorney not yet registered with the Court's CM/ECF System shall submit a Registration Form on the Court's website www.nvd.uscourts.gov (Copies have been distributed pursuant to the NEF - DRM) (Entered: 04/08/2013)	
90	04/08/2013	STATUS REPORT for April 11, 2013 Case Management Conference by Counter Claimant Apple, Inc., Defendant Apple, Inc.. (Attachments: # 1 Exhibit 1, # 2 Exhibit 2, # 3 Exhibit 3)(Fountain, Jonathan) (Entered: 04/08/2013)	
91	04/08/2013	STATUS REPORT Case Management Report for April 11, 2013 Case Management Conference by Plaintiff Unwired Planet, LLC. (Rounds, Michael) (Entered: 04/08/2013)	
92	04/08/2013	DECLARATION of MICHAEL D. ROUNDS re 91 Status Report ; including Exhibits A, B, and C In Support of Case Management Report by Plaintiff Unwired Planet, LLC. (Rounds, Michael) (Entered: 04/08/2013)	
93	04/11/2013	ORDER re protective order provisions. The parties shall submit a protective order consistent with the attached order no later than Friday, April 19, 2013. Signed by Magistrate Judge Valerie P. Cooke on 4/11/13. (Copies have been distributed pursuant to the NEF - DN) (Entered: 04/11/2013)	
94	04/11/2013	MINUTES OF PROCEEDINGS - Case Management Conference held on 4/11/2013 before Magistrate Judge Valerie P. Cooke. Crtrm Administrator: LGM; Pla Counsel: Michael Rounds, John Campbell, and (By telephone) Pierre Hubert; Def Counsel: Ernest Hsin, Jonathan Fountain, and (By telephone) Brooke Wallace; Court Reporter/FTR #: 9:0048 - 10:09:54 and 10:15:12 - 10:39:34; Time of Hearing: 9:00 a.m.; Courtroom: 1; The Court hears from counsel regarding their respective positions concerning discovery disputes. Counsel are directed to meet and confer and propose an amended scheduling order. See the attached order for specifications. (Copies have been distributed pursuant to the NEF - LGM) (Entered: 04/12/2013)	
95	04/15/2013	TRANSCRIPT of Proceedings, 94 Miscellaneous Hearing,, held on 4-11-13, before Magistrate Judge Valerie P. Cooke. Court Reporter/Transcriber: Kathy French, 530-913-9213. Transcript may be viewed at the court public terminal or purchased through the Court Reporter/Transcriber using the court's "Transcript Order" form available on our website www.nvd.uscourts.gov before the deadline for Release of Transcript Restriction. After that date it may be obtained through PACER Redaction Request due 5/6/2013. Redacted Transcript Deadline set for 5/16/2013. Release of Transcript Restriction set for 7/14/2013. (KF) (Entered: 04/15/2013)	
96	04/17/2013	ORDER - UP shall limit its asserted claims to no more than 70. The parties shall meet and confer and shall submit an amended scheduling order that incorporates these rulings. (See pdf order for specifics.) Signed by Magistrate Judge Valerie P. Cooke on 4/17/2013. (Copies have been distributed pursuant to the NEF - DRM) (Main Document 96 replaced on 4/17/2013) (DRM). (Entered: 04/17/2013)	
97	04/17/2013	NOTICE of Corrected Image/Document re 96 Order (Original image was for an unrelated case, and has been replaced.) (Service of corrected image is attached). (DRM) (Entered: 04/17/2013)	
98	04/19/2013	MOTION FOR CLARIFICATION OF APRIL 11, 2013, ORDER re 93 Order, by Plaintiff Unwired Planet, LLC. Responses due by	

#	Date	Proceeding Text	Source
		5/6/2013. (Rounds, Michael) (Entered: 04/19/2013)	
99	04/19/2013	STIPULATION TO PRODUCE ELECTRONICALLY-STORED INFORMATION ACCORDING TO MODEL ORDER by Counter Defendant Unwired Planet, LLC, Plaintiff Unwired Planet, LLC. (Attachments: # 1 Exhibit A)(Rounds, Michael) (Entered: 04/19/2013)	
100	04/19/2013	Submission of PROPOSED ORDER filed by Counter Claimant Apple, Inc., Defendant Apple, Inc. Proposed Protective Order. (Fountain, Jonathan) (Entered: 04/19/2013)	
101	04/22/2013	RESPONSE to 83 MOTION for Leave to File Sur-Reply to Apple's Reply in Support of Its Motion to Transfer Venue, filed by Defendant Apple, Inc.. Replies due by 5/2/2013. (Krieger, John) (Entered: 04/22/2013)	
102	04/24/2013	ORDER ON 99 STIPULATION. The parties will produce electronically-stored information according to the Federal Circuit Advisory Council's Model Order Regarding E-Discovery In Patent Cases. Signed by Magistrate Judge Valerie P. Cooke on 04/24/2013. (Copies have been distributed pursuant to the NEF - KR) (Entered: 04/24/2013)	
103	04/25/2013	(1st Notice) PURSUANT TO SPECIAL ORDER 109: that Josh A. Krevitt is in violation of Special Order 109. Participation in the electronic filing system became mandatory for all attorneys effective January 1, 2006. You are required to register for the Court's Case Management and Electronic Case Filing (CM/ECF) program and the electronic service of pleadings. Please visit the Court's website to register for CM/ECF. (no image attached) (LG) (Entered: 04/25/2013)	
104	05/02/2013	STIPULATION FOR EXTENSION OF TIME (First Request) re 94 Miscellaneous Hearing,, 96 Order, ; for Apple to Serve its Local Rule 16.1-8 and 16.1-9 Disclosures and Document Production by Counter Claimant Apple, Inc., Defendant Apple, Inc.. (Fountain, Jonathan) (Entered: 05/02/2013)	
105	05/06/2013	RESPONSE to 98 MOTION FOR CLARIFICATION OF APRIL 11, 2013, ORDER re 93 Order, , filed by Counter Claimant Apple, Inc., Defendant Apple, Inc.. Replies due by 5/16/2013. (Attachments: # 1 Exhibit A)(Fountain, Jonathan) (Entered: 05/06/2013)	
106	05/07/2013	ORDER ON 104 STIPULATION, signed by Magistrate Judge Valerie P. Cooke on 05/07/2013. (Copies have been distributed pursuant to the NEF - KR) (Entered: 05/07/2013)	
107	05/07/2013	STATUS REPORT Case Management Conference Report [May 2013] by Counter Claimant Apple, Inc., Defendant Apple, Inc.. (Attachments: # 1 Exhibit A - Email Correspondence)(Fountain, Jonathan) (Entered: 05/07/2013)	
108	05/08/2013	STATEMENT of Unwired Planet Case Management Report by Counter Defendant Unwired Planet, LLC, Plaintiff Unwired Planet, LLC. (Attachments: # 1 Declaration Michael D. Rounds)(Rounds, Michael) (Entered: 05/08/2013)	
109	05/09/2013	MINUTE ORDER IN CHAMBERS of the Honorable Magistrate Judge Valerie P. Cooke, on 5/9/2013. By Deputy Clerk: LGM. Out-of-town and out-of-state counsel shall be allowed to appear telephonically for the case management conference set before this Court on Friday, May 10, 2013 at 10:00 AM and shall dial 877-336-1829 at least five (5) minutes prior to the hearing to be properly connected into the courtroom. The Access Code is 2809752 and the Security Code is 125050510. IT IS SO ORDERED. (no image attached) (Copies have been distributed pursuant to the NEF - LGM) (Entered: 05/09/2013)	
110	05/09/2013	STIPULATION REGARDING THE MAY 10, 2013 CASE MANAGEMENT CONFERENCE, UNWIRED PLANET'S LOCAL	

#	Date	Proceeding Text	Source
		PATENT RULE 16.1-7(B) DOCUMENT PRODUCTION, AND APPLE'S DUE DATE FOR IT'S INVALIDITY CONTENTIONS by Counter Defendant Unwired Planet, LLC, Plaintiff Unwired Planet, LLC. (Attachments: # 1 Exhibit A)(Rounds, Michael) (Entered: 05/09/2013)	
111	05/09/2013	MINUTE ORDER IN CHAMBERS of the Honorable Magistrate Judge Valerie P. Cooke, on 5/9/2013. By Deputy Clerk: LGM. In light of the parties' stipulation regarding the May 10, 2013 case management conference 110 , the case management conference set for Friday, May 10, 2013 at 10:00 AM is VACATED. IT IS SO ORDERED. (no image attached) (Copies have been distributed pursuant to the NEF - LGM) (Entered: 05/09/2013)	
112	05/10/2013	Unopposed MOTION to Amend/Correct Complaint re 1 Complaint,,. by Plaintiff Unwired Planet, LLC. Responses due by 5/27/2013. (Attachments: # 1 Exhibit 1-First Amended Complaint for Patent Infringement, # 2 Proposed Order Order Granting Leave to File First Amended Complaint for Patent Infringement)(Yowell, Adam) (Entered: 05/10/2013)	
113	05/16/2013	REPLY to Response to 98 MOTION FOR CLARIFICATION OF APRIL 11, 2013, ORDER re 93 Order, filed by Counter Defendant Unwired Planet, LLC, Plaintiff Unwired Planet, LLC. (Attachments: # 1 Exhibit A)(Rounds, Michael) (Entered: 05/16/2013)	
114	05/17/2013	ORDER granting 98 motion for clarification to the extent that the court clarifies that its order 93 is clear on its face. Signed by Magistrate Judge Valerie P. Cooke on 5/17/13. (Copies have been distributed pursuant to the NEF - DN) (Entered: 05/17/2013)	
115	05/22/2013	VERIFIED PETITION for Permission to Practice Pro Hac Vice by Kevin M. Kneupper and DESIGNATION of Local Counsel Michael D. Rounds (Filing fee $ 200 receipt number 0978-2827583) filed by Counter Defendant Unwired Planet, LLC, Plaintiff Unwired Planet, LLC . Motion ripe 5/22/2013. (Rounds, Michael) (Entered: 05/22/2013)	
116	05/22/2013	VERIFIED PETITION for Permission to Practice Pro Hac Vice by David Sochia and DESIGNATION of Local Counsel Michael D. Rounds (Filing fee $ 200 receipt number 0978-2828079) filed by Counter Defendant Unwired Planet, LLC, Plaintiff Unwired Planet, LLC . Motion ripe 5/22/2013. (Rounds, Michael) (Entered: 05/22/2013)	
117	05/29/2013	STIPULATION [PROPOSED] PROTECTIVE ORDER REGARDING THE DISCLOSURE AND USE OF DISCOVERY MATERIALS by Plaintiff Unwired Planet, LLC. (Rounds, Michael) (Entered: 05/29/2013)	
118	06/03/2013	PROTECTIVE ORDER re 117 Proposed Order. Signed by Magistrate Judge Valerie P. Cooke on 6/3/13. (Copies have been distributed pursuant to the NEF - JC) (Entered: 06/03/2013)	
119	06/04/2013	MINUTE ORDER IN CHAMBERS of the Honorable Magistrate Judge Valerie P. Cooke, on 6/4/2013. By Deputy Clerk: LGM. In light of a calendar conflict with plaintiff's counsel and having no objection from defendant's counsel, the Case Management Conference currently set for 6/10/2013 at 09:00 AM is VACATED and ADVANCED to 6/7/2013 at 09:00 AM in Reno Courtroom 1 before Magistrate Judge Valerie P. Cooke. Out-of-town and out-of-state counsel shall be allowed to appear telephonically for the case management conference and shall dial 877-336-1829 at least five (5) minutes prior to the hearing to be properly connected into the courtroom. The Access Code is 2809752 and the Security Code is 125050607. IT IS SO ORDERED. (no image attached) (Copies have been distributed pursuant to the NEF - LGM)	

#	Date	Proceeding Text	Source
		(Entered: 06/04/2013)	
120	06/04/2013	NOTICE of Appearance by attorney Michael D Rounds on behalf of Counter Defendant Unwired Planet, LLC, Plaintiff Unwired Planet, LLC. of RYAN J. CUDNIK (Rounds, Michael) (Entered: 06/04/2013)	
121	06/04/2013	ORDER granting 112 Motion to Amend/Correct Complaint. Signed by Magistrate Judge Valerie P. Cooke on 6/4/13. (Copies have been distributed pursuant to the NEF - JC) (Entered: 06/04/2013)	
122	06/05/2013	ORDER APPROVING 115 Verified Petition for Permission to Practice Pro Hac Vice by Attorney Kevin Kneupper for Unwired Planet, LLC, and approving Designation of Local Counsel Michael D. Rounds. Signed by Chief Judge Robert C. Jones on 06/04/2013. Any Attorney not yet registered with the Court's CM/ECF System shall submit a Registration Form on the Court's website www.nvd.uscourts.gov (Copies have been distributed pursuant to the NEF - KR) (Entered: 06/05/2013)	
123	06/05/2013	ORDER APPROVING 116 Verified Petition for Permission to Practice Pro Hac Vice by Attorney David Sochia for Unwired Planet, LLC, and approving Designation of Local Counsel Michael D. Rounds. Signed by Chief Judge Robert C. Jones on 06/04/2013. Any Attorney not yet registered with the Court's CM/ECF System shall submit a Registration Form on the Court's website www.nvd.uscourts.gov (Copies have been distributed pursuant to the NEF - KR) (Entered: 06/05/2013)	
124	06/05/2013	STATUS REPORT Case Management Conference Report [June 2013] by Defendant Apple, Inc.. (Attachments: # 1 Exhibit A)(Fountain, Jonathan) (Entered: 06/05/2013)	
125	06/05/2013	STATUS REPORT Case Management Conference Statement by Plaintiff Unwired Planet, LLC. (Attachments: # 1 Exhibit 1, # 2 Exhibit 2, # 3 Exhibit 3, # 4 Exhibit 4, # 5 Exhibit 5, # 6 Exhibit 6)(Rounds, Michael) (Entered: 06/05/2013)	
126	06/07/2013	MINUTES OF PROCEEDINGS - Case Management Conference held on 6/7/2013 before Magistrate Judge Valerie P. Cooke. Crtrm Administrator: Heidi Jordan; Pla Counsel: Michael Rounds, Ryan Cudnik; Def Counsel: Ernest Hsin, Jonathan Fountain (By telephone); Court Reporter/FTR #; 9:04 - 11:00; Courtroom: 1; The Court addresses the parties regarding the purpose of this hearing and notes the parties have filed their Case Management Conference Reports 124 125 . Having heard from counsel and good cause appearing, the Court finds as follows: Markman hearing currently set December 16, 2013, at 1:30 p.m. is RESCHEDULED to Tuesday, January 21-22, 2014, at 9:00 a.m.Pre-Claim Construction Settlement Conference currently set for July 12, 2013, at 9:00 a.m. is RESCHEDULED to Thursday, September 19, 2013, at 9:00 a.m. Settlement Statements due September 12, 2013. Regarding the remaining revised deadlines, counsel shall submit an amended Scheduling Order incorporating the new agreed upon deadlines on or before June 14, 2013. (Copies have been distributed pursuant to the NEF - HJ) (Entered: 06/10/2013)	
127	06/10/2013	TRANSCRIPT of Proceedings, 126 Status Conference,,,,, Set/Reset Deadlines,,,, held on 6-7-13, before Magistrate Judge Valerie P. Cooke. Court Reporter/Transcriber: Kathy French, 530-913-9213. Transcript may be viewed at the court public terminal or purchased through the Court Reporter/Transcriber using the court's "Transcript Order" form available on our website www.nvd.uscourts.gov before the deadline for Release of Transcript Restriction. After that date it may be	

#	Date	Proceeding Text	Source
		obtained through PACER Redaction Request due 7/1/2013. Redacted Transcript Deadline set for 7/11/2013. Release of Transcript Restriction set for 9/8/2013. (KF) (Entered: 06/10/2013)	
128	06/14/2013	PROPOSED Discovery Plan/Scheduling Order filed by Plaintiff Unwired Planet, LLC Amended [Joint Proposed] Scheduling Order. (Rounds, Michael) (Entered: 06/14/2013)	
129	06/17/2013	SCHEDULING ORDER re 128 Amended Proposed Discovery Plan/Scheduling Order. Signed by Magistrate Judge Valerie P. Cooke on 6/17/13. (Copies have been distributed pursuant to the NEF - JC) (Entered: 06/17/2013)	
130	06/28/2013	AMENDED COMPLAINT with Jury Demand against All Defendants, filed by Unwired Planet, LLC. No changes to parties. Proof of service due by 10/26/2013. (Rounds, Michael) (Entered: 06/28/2013)	
131	07/01/2013	MINUTE ORDER IN CHAMBERS of the Honorable Magistrate Judge Valerie P. Cooke, on 7/1/2013. By Deputy Clerk: LGM. Out-of-town and out-of-state counsel shall be allowed to appear telephonically for the case management conference set before this Court on Thursday, July 11, 2013 at 10:00 AM and shall dial 877-336-1829 at least five (5) minutes prior to the hearing to be properly connected into the courtroom. The Access Code is 2809752 and the Security Code is 125050711. Counsel shall file a joint or separate case management report by no later than the close of business on Monday, July 8, 2013. IT IS SO ORDERED. (no image attached) (Copies have been distributed pursuant to the NEF - LGM) (Entered: 07/01/2013)	
132	07/08/2013	STATEMENT UNWIRED PLANET'S CASE MANAGEMENT STATEMENT by Counter Defendant Unwired Planet, LLC, Plaintiff Unwired Planet, LLC. (Attachments: # 1 Exhibit A, # 2 Exhibit B, # 3 Exhibit C, # 4 Exhibit D, # 5 Exhibit E)(Rounds, Michael) (Entered: 07/08/2013)	
133	07/08/2013	STATUS REPORT re July 2013 Case Management Conference by Counter Claimant Apple, Inc., Defendant Apple, Inc.. (Attachments: # 1 Exhibit A, # 2 Exhibit B, # 3 Exhibit C, # 4 Exhibit D, # 5 Exhibit E, # 6 Exhibit F, # 7 Exhibit G, # 8 Exhibit H)(Fountain, Jonathan) (Entered: 07/08/2013)	
134	07/11/2013	MINUTES OF PROCEEDINGS - Case Management Conference held on 7/11/2013 before Magistrate Judge Valerie P. Cooke. Crtrm Administrator: LGM; Pla Counsel: Michael Rounds, John Campbell, and (By telephone) Pierre Hubert; Def Counsel: Ernest Hsin, Jonathan Fountain, and (By telephone) Brooke Wallace; Court Reporter/FTR #: 10:00:55 - 10:35:32; Time of Hearing: 10:00 a.m.; Courtroom: 1; The Court finds it is not convinced and that it is premature to order Apple to limit the number of asserted prior art references at this time. IT IS SO ORDERED. (Copies have been distributed pursuant to the NEF - LGM) (Entered: 07/11/2013)	
135	07/11/2013	STIPULATION FOR EXTENSION OF TIME (Second Request) Extending the Time for Apple to Serve its Local Rule 16.1-8(b)-(e) Disclosures by Counter Claimant Apple, Inc., Defendant Apple, Inc.. (Fountain, Jonathan) (Entered: 07/11/2013)	
136	07/15/2013	ORDER ON STIPULATION re 135 Stipulation Extending Time for Apple to Serve Disclosures. Signed by Magistrate Judge Valerie P. Cooke on 7/15/13. (Copies have been distributed pursuant to the NEF - JC) (Entered: 07/15/2013)	
137	07/15/2013	ANSWER to 130 Amended Complaint with Jury Demand , COUNTERCLAIM against Unwired Planet, LLC filed by Apple, Inc.. (Attachments: # 1 Exhibit 1, # 2 Exhibit 2, # 3 Exhibit 3, # 4 Exhibit 4, # 5 Exhibit 5, # 6 Exhibit 6, # 7 Exhibit 7, # 8 Exhibit 8, #	

#	Date	Proceeding Text	Source
		9 Exhibit 9, # 10 Exhibit 10, # 11 Exhibit 11, # 12 Exhibit 12, # 13 Exhibit 13, # 14 Exhibit 14, # 15 Exhibit 15, # 16 Exhibit 16, # 17 Exhibit 17, # 18 Exhibit 18)(Fountain, Jonathan) (Entered: 07/15/2013)	
138	07/16/2013	NOTICE PURSUANT TO LOCAL RULE IB 2-2: In accordance with 28 USC § 636(c) and FRCP 73, the parties in this action are provided with a link to the "AO 85 Notice of Availability, Consent, and Order of Reference - Exercise of Jurisdiction by a U.S. Magistrate Judge" form on the Court's website - www.nvd.uscourts.gov. Consent forms should NOT be electronically filed. Upon consent of all parties, counsel are advised to manually file the form with the Clerk's Office. A copy of form AO 85 has been mailed to parties not receiving electronic service. (no image attached) (DRM) (Entered: 07/16/2013)	
139	07/18/2013	TRANSCRIPT of Proceedings, 134 Miscellaneous Hearing, held on 7/11/13, before Magistrate Judge Valerie P. Cooke. Court Reporter/Transcriber: Donna Davidson, 775-329-0132. Transcript may be viewed at the court public terminal or purchased through the Court Reporter/Transcriber using the court's "Transcript Order" form available on our website www.nvd.uscourts.gov before the deadline for Release of Transcript Restriction. After that date it may be obtained through PACER Redaction Request due 8/8/2013. Redacted Transcript Deadline set for 8/18/2013. Release of Transcript Restriction set for 10/16/2013. (DD) (Entered: 07/18/2013)	
140	07/22/2013	VERIFIED PETITION for Permission to Practice Pro Hac Vice by Mitchell Sibley and DESIGNATION of Local Counsel Michael D. Rounds (Filing fee $ 200 receipt number 0978-2896079) filed by Counter Defendants Unwired Planet, LLC, Unwired Planet, LLC, Plaintiff Unwired Planet, LLC . Motion ripe 7/22/2013. (Rounds, Michael) (Entered: 07/22/2013)	
141	08/05/2013	STIPULATION and Proposed Order Vacating the August 9, 2013 Case Management Conference by Counter Claimants Apple, Inc., Apple, Inc., Defendant Apple, Inc.. (Fountain, Jonathan) (Entered: 08/05/2013)	
142	08/06/2013	ORDER ON STIPULATION re 141 Stipulation Vacating the August 9, 2013 Case Management Conference. Signed by Magistrate Judge Valerie P. Cooke on 8/6/13. (Copies have been distributed pursuant to the NEF - JC) (Entered: 08/06/2013)	
143	08/06/2013	VERIFIED PETITION for Permission to Practice Pro Hac Vice by Nicholas M. Mathews and DESIGNATION of Local Counsel Michael D. Rounds (Filing fee $ 200 receipt number 0978-2914703) filed by Counter Defendants Unwired Planet, LLC, Unwired Planet, LLC, Plaintiff Unwired Planet, LLC . Motion ripe 8/6/2013. (Rounds, Michael) (Entered: 08/06/2013)	
144	08/08/2013	MINUTE ORDER IN CHAMBERS of the Honorable Magistrate Judge Valerie P. Cooke, on 8/8/2013. By Deputy Clerk: LGM. Monthly Case Management Conferences are set as follows: 9/6/2013 at 02:00 PM, 10/4/2013 at 02:00 PM, 11/4/2013 at 02:00 PM, and 12/5/2013 at 09:00 AM all in Reno Courtroom 1 before Magistrate Judge Valerie P. Cooke. Counsel shall file a joint or separate case management report by no later than the close of business three (3) court days prior to each conference. IT IS SO ORDERED. (no image attached) (Copies have been distributed pursuant to the NEF - LGM) (Entered: 08/08/2013)	
145	08/08/2013	ANSWER to 137 Answer to Amended Complaint,,, Counterclaim,, filed by Unwired Planet, LLC.(Rounds, Michael) (Entered: 08/08/2013)	
146	08/09/2013	NOTICE PURSUANT TO LOCAL RULE IB 2-2: In accordance	

#	Date	Proceeding Text	Source
		with 28 USC § 636(c) and FRCP 73, the parties in this action are provided with a link to the "AO 85 Notice of Availability, Consent, and Order of Reference - Exercise of Jurisdiction by a U.S. Magistrate Judge" form on the Court's website - www.nvd.uscourts.gov. Consent forms should NOT be electronically filed. Upon consent of all parties, counsel are advised to manually file the form with the Clerk's Office. A copy of form AO 85 has been mailed to parties not receiving electronic service. (no image attached) (JC) (Entered: 08/09/2013)	
147	08/15/2013	STIPULATION and Proposed Order for the Withdrawal of Attorney Etai Lahav and for the Removal of Attorney Etai Lahav from the CM/ECF Service List by Counter Claimants Apple, Inc., Apple, Inc., Defendant Apple, Inc.. (Fountain, Jonathan) (Entered: 08/15/2013)	
148	08/19/2013	ORDER ON 147 STIPULATION for Withdrawal of Attorney Etai Lahav as counsel for Apple Inc., and removal from CM/ECF service list. Signed by Magistrate Judge Valerie P. Cooke on 8/19/2013. (Copies have been distributed pursuant to the NEF - DRM) (Entered: 08/19/2013)	
149	08/19/2013	NOTICE OF ORDER by Unwired Planet, LLC. (Attachments: # 1 Exhibit)(Rounds, Michael) (Entered: 08/19/2013)	
150	08/30/2013	MINUTE ORDER IN CHAMBERS of the Honorable Magistrate Judge Valerie P. Cooke, on 8/30/2013. By Deputy Clerk: LGM. Out-of-town and out-of-state counsel shall be allowed to appear telephonically for the case management conference set before this Court on Friday, September 6, 2013 at 2:00 PM and shall dial 877-336-1829 at least five (5) minutes prior to the hearing to be properly connected into the courtroom. The Access Code is 2809752 and the Security Code is 125050906. Counsel shall file a joint or separate case management report by no later than the close of business on Tuesday, September 3, 2013. IT IS SO ORDERED. (no image attached) (Copies have been distributed pursuant to the NEF - LGM) (Entered: 08/30/2013)	
151	08/30/2013	ORDER granting 37 Motion to Transfer. Clerk shall transfer case to Northern District of CA, close case administratively, and terminate all other pending motions in this district. Signed by Chief Judge Robert C. Jones on 8/30/13. (Copies have been distributed pursuant to the NEF - JC) (Entered: 08/30/2013)	
152	09/06/2013		
153	09/06/2013	ADR SCHEDULING ORDER: Case Management Statement due by 11/26/2013. Case Management Conference set for 12/3/2013 01:30 PM in Courtroom 4, 3rd Floor, Oakland. (Attachments: # 1 Standing Order)(cjl, COURT STAFF) (Filed on 9/6/2013) (Entered: 09/11/2013)	
154	09/11/2013	CLERKS NOTICE Acknowledging Receipt of Case Transfer in from U.S.D.C. Nevada. Their Case No. 3:12-CV-505-RCJ-VPC. (Attachments: # 1 Certificate/Proof of Service) (cjl, COURT STAFF) (Filed on 9/11/2013) (Entered: 09/11/2013)	
155	09/12/2013	REPORT on the filing of an action regarding Patent (cc: form mailed to register). (cjl, COURT STAFF) (Filed on 9/12/2013) (Entered: 09/12/2013)	
156	09/30/2013	Order by Magistrate Judge Kandis A. Westmore granting 140 Motion for Pro Hac Vice.(kawlc2, COURT STAFF) (Filed on 9/30/2013) (Entered: 09/30/2013)	
157	09/30/2013	Order by Magistrate Judge Kandis A. Westmore granting 143 Motion for Pro Hac Vice.(kawlc2, COURT STAFF) (Filed on 9/30/2013) (Entered: 09/30/2013)	
158	09/30/2013	Mail sent to Attorney Kevin L. Burgess returned as undeliverable re 154 Clerks Notice. (cjl, COURT STAFF) (Filed on 9/30/2013)	

#	Date	Proceeding Text	Source
		(Entered: 10/01/2013)	
159	10/10/2013	CLERK'S NOTICE Re: Consent or Declination: Plaintiffs/Defendants shall file a consent or declination to proceed before a magistrate judge within 14 days of this notice. (sisS, COURT STAFF) (Filed on 10/10/2013) (Entered: 10/10/2013)	
160	10/14/2013	CONSENT/DECLINATION to Proceed Before a US Magistrate Judge by Unwired Planet, LLC.. (Attachments: # 1 Exhibit A)(Hubert, Pierre) (Filed on 10/14/2013) (Entered: 10/14/2013)	
161	10/15/2013	CONSENT/DECLINATION to Proceed Before a US Magistrate Judge by Apple Inc.. (Hsin, Yu-Chieh) (Filed on 10/15/2013) (Entered: 10/15/2013)	
162	10/16/2013	CLERK'S NOTICE of Impending Reassignment to U.S. District Judge (sisS, COURT STAFF) (Filed on 10/16/2013) (Entered: 10/16/2013)	
163	10/16/2013	ORDER REASSIGNING CASE. Case reassigned to Judge Hon. Yvonne Gonzalez Rogers for all further proceedings. Magistrate Judge Kandis A. Westmore no longer assigned to the case. Signed by the Executive Committee on October 16, 2013. (cjlS, COURT STAFF) (Filed on 10/16/2013) (Entered: 10/16/2013)	
164	10/30/2013	ERRATA re 63 Reply Memorandum by Unwired Planet, LLC. (Attachments: # 1 Corrected Image for Dkt #63)(Campbell, John) (Filed on 10/30/2013) (Entered: 10/30/2013)	
165	11/22/2013	CLERKS NOTICE SETTING CASE MANAGEMENT CONFERENCE. Case Management Statement due by 12/30/2013. Case Management Conference set for Monday, 1/6/2014 02:00 PM before Judge Yvonne Gonzalez Rogers in Courtroom 5, 2nd Floor, Oakland. (Attachments: # 1 Standing Order) (fs, COURT STAFF) (Filed on 11/22/2013) (Entered: 11/22/2013)	
166	11/24/2013	CERTIFICATE OF SERVICE by Unwired Planet, LLC re 165 Clerks Notice, and Standing Order in Civil Cases (Campbell, John) (Filed on 11/24/2013) (Entered: 11/24/2013)	
167	12/17/2013	ADR Clerks Notice re: Non-Compliance with Court Order. (tjs, COURT STAFF) (Filed on 12/17/2013) (Entered: 12/17/2013)	
168	12/18/2013	MOTION for leave to appear in Pro Hac Vice for John B. Campbell (Filing fee $ 305, receipt number 0971-8241900.) filed by Unwired Planet, LLC. (Campbell, John) (Filed on 12/18/2013) Modified on 12/19/2013 (jlmS, COURT STAFF). (Entered: 12/18/2013)	
169	12/18/2013	STIPULATION and Proposed Order selecting Private ADR (Campbell, John) (Filed on 12/18/2013) Modified on 12/19/2013 (cpS, COURT STAFF). (Entered: 12/18/2013)	
170	12/18/2013	ADR Certification (ADR L.R. 3-5 b) of discussion of ADR options (Campbell, John) (Filed on 12/18/2013) (Entered: 12/18/2013)	
171	12/19/2013	ORDER by Judge Yvonne Gonzalez Rogers DENYING without prejudice 168 Motion for Pro Hac Vice (fs, COURT STAFF) (Filed on 12/19/2013) (Entered: 12/20/2013)	
172	12/26/2013	MOTION for leave to appear in Pro Hac Vice (Filing fee $ 305, receipt number 0971-8241900.) Filing fee previously paid on 12/18/13 filed by Unwired Planet, LLC. (Campbell, John) (Filed on 12/26/2013) (Entered: 12/26/2013)	
173	12/26/2013	NOTICE of Appearance by Courtland Lewis Reichman (Reichman, Courtland) (Filed on 12/26/2013) (Entered: 12/26/2013)	
174	12/26/2013	ADR Certification (ADR L.R. 3-5 b) of discussion of ADR options (Kogan, Christina) (Filed on 12/26/2013) (Entered: 12/26/2013)	
175	12/30/2013	Certificate of Interested Entities by Unwired Planet, LLC (Campbell, John) (Filed on 12/30/2013) (Entered: 12/30/2013)	

#	Date	Proceeding Text	Source
176	12/30/2013	JOINT CASE MANAGEMENT STATEMENT filed by Unwired Planet, LLC, Apple Inc. (Attachments: # 1 Exhibit A, # 2 Exhibit B, # 3 Exhibit C)(Campbell, John) (Filed on 12/30/2013) Modified on 12/31/2013 (kcS, COURT STAFF). (Entered: 12/30/2013)	
177	12/31/2013	Certificate of Interested Entities by Unwired Planet, LLC identifying Corporate Parent Unwired Planet IP Holdings, Inc. for Unwired Planet, LLC. (Campbell, John) (Filed on 12/31/2013) (Entered: 12/31/2013)	
178	01/03/2014	ORDER by Judge Yvonne Gonzalez Rogers granting 172 Motion for Pro Hac Vice as to John B. Campbell representing Plaintiff. (fs, COURT STAFF) (Filed on 1/3/2014) (Entered: 01/03/2014)	
181	01/06/2014	Minute Entry: Further Case Management Conference held on 1/6/2014 before Yvonne Gonzalez Rogers (Date Filed: 1/6/2014). Case Management Conference set for Monday, 1/13/2014 02:00 PM in Courtroom 5, 2nd Floor, Oakland. If counsel submit agreed upon proposed schedule by Friday 1/10/2014 then the CMC date of 1/13/2014 will be vacated.(Recording #FTR: 2:54pm-3:37pm.) (fs, COURT STAFF) (Date Filed: 1/6/2014) (Entered: 01/10/2014)	
179	01/07/2014	TRANSCRIPT ORDER by Apple Inc for Court Reporter FTR - Oakland. (Kogan, Christina) (Filed on 1/7/2014) (Entered: 01/07/2014)	
180	01/07/2014	TRANSCRIPT ORDER by Unwired Planet, LLC for Court Reporter FTR - Oakland. (Campbell, John) (Filed on 1/7/2014) (Entered: 01/07/2014)	
182	01/10/2014	Joint Proposed Scheduling Order by Unwired Planet, LLC, Apple Inc. (Campbell, John) (Filed on 1/10/2014) Modified on 1/13/2014 (cpS, COURT STAFF). (Entered: 01/10/2014)	
183	01/10/2014	MOTION for leave to appear in Pro Hac Vice (Filing fee $ 305, receipt number 0971-8288025.) filed by Unwired Planet, LLC. (Stevenson, Theodore) (Filed on 1/10/2014) (Entered: 01/10/2014)	
184	01/13/2014	CLERKS NOTICE VACATING THE MONDAY, JANUARY 13, 2014 AT 2:00PM CASE MANAGEMENT CONFERENCE. (This is a text only docket entry, there is no document associated with this notice.) (fs, COURT STAFF) (Filed on 1/13/2014) (Entered: 01/13/2014)	
185	01/15/2014	JOINT SCHEDULING ORDER re 182 Proposed Order filed by Unwired Planet, LLC, Apple Inc. Claims Construction Hearing set for Wednesday, 5/14/2014 02:00 PM. Tutorial Hearing set for Wednesday, 5/7/2014 02:00 PM. Signed by Judge Yvonne Gonzalez Rogers on 1/15/2014. (fs, COURT STAFF) (Filed on 1/15/2014) (Entered: 01/16/2014)	
186	01/21/2014	ORDER DENYING PLAINTIFF'S ORAL MOTION FOR RECONSIDERATION OF PROTECTIVE ORDER re 118 Protective Order. Signed by Judge Yvonne Gonzalez Rogers on 1/21/2014. (fs, COURT STAFF) (Filed on 1/21/2014) (Entered: 01/21/2014)	
187	01/27/2014	ORDER by Judge Yvonne Gonzalez Rogers granting 183 Motion for Pro Hac Vice as to Theodore Stevenson III representing Plaintiff. (fs, COURT STAFF) (Filed on 1/27/2014) (Entered: 01/27/2014)	
188	01/31/2014	Transcript of Electronically Recorded Proceedings (FTR) held on January 6, 2014, before Judge Yvonne Gonzalez Rogers. Transcriber Raynee H. Mercado, Telephone number 510-502-6175, cacsr8258@gmail.com, raynee_mercado@cand.uscourts.gov. Tape Number: FTR:2:54pm-3:37pm. Per General Order No. 59 and Judicial Conference policy, this transcript may be viewed only at the Clerks Office public terminal or may be purchased through the	

#	Date	Proceeding Text	Source
		Transcriber until the deadline for the Release of Transcript Restriction.After that date it may be obtained through PACER. Any Notice of Intent to Request Redaction, if required, is due no later than 5 business days from date of this filing. Release of Transcript Restriction set for 5/1/2014. (Related document(s) 179 , 180) (rhm) (Filed on 1/31/2014) Modified on 2/3/2014 (cpS, COURT STAFF). (Entered: 01/31/2014)	
189	02/07/2014	MOTION for leave to appear in Pro Hac Vice (Filing fee $ 305, receipt number 0971-8359930.) filed by Unwired Planet, LLC. (Burgess, Kevin) (Filed on 2/7/2014) (Entered: 02/07/2014)	
190	02/12/2014	ORDER by Judge Yvonne Gonzalez Rogers granting 189 Motion for Pro Hac Vice as to Kevin Burgess representing plaintiff. (fs, COURT STAFF) (Filed on 2/12/2014) (Entered: 02/12/2014)	
191	03/03/2014	MOTION for leave to appear in Pro Hac Vice (Filing fee $ 305, receipt number 0971-8418757.) filed by Unwired Planet, LLC. (Sibley, Mitchell) (Filed on 3/3/2014) (Entered: 03/03/2014)	
192	03/03/2014	MOTION for leave to appear in Pro Hac Vice (Filing fee $ 305, receipt number 0971-8418817.) filed by Unwired Planet, LLC. (Apreotesi, Mario) (Filed on 3/3/2014) (Entered: 03/03/2014)	
193	03/03/2014	MOTION for leave to appear in Pro Hac Vice (Filing fee $ 305, receipt number 0971-8418844.) filed by Unwired Planet, LLC. (Kneupper, Kevin) (Filed on 3/3/2014) (Entered: 03/03/2014)	
194	03/03/2014	MOTION for leave to appear in Pro Hac Vice (Filing fee $ 305, receipt number 0971-8418879.) filed by Unwired Planet, LLC. (Quigley, James) (Filed on 3/3/2014) (Entered: 03/03/2014)	
195	03/07/2014	ORDER by Judge Yvonne Gonzalez Rogers granting 191 Motion for Pro Hac Vice as to Mitchell Reed Sibley representing Plaintiff. (fs, COURT STAFF) (Filed on 3/7/2014) (Entered: 03/07/2014)	
196	03/07/2014	ORDER by Judge Yvonne Gonzalez Rogers granting 192 Motion for Pro Hac Vice as to Mario Aurel Apreotesi representing Plaintiff. (fs, COURT STAFF) (Filed on 3/7/2014) (Entered: 03/07/2014)	
197	03/07/2014	ORDER by Judge Yvonne Gonzalez Rogers granting 193 Motion for Pro Hac Vice as to Kevin Kneupper representing Plaintiff. (fs, COURT STAFF) (Filed on 3/7/2014) (Entered: 03/07/2014)	
198	03/07/2014	ORDER by Judge Yvonne Gonzalez Rogers granting 194 Motion for Pro Hac Vice as to James Elroy Quigley representing Plaintiff. (fs, COURT STAFF) (Filed on 3/7/2014) (Entered: 03/07/2014)	
199	03/10/2014	JOINT CLAIM CONSTRUCTION STATEMENT filed by Unwired Planet, LLC, Apple Inc. (Attachments: # 1 Exhibit A, # 2 Exhibit B, # 3 Exhibit C, # 4 Exhibit D, # 5 Exhibit E - Part 1, # 6 Exhibit E - Part 2, # 7 Exhibit F, # 8 Exhibit G)(Reichman, Courtland) (Filed on 3/10/2014) Modified on 3/11/2014 (cpS, COURT STAFF). (Entered: 03/10/2014)	
200	03/24/2014	NOTICE of Change In Counsel by Brooke Myers Wallace (Wallace, Brooke) (Filed on 3/24/2014) (Entered: 03/24/2014)	
201	03/24/2014	MOTION for Leave to File Excess Pages for the Parties' Opening Claim Construction Briefs filed by Apple Inc. (Attachments: # 1 Affidavit Hsin Declaration ISO Apple's Unopposed Administrative Motion for Enlargement of the Page Limit for the Parties' Opening Claim Construction Briefs to 35 Pages, # 2 Proposed Order [Proposed] Order ISO Apple's Unopposed Administrative Motion for Enlargement of the Page Limit for the Parties' Opening Claim Construction Briefs to 35 Pages)(Wallace, Brooke) (Filed on 3/24/2014) (Entered: 03/24/2014)	
202	03/26/2014	ORDER by Judge Yvonne Gonzalez Rogers granting 201 Motion for Leave to File Excess Pages (fs, COURT STAFF) (Filed on 3/26/2014) (Entered: 03/26/2014)	
203	04/07/2014	CLAIM CONSTRUCTION STATEMENT Opening Claim	

#	Date	Proceeding Text	Source
		Construction Brief per L.R. 4-5(a) filed by Unwired Planet, LLC. (Attachments: # 1 Exhibit 1, # 2 Exhibit 2, # 3 Exhibit 3, # 4 Exhibit 4)(Campbell, John) (Filed on 4/7/2014) (Entered: 04/07/2014)	
204	04/07/2014	CLAIM CONSTRUCTION STATEMENT Opening Claim Construction Brief per L.R. 4-5(a) filed by Apple Inc. (Wallace, Brooke) (Filed on 4/7/2014) (Entered: 04/07/2014)	
205	04/07/2014	Declaration of Y. Ernest Hsin in Support of 204 Claim Construction Statement Opening Claim Construction Brief per L.R. 4-5(a) filed byApple Inc. (Attachments: # 1 Exhibit 1-4, # 2 Exhibit 5-7, # 3 Exhibit 8, # 4 Exhibit 9-11, # 5 Exhibit 12-15, # 6 Exhibit 16-19, # 7 Exhibit 20)(Related document(s) 204) (Wallace, Brooke) (Filed on 4/7/2014) (Entered: 04/07/2014)	
206	04/07/2014	Declaration of Peter Rysavy in Support of 204 Claim Construction Statement Opening Claim Construction Brief per L.R. 4-5(a) filed byApple Inc. (Attachments: # 1 Exhibit 1)(Related document(s) 204) (Wallace, Brooke) (Filed on 4/7/2014) (Entered: 04/07/2014)	
207	04/15/2014	MOTION for leave to appear in Pro Hac Vice (Filing fee $ 305, receipt number 0971-8535621.) filed by Apple Inc. (Kalogeras, Steven) (Filed on 4/15/2014) (Entered: 04/15/2014)	
	04/17/2014	CASE REASSIGNED to the Honorable Vince Chhabria, United States District Judge. All parties must review the reassignment order posted at http://cand.uscourts.gov/orders/vc-order.pdf and comply with its requirements, including submitting a case management statement. This is a text only docket entry. The reassignment order associated with this notice may be viewed at http://cand.uscourts.gov/orders/vc-order.pdf Case Management Statement due by 5/1/2014. Signed by Executive Committee on 4/17/14. (kc, COURT STAFF) (Filed on 4/17/2014) (Entered: 04/17/2014)	
208	04/25/2014	Order by Hon. Vince Chhabria granting 207 Motion for Pro Hac Vice- Kalogeras.(knm, COURT STAFF) (Filed on 4/25/2014) (Entered: 04/25/2014)	
209	04/28/2014	CLAIM CONSTRUCTION STATEMENT - RESPONSIVE CLAIM CONSTRUCTION BRIEF filed by Unwired Planet, LLC. (Attachments: # 1 Declaration of John Campbell Jr., # 2 Exhibit 1, # 3 Exhibit 2, # 4 Exhibit 3, # 5 Exhibit 4, # 6 Exhibit 5, # 7 Exhibit 6, # 8 Exhibit 7, # 9 Exhibit 8, # 10 Declaration of Mark R. Jones, Ph.D, # 11 Exhibit A, # 12 Exhibit B, # 13 Exhibit C, # 14 Exhibit D)(Campbell, John) (Filed on 4/28/2014) (Entered: 04/28/2014)	
210	04/28/2014	Brief re 203 Claim Construction Statement filed byApple Inc. (Related document(s) 203) (Kogan, Christina) (Filed on 4/28/2014) (Entered: 04/28/2014)	
211	05/01/2014	JOINT CASE MANAGEMENT STATEMENT filed by Unwired Planet, LLC. (Campbell, John) (Filed on 5/1/2014) Modified on 5/2/2014 (farS, COURT STAFF). (Entered: 05/01/2014)	
212	05/09/2014	Order by Hon. Vince Chhabria granting 169 Stipulation selecting Private ADR.(knm, COURT STAFF) (Filed on 5/9/2014) (Entered: 05/09/2014)	
213	05/09/2014	CASE MANAGEMENT SCHEDULING ORDER: Pretrial Conference set for 2/9/2015 10:00 AM in Courtroom 4, 17th Floor, San Francisco before Hon. Vince Chhabria. Jury Trial set for 2/23/2015 through 3/6/2015 08:30 AM in Courtroom 4, 17th Floor, San Francisco before Hon. Vince Chhabria. Jury Selection set for 2/23/2015 08:30 AM in Courtroom 4, 17th Floor, San Francisco before Hon. Vince Chhabria. Markman hearing set for 6/24/2014 10:30 AM. Tutorial Hearing set for 6/24/2014 10:30 AM in Courtroom 4, 17th Floor, San Francisco. Signed by Judge Vince Chhabria on 5/8/2014. (knm, COURT STAFF) (Filed on 5/9/2014) (Entered: 05/09/2014)	

#	Date	Proceeding Text	Source
214	05/23/2014	MOTION for leave to appear in Pro Hac Vice (Filing fee $ 305, receipt number 25FSIBL3.) Filing fee previously paid on 5/23/14 filed by Unwired Planet, LLC. (Fornarotto, Lauren) (Filed on 5/23/2014) (Entered: 05/23/2014)	
215	06/02/2014	Order by Hon. Vince Chhabria granting 214 Motion for Pro Hac Vice- Fornarotto.(knm, COURT STAFF) (Filed on 6/2/2014) (Entered: 06/02/2014)	
216	06/10/2014	CLERKS NOTICE RESCHEDULING THE TUTORIAL AND CLAIM CONSTRUCTION HEARINGS: Claims Construction Hearing set for 8/5/2014 09:00 AM. Tutorial Hearing set for 8/5/2014 09:00 AM in Courtroom 4, 17th Floor, San Francisco. This is a text only docket entry, there is no document associated with this notice. (knm, COURT STAFF) (Filed on 6/10/2014) (Entered: 06/10/2014)	
217	06/10/2014	MOTION for leave to appear in Pro Hac Vice of Leah B. Buratti (Filing fee $ 305, receipt number 0971-8682365.) filed by Unwired Planet, LLC. (Buratti, Leah) (Filed on 6/10/2014) Modified on 6/16/2014 (farS, COURT STAFF). (Entered: 06/10/2014)	
218	06/13/2014	Order by Hon. Vince Chhabria granting 217 Motion for Pro Hac Vice- Burrati.(knm, COURT STAFF) (Filed on 6/13/2014) (Entered: 06/13/2014)	
219	07/28/2014	JOINT NOTICE OF AGREED CLAIM CONSTRUCTION by Unwired Planet, LLC (Campbell, John) (Filed on 7/28/2014) Modified on 7/29/2014 (farS, COURT STAFF). (Entered: 07/28/2014)	
220	07/29/2014	CLERKS NOTICE RESCHEDULING THE CLAIM CONSTRUCTION: Claims Construction Hearing set for 8/11/2014 09:00 AM. This is a text only docket entry, there is no document associated with this notice. (knm, COURT STAFF) (Filed on 7/29/2014) (Entered: 07/29/2014)	
221	07/29/2014	CLERKS NOTICE CORRECTING THE LOCATION OF THE TUTORIAL: Tutorial Hearing set for 8/5/2014 09:00 AM in Courtroom 10, 19th Floor, San Francisco. This is a text only docket entry, there is no document associated with this notice. (knm, COURT STAFF) (Filed on 7/29/2014) (Entered: 07/29/2014)	
222	07/29/2014	STIPULATION WITH PROPOSED ORDER Regarding Use of Equipment at Technology Tutorial and Claim Construction Hearings filed by Apple Inc. (Wallace, Brooke) (Filed on 7/29/2014) (Entered: 07/29/2014)	
223	07/29/2014	Joint MOTION for Leave to File Certain Amended Contentions filed by Apple Inc. (Attachments: # 1 Exhibit A, # 2 Exhibit B, # 3 Proposed Order)(Wallace, Brooke) (Filed on 7/29/2014) (Entered: 07/29/2014)	
224	07/30/2014	Order by Hon. Vince Chhabria granting 222 Stipulation Regarding Use of Equipment.(knm, COURT STAFF) (Filed on 7/30/2014) (Entered: 07/30/2014)	
225	07/30/2014	Order by Hon. Vince Chhabria granting 223 Motion for Leave to File Certain Amended Contentions.(knm, COURT STAFF) (Filed on 7/30/2014) (Entered: 07/30/2014)	
226	07/31/2014	NOTICE of Appearance by Jennifer Prieb Estremera (Estremera, Jennifer) (Filed on 7/31/2014) (Entered: 07/31/2014)	
227	08/01/2014	NOTICE by Unwired Planet, LLC of Withdrawal of Attorney for Plaintiff (Campbell, John) (Filed on 8/1/2014) (Entered: 08/01/2014)	
228	08/01/2014	NOTICE by Unwired Planet, LLC of Withdrawal of Attorney for Plaintiff (Campbell, John) (Filed on 8/1/2014) (Entered: 08/01/2014)	
229	08/06/2014	Minute Entry: Tutorial Hearing held on 8/5/2014 before The	

#	Date	Proceeding Text	Source
		Honorable Vince Chhabria (Date Filed: 8/6/2014). FTR Recording: 9:01-10:27, 10:48-11:41, 11:47-12:36. (knm, COURT STAFF) (Date Filed: 8/6/2014) Modified on 10/28/2016 (knm, COURT STAFF). Modified on 11/4/2016: Matter transcribed by Leo Mankiewicz. (rjdS, COURT STAFF). (Entered: 08/06/2014)	
230	08/12/2014	Minute Entry: Claims Construction held on 8/11/2014 before The Honorable Vince Chhabria (Date Filed: 8/12/2014). (Court Reporter Lydia Zinn.) (knm, COURT STAFF) (Date Filed: 8/12/2014) (Entered: 08/12/2014)	
231	08/29/2014	Administrative Motion to File Under Seal filed by Unwired Planet, LLC. (Attachments: # 1 Declaration of Mario A. Apreotesi, # 2 Proposed Order, # 3 Redacted Version of Motion, # 4 Unredacted Version of Motion, # 5 Redacted Version of Exhibit A, # 6 Unredacted Version of Exhibit A, # 7 Redacted Version of Exhibit B, # 8 Unredacted Version of Exhibit B, # 9 Redacted Version of Exhibit C, # 10 Unredacted Version of Exhibit C, # 11 Redacted Version of Exhibit D, # 12 Unredacted Version of Exhibit D, # 13 Redacted Version of Exhibit E, # 14 Unredacted Version of Exhibit E, # 15 Redacted Version of Exhibit F, # 16 Unredacted Version of Exhibit F, # 17 Redacted Version of Exhibit G, # 18 Unredacted Version of Exhibit G, # 19 Redacted Version of Exhibit H, # 20 Unredacted Version of Exhibit H, # 21 Redacted Version of Exhibit I, # 22 Unredacted Version of Exhibit I)(Apreotesi, Mario) (Filed on 8/29/2014) (Entered: 08/29/2014)	
232	08/29/2014	MOTION to Amend/Correct Infringement Contentions filed by Unwired Planet, LLC. Motion Hearing set for 10/9/2014 10:00 AM in Courtroom 4, 17th Floor, San Francisco before Hon. Vince Chhabria. Responses due by 9/12/2014. Replies due by 9/19/2014. (Attachments: # 1 Declaration of Mario A. Apreotesi, # 2 Proposed Order, # 3 Exhibit A, # 4 Exhibit B, # 5 Exhibit C, # 6 Exhibit D, # 7 Exhibit E, # 8 Exhibit F, # 9 Exhibit G, # 10 Exhibit H, # 11 Exhibit I, # 12 Exhibit J, # 13 Exhibit K, # 14 Exhibit L, # 15 Exhibit M, # 16 Exhibit N)(Campbell, John) (Filed on 8/29/2014) (Entered: 08/29/2014)	
233	09/02/2014	TRANSCRIPT ORDER by Apple Inc for Court Reporter Lydia Zinn. (Wallace, Brooke) (Filed on 9/2/2014) (Entered: 09/02/2014)	
234	09/02/2014	TRANSCRIPT ORDER by Unwired Planet, LLC for Court Reporter Lydia Zinn. (Campbell, John) (Filed on 9/2/2014) (Entered: 09/02/2014)	
235	09/04/2014	NOTICE of Appearance by Priyanka Rajagopalan (Rajagopalan, Priyanka) (Filed on 9/4/2014) (Entered: 09/04/2014)	
236	09/05/2014	Order by Hon. Vince Chhabria granting 231 Administrative Motion to File Under Seal.(knm, COURT STAFF) (Filed on 9/5/2014) (Entered: 09/05/2014)	
237	09/08/2014	MOTION for leave to appear in Pro Hac Vice of Tracey B. Davies (Filing fee $ 305, receipt number 0971-8902781.) filed by Apple Inc. (Davies, Tracey) (Filed on 9/8/2014) (Entered: 09/08/2014)	
238	09/08/2014	Transcript of Proceedings held on 8/11/2014, before Judge Vince Chhabria. Court Reporter/Transcriber Lydia Zinn, Telephone number (415) 531-6587. Per General Order No. 59 and Judicial Conference policy, this transcript may be viewed only at the Clerks Office public terminal or may be purchased through the Court Reporter/Transcriber until the deadline for the Release of Transcript Restriction.After that date it may be obtained through PACER. Any Notice of Intent to Request Redaction, if required, is due no later than 5 business days from date of this filing. (Re 233 Transcript Order, 234 Transcript Order) Release of Transcript Restriction set for 12/8/2014. (Related documents(s) 233 , 234) (Zinn, Lydia) (Filed on 9/8/2014) (Entered: 09/08/2014)	

#	Date	Proceeding Text	Source
239	09/09/2014	Order by Hon. Vince Chhabria granting 237 Motion for Pro Hac Vice- Davies.(knm, COURT STAFF) (Filed on 9/9/2014) (Entered: 09/09/2014)	
240	09/15/2014	NOTICE of Appearance by Tracey B Davies (Pro Hac Vice) (Davies, Tracey) (Filed on 9/15/2014) (Entered: 09/15/2014)	
241	09/15/2014	Administrative Motion to File Under Seal filed by Apple Inc. (Attachments: # 1 Proposed Order, # 2 Declaration of Steve Kalogeras in Support of Admin Motion to File Documents Under Seal, # 3 Exhibit 4 to Kalogeras Declaration In Support of Apple's Opposition, # 4 Exhibit 5 to Kalogeras Declaration In Support of Apple's Opposition, # 5 Exhibit 6 to Kalogeras Declaration In Support of Apple's Opposition, # 6 Exhibit 7 to Kalogeras Declaration In Support of Apple's Opposition)(Hsin, Yu-Chieh) (Filed on 9/15/2014) (Entered: 09/15/2014)	
242	09/15/2014	RESPONSE (re 232 MOTION to Amend/Correct Infringement Contentions) filed byApple Inc. (Attachments: # 1 Proposed Order, # 2 Declaration of Steven Kalogeras in Support of Apple's Opposition to Motion for Leave to Supplement Infringement Contentions, # 3 Exhibit 1 to Kalogeras Declaration, # 4 Exhibit 2 to Kalogeras Declaration, # 5 Exhibit 3 to Kalogeras Declaration, # 6 Exhibit 4-7 to Kalogeras Declaration)(Hsin, Yu-Chieh) (Filed on 9/15/2014) (Entered: 09/15/2014)	
243	09/17/2014	Order by Hon. Vince Chhabria granting 241 Administrative Motion to File Under Seal.(knm, COURT STAFF) (Filed on 9/17/2014) (Entered: 09/17/2014)	
244	09/25/2014	REPLY (re 232 MOTION to Amend/Correct Infringement Contentions) filed byUnwired Planet, LLC. (Attachments: # 1 Declaration Mario A. Apreotesi)(Campbell, John) (Filed on 9/25/2014) (Entered: 09/25/2014)	
245	09/25/2014	Administrative Motion to File Under Seal filed by Unwired Planet, LLC. (Attachments: # 1 Declaration MArio A. Apreotesi, # 2 Proposed Order, # 3 Redacted Version of Reply, # 4 Unredacted Version of Reply)(Apreotesi, Mario) (Filed on 9/25/2014) (Entered: 09/25/2014)	
246	09/30/2014	Letter from Parties Addressing a Discovery Dispute . (Attachments: # 1 Proposed Order of Unwired Planet LLC, # 2 Proposed Order of Apple Inc.)(Reichman, Courtland) (Filed on 9/30/2014) (Entered: 09/30/2014)	
247	10/01/2014	Order by Hon. Vince Chhabria granting 245 Administrative Motion to File Under Seal.(knm, COURT STAFF) (Filed on 10/1/2014) (Entered: 10/01/2014)	
248	10/02/2014	OBJECTIONS to re 244 Reply to Opposition/Response re 232 MOTION to Amend/Correct Infringement Contentions by Apple Inc. (Hsin, Yu-Chieh) (Filed on 10/2/2014) (Entered: 10/02/2014)	
249	10/10/2014	Minute Entry: Motion Hearing held on 10/9/2014 before Vince Chhabria (Date Filed: 10/10/2014) re 232 MOTION to Amend/Correct Infringement Contentions filed by Unwired Planet, LLC. Telephonic Case Management Conference set for 10/14/2014 11:00 AM in Courtroom 4, 17th Floor, San Francisco. Plaintiff counsel are to provide the Court and opposing counsel a conference line to use for the hearing by no later than Monday, October 13, 2014 at noon. (Court Reporter: James Pence.) (knm, COURT STAFF) (Date Filed: 10/10/2014) (Entered: 10/10/2014)	
250	10/13/2014	NOTICE of Appearance by Frederick S. Chung (Chung, Frederick) (Filed on 10/13/2014) (Entered: 10/13/2014)	
251	10/14/2014	Minute Entry: Further Case Management Conference held on 10/14/2014 before The Honorable Vince Chhabria (Date Filed: 10/14/2014). Motion Hearing re New Claims set for 11/20/2014 10:00 AM in Courtroom 4, 17th Floor, San Francisco before Hon.	

#	Date	Proceeding Text	Source
		Vince Chhabria. Discovery due by 11/17/2014. Dispositive Motions due by 3/2/2015. Cross Motions due by 3/16/2015. Final Pretrial Conference set for 5/13/2015 10:00 AM in Courtroom 4, 17th Floor, San Francisco. Jury Selection set for 6/1/2015 08:30 AM in Courtroom 4, 17th Floor, San Francisco before Hon. Vince Chhabria. Jury Trial set for 6/1/2015 through 6/19/2015 08:30 AM in Courtroom 4, 17th Floor, San Francisco before Hon. Vince Chhabria. (Not reported or recorded.) (knm, COURT STAFF) (Date Filed: 10/14/2014) (Entered: 10/15/2014)	
252	10/14/2014	Discovery Order re 246 . Signed by Judge Vince Chhabria on 10/14/2014. (knm, COURT STAFF) (Filed on 10/14/2014) (Entered: 10/15/2014)	
253	10/15/2014	ORDER REFERRING CASE to Magistrate Judge Joseph C. Spero for Discovery purposes. Signed by Judge Vince Chhabria on 10/15/2014. (knm, COURT STAFF) (Filed on 10/15/2014) (Entered: 10/15/2014)	
	10/15/2014	CASE REFERRED to Magistrate Judge Joseph C. Spero for Discovery (ahm, COURT STAFF) (Filed on 10/15/2014) (Entered: 10/15/2014)	
254	10/15/2014	TRANSCRIPT ORDER by Unwired Planet, LLC for Court Reporter James Pence. (Campbell, John) (Filed on 10/15/2014) (Entered: 10/15/2014)	
255	10/16/2014	NOTICE OF REFERENCE AND ORDER RE DISCOVERY PROCEDURES. Signed by Judge Joseph C. Spero on 10/16/14. (klhS, COURT STAFF) (Filed on 10/16/2014) (Entered: 10/16/2014)	
256	10/17/2014	Transcript of Proceedings held on 10/9/2014, before Judge Vince Chhabria. Court Reporter/Transcriber James Pence, Telephone number (619) 587-0173, e-mail: james_pence@cand.uscourts.gov. Per General Order No. 59 and Judicial Conference policy, this transcript may be viewed only at the Clerks Office public terminal or may be purchased through the Court Reporter/Transcriber until the deadline for the Release of Transcript Restriction.After that date it may be obtained through PACER. Any Notice of Intent to Request Redaction, if required, is due no later than 5 business days from date of this filing. (Re 254 Transcript Order) Release of Transcript Restriction set for 1/15/2015. (Related documents(s) 254) (Pence, James) (Filed on 10/17/2014) (Entered: 10/17/2014)	
257	10/20/2014	MOTION for leave to appear in Pro Hac Vice of Christopher J. Mierzejewski (Filing fee $ 305, receipt number 0971-9006768.) filed by Unwired Planet, LLC. (Mierzejewski, Christopher) (Filed on 10/20/2014) Modified on 10/20/2014 (farS, COURT STAFF). (Entered: 10/20/2014)	
258	10/20/2014	STIPULATION WITH Proposed Order re Partial Dismissal Without Prejudice filed by Unwired Planet, LLC. (Attachments: # 1 Proposed Order)(Campbell, John) (Filed on 10/20/2014) (Entered: 10/20/2014)	
259	10/20/2014	Order by Hon. Vince Chhabria granting 258 Stipulation of Partial Dismissal Without Prejudice.(knm, COURT STAFF) (Filed on 10/20/2014) (Entered: 10/20/2014)	
260	10/20/2014	Order by Hon. Vince Chhabria granting 257 Motion for Pro Hac Vice- Mierzejewski.(knm, COURT STAFF) (Filed on 10/20/2014) (Entered: 10/20/2014)	
261	10/23/2014	ORDER re 250 DENYING MOTION TO SUPPLEMENT INFRINGEMENT CONTENTIONS. Signed by Judge Vince Chhabria on 10/23/2014. (knm, COURT STAFF) (Filed on 10/23/2014) (Entered: 10/23/2014)	
262	10/28/2014	Letter from Counsel to Judge Spero re Source Code .	

#	Date	Proceeding Text	Source
		(Attachments: # 1 Declaration of Mario Apreotesi, # 2 Declaration of Lauren Fornarotto, # 3 Exhibit A, # 4 Exhibit B, # 5 Exhibit C, # 6 Declaration of Quincy Lu, # 7 Exhibit A, # 8 Exhibit B, # 9 Exhibit C, # 10 Exhibit D)(Campbell, John) (Filed on 10/28/2014) (Entered: 10/28/2014)	
263	10/28/2014	Administrative Motion to File Under Seal filed by Apple Inc. (Attachments: # 1 Declaration of Quincy Lu in Support of Motion to Seal, # 2 Proposed Order, # 3 Declaration (Redacted Version) Declaration of Quincy Lu in Support of Apple's Opposition to Motion to Compel, # 4 Declaration (Non-Redacted Version) Declaration of Quincy Lu in Support of Apple's Opposition to Motion to Compel, # 5 Exhibit A, # 6 Exhibit B, # 7 Exhibit C, # 8 Exhibit D)(Hsin, Yu-Chieh) (Filed on 10/28/2014) (Entered: 10/28/2014)	
264	10/28/2014	Administrative Motion to File Under Seal filed by Unwired Planet, LLC. (Attachments: # 1 Declaration of Lauren Fornorotto, # 2 Proposed Order)(Campbell, John) (Filed on 10/28/2014) (Entered: 10/28/2014)	
265	10/29/2014	EXHIBITS re 264 Administrative Motion to File Under Seal Exhibit A (Redacted) filed byUnwired Planet, LLC. (Attachments: # 1 Exhibit B (Redacted), # 2 Exhibit C (Redacted), # 3 Exhibit A (Sealed), # 4 Exhibit B (Sealed), # 5 Exhibit C (Sealed))(Related document(s) 264) (Campbell, John) (Filed on 10/29/2014) (Entered: 10/29/2014)	
266	10/31/2014	MOTION for Leave to Add New Accused Products filed by Unwired Planet, LLC. Motion Hearing set for 12/11/2014 10:00 AM in Courtroom 4, 17th Floor, San Francisco before Hon. Vince Chhabria. Responses due by 11/14/2014. Replies due by 11/21/2014. (Attachments: # 1 Declaration of Leah Buratti, # 2 Exhibit A, # 3 Exhibit B, # 4 Exhibit C, # 5 Exhibit D, # 6 Proposed Order)(Campbell, John) (Filed on 10/31/2014) (Entered: 10/31/2014)	
267	10/31/2014	MOTION REGARDING ASSERTED CLAIMS filed by Unwired Planet, LLC. Motion Hearing set for 11/20/2014 10:00 AM in Courtroom 4, 17th Floor, San Francisco before Hon. Vince Chhabria. Responses due by 11/10/2014. Replies due by 11/13/2014. (Attachments: # 1 Proposed Order, # 2 Declaration John Campbell, # 3 Exhibit A)(Campbell, John) (Filed on 10/31/2014) (Entered: 10/31/2014)	
268	11/03/2014	Order To Meet and Confer. Discovery Hearing set for 11/5/2014 09:30 AM in Courtroom G, 15th Floor, San Francisco before Magistrate Judge Joseph C. Spero. Signed by Judge Joseph C. Spero on 11/3/14. (klhS, COURT STAFF) (Filed on 11/3/2014) (Entered: 11/03/2014)	
269	11/03/2014	CLAIM CONSTRUCTION ORDER. Signed by Judge Vince Chhabria on 11/03/2014. (vclc3, COURT STAFF) (Filed on 11/3/2014) (Entered: 11/03/2014)	
270	11/06/2014	Minute Entry: Discovery Hearing held on 11/5/2014 before Joseph C. Spero. Parties to e-file a stipulation by Thursday, 11/6/14. (Recording #Not Reported.) (klhS, COURT STAFF) (Date Filed: 11/6/2014) (Entered: 11/06/2014)	
271	11/06/2014	Administrative Motion to File Under Seal Stipulation of Resolution of Unwired Planet's Motion to Compel [Dkt No. 262] filed by Unwired Planet, LLC. (Attachments: # 1 Declaration of Mario Apreotesi, # 2 Proposed Order, # 3 Redacted Stipulation, # 4 Sealed Stipulation)(Apreotesi, Mario) (Filed on 11/6/2014) (Entered: 11/06/2014)	
272	11/07/2014	Order, signed 11/7/14, by Magistrate Judge Joseph C. Spero granting 271 Administrative Motion to File Under Seal Stipulation	

#	Date	Proceeding Text	Source
		of Resolution of Unwired Planet's Motion to Compel [dkt 262].(klhS, COURT STAFF) (Filed on 11/7/2014) (Entered: 11/07/2014)	
273	11/07/2014	REDACTED STIPULATION AND ORDER RE RESOLUTION OF re 262 Letter (Motion to Compel) filed by Unwired Planet, LLC. Signed by Judge Joseph C. Spero on 11/7/14. (klhS, COURT STAFF) (Filed on 11/7/2014) (Entered: 11/07/2014)	
274	11/07/2014	ORDER by Judge Vince Chhabria granting 267 Motion to file a motion to add claims. (knm, COURT STAFF) (Filed on 11/7/2014) (Entered: 11/07/2014)	
275	11/10/2014	CLERK'S NOTICE VACATING THE MOTION HEARING RE NEW CLAIMS SET FOR NOVEMBER 20, 2014. This is a text only docket entry, there is no document associated with this notice. (knm, COURT STAFF) (Filed on 11/10/2014) (Entered: 11/10/2014)	
276	11/14/2014	Order, signed 11/14/14, by Magistrate Judge Joseph C. Spero granting 263 Apple's Administrative Motion to File Under Seal Lu Declaration, page 4. Exhibits A-D.(klhS, COURT STAFF) (Filed on 11/14/2014) (Entered: 11/14/2014)	
277	11/14/2014	Order, signed 11/14/14, by Magistrate Judge Joseph C. Spero granting 264 Unwired Planet's Administrative Motion to File Under Seal Exhibits A-C.(klhS, COURT STAFF) (Filed on 11/14/2014) (Entered: 11/14/2014)	
278	11/14/2014	RESPONSE (re 266 MOTION for Leave to Add New Accused Products) filed byApple Inc. (Attachments: # 1 Declaration of Wallace ISO Opp to Motion for Leave to Add New Products, # 2 Exhibit to Wallace Declaration)(Wallace, Brooke) (Filed on 11/14/2014) (Entered: 11/14/2014)	
279	11/20/2014	NOTICE by Unwired Planet, LLC re 274 Order on Motion for Miscellaneous Relief Regarding Asserted Claims (Campbell, John) (Filed on 11/20/2014) (Entered: 11/20/2014)	
280	11/21/2014	REPLY (re 266 MOTION for Leave to Add New Accused Products) filed byUnwired Planet, LLC. (Campbell, John) (Filed on 11/21/2014) (Entered: 11/21/2014)	
281	11/24/2014	MOTION for Extension of Time to Complete Discovery filed by Unwired Planet, LLC. (Attachments: # 1 Declaration, # 2 Proposed Order)(Campbell, John) (Filed on 11/24/2014) (Entered: 11/24/2014)	
282	11/25/2014	*** DOCUMENT REMOVED PER COURT ORDER. DOCUMENT TO BE REFILED LATER. *** STIPULATION Joint Stipulation of Representativeness of Defendant Apple Inc.s Source Code filed by Unwired Planet, LLC. (Campbell, John) (Filed on 11/25/2014) Modified on 11/26/2014 (ewn, COURT STAFF). (Entered: 11/25/2014)	
283	11/26/2014	Order by Hon. Vince Chhabria granting 281 Motion for Extension of Time to Complete Discovery to 12/8/2014.(knm, COURT STAFF) (Filed on 11/26/2014) (Entered: 11/26/2014)	
284	11/26/2014	MOTION to Remove Incorrectly Filed Document 282 filed by Unwired Planet, LLC. (Campbell, John) (Filed on 11/26/2014) (Entered: 11/26/2014)	
285	11/26/2014	Order by Hon. Vince Chhabria granting 284 Motion to Remove Incorrectly Filed Document. This is a text only docket entry.(vclc3, COURT STAFF) (Filed on 11/26/2014) (Entered: 11/26/2014)	
286	11/26/2014	STIPULATION OF REPRESENTATIVENESS OF DEFENDANT APPLE INC.S SOURCE CODE filed by Unwired Planet, LLC. (Campbell, John) (Filed on 11/26/2014) (Entered: 11/26/2014)	
287	11/26/2014	Joint Administrative Motion to File Under Seal 286 filed by Unwired Planet, LLC. (Attachments: # 1 Declaration OF BROOKE	

#	Date	Proceeding Text	Source
		WALLACE, # 2 Proposed Order, # 3 REDACTED version of Stipulation, # 4 UNREDACTED version of Stipulation)(Campbell, John) (Filed on 11/26/2014) (Entered: 11/26/2014)	
288	12/04/2014	Order by Hon. Vince Chhabria granting 287 Administrative Motion to File Under Seal.(knmS, COURT STAFF) (Filed on 12/4/2014) (Entered: 12/04/2014)	
289	12/05/2014	CLERK'S NOTICE VACATING THE HEARING RE MOTION FOR LEAVE TO ADD NEW ACCUSED PRODUCTS. The Court will rule on the briefs filed. This is a text only docket entry, there is no document associated with this notice. (knmS, COURT STAFF) (Filed on 12/5/2014) (Entered: 12/05/2014)	
290	12/08/2014	Order by Hon. Vince Chhabria denying 266 Motion for leave to add new products to the patent infringement suit.(knm, COURT STAFF) (Filed on 12/8/2014) (Entered: 12/08/2014)	
291	12/18/2014	MOTION to Amend/Correct 118 Protective Order Unopposed filed by Unwired Planet, LLC. Responses due by 1/2/2015. Replies due by 1/9/2015. (Attachments: # 1 Proposed Order)(Kneupper, Kevin) (Filed on 12/18/2014) (Entered: 12/18/2014)	
292	12/23/2014	Order by Hon. Vince Chhabria granting 291 Motion to Amend/Correct Protective Order.(knm, COURT STAFF) (Filed on 12/23/2014) (Entered: 12/23/2014)	
293	01/09/2015	MOTION for Extension of Time to File Joint Motion to Extend Time to Serve Rebuttal and Reply Damages and Survey Expert Reports filed by Apple Inc. (Attachments: # 1 Declaration ISO Joint Motion to Extend Time to Serve Rebuttal and Reply Damages and Survey Expert Reports, # 2 Proposed Order ISO Joint Motion to Extend Time to Serve Rebuttal and Reply Damages and Survey Expert Reports)(Wallace, Brooke) (Filed on 1/9/2015) (Entered: 01/09/2015)	
294	01/09/2015	Order by Hon. Vince Chhabria granting 293 Motion for Extension of Time to File. This is a text only docket entry. (vclc3, COURT STAFF) (Filed on 1/9/2015) (Entered: 01/09/2015)	
295	01/19/2015	STIPULATION WITH PROPOSED ORDER Regarding Judgment of Non-Infringement of the '491 Patent filed by Unwired Planet, LLC. (Campbell, John) (Filed on 1/19/2015) (Entered: 01/19/2015)	
296	01/21/2015	Order by Hon. Vince Chhabria granting 295 Stipulation Regarding Judgment of Non-Infringement of the '491 Patent.(knm, COURT STAFF) (Filed on 1/21/2015) (Entered: 01/21/2015)	
297	01/22/2015	Administrative Motion to File Under Seal filed by Unwired Planet, LLC. (Attachments: # 1 Declaration, # 2 Proposed Order, # 3 Redacted Motion for Resolution of Printed Source Code Under Protective Order, # 4 Unredacted Motion for Resolution of Printed Source Code Under Protective Order, # 5 Redacted Exhibit 1, # 6 Unredacted Exhibit 1, # 7 Redacted Exhibit 2, # 8 Unredacted Exhibit 2, # 9 Redacted Exhibit 3, # 10 Unredacted Exhibit 3, # 11 Redacted Exhibit 4, # 12 Unredacted Exhibit 4, # 13 Redacted Exhibit 5, # 14 Unredacted Exhibit 5)(Kneupper, Kevin) (Filed on 1/22/2015) (Entered: 01/22/2015)	
298	01/27/2015	MOTION for Resolution of Objections to Printed Source Code Under Protective Order filed by Unwired Planet, LLC. Motion Hearing set for 3/12/2015 10:00 AM in Courtroom 4, 17th Floor, San Francisco before Hon. Vince Chhabria. Responses due by 2/10/2015. Replies due by 2/17/2015. (Attachments: # 1 Declaration of Kevin M. Kneupper, # 2 Exhibit 1, # 3 Exhibit 2, # 4 Exhibit 3, # 5 Exhibit 4, # 6 Exhibit 5, # 7 Proposed Order)(Kneupper, Kevin) (Filed on 1/27/2015) (Entered: 01/27/2015)	
299	02/02/2015	MOTION for leave to appear in Pro Hac Vice (Filing fee $ 305, receipt number 0971-9254084.) filed by Unwired Planet, LLC.	

#	Date	Proceeding Text	Source
		(Cawley, Douglas) (Filed on 2/2/2015) (Entered: 02/02/2015)	
300	02/04/2015	NOTICE of Appearance by Quincy Lu of Counsel for Defendant Apple. Inc. (Lu, Quincy) (Filed on 2/4/2015) (Entered: 02/04/2015)	
301	02/06/2015	Declaration of Christina Kogan in Support of 297 Administrative Motion to File Under Seal filed byApple Inc. (Related document(s) 297) (Kogan, Christina) (Filed on 2/6/2015) (Entered: 02/06/2015)	
302	02/09/2015	Joint MOTION for Extension of Time to Complete Discovery re Experts filed by Unwired Planet, LLC. (Attachments: # 1 Declaration of Kevin M. Kneupper, # 2 Proposed Order)(Kneupper, Kevin) (Filed on 2/9/2015) (Entered: 02/09/2015)	
303	02/10/2015	Administrative Motion to File Under Seal filed by Apple Inc. (Attachments: # 1 Declaration, # 2 Proposed Order, # 3 Redacted Version of Exhibit 1, # 4 Unredacted Version of Exhibit 1, # 5 Redacted Version of Exhibit 2, # 6 Unredacted Version of Exhibit 2, # 7 Redacted Version of Exhibit 3, # 8 Unredacted Version of Exhibit 3, # 9 Redacted Version of Exhibit 4, # 10 Unredacted Version of Exhibit 4, # 11 Redacted Version of Exhibit 5, # 12 Unredacted Version of Exhibit 5, # 13 Redacted Version of Exhibit 6, # 14 Unredacted Version of Exhibit 6)(Kogan, Christina) (Filed on 2/10/2015) (Entered: 02/10/2015)	
304	02/10/2015	RESPONSE (re 298 MOTION for Resolution of Objections to Printed Source Code Under Protective Order) filed byApple Inc. (Attachments: # 1 Declaration, # 2 Redacted Exhibit 1, # 3 Redacted Exhibit 2, # 4 Redacted Exhibit 3, # 5 Redacted Exhibit 4, # 6 Redacted Exhibit 5, # 7 Redacted Exhibit 6)(Kogan, Christina) (Filed on 2/10/2015) (Entered: 02/10/2015)	
305	02/11/2015	Order by Hon. Vince Chhabria granting 302 Motion for Extension of Time to Complete Discovery.(knm, COURT STAFF) (Filed on 2/11/2015) (Entered: 02/11/2015)	
306	02/17/2015	REPLY (re 298 MOTION for Resolution of Objections to Printed Source Code Under Protective Order) filed byUnwired Planet, LLC. (Attachments: # 1 Declaration of Kevin M. Kneupper)(Campbell, John) (Filed on 2/17/2015) (Entered: 02/17/2015)	
	02/17/2015	Set/Reset Deadlines as to SJ Motion Hearing set for 4/22/2015 10:00 AM in Courtroom 4, 17th Floor, San Francisco before Hon. Vince Chhabria. (knm, COURT STAFF) (Filed on 2/17/2015) (Entered: 02/17/2015)	
307	02/19/2015	Order by Hon. Vince Chhabria granting 297 Administrative Motion to File Under Seal.(knm, COURT STAFF) (Filed on 2/19/2015) (Entered: 02/19/2015)	
308	02/19/2015	Order by Hon. Vince Chhabria granting 303 Administrative Motion to File Under Seal.(knm, COURT STAFF) (Filed on 2/19/2015) (Entered: 02/19/2015)	
	02/20/2015	Set/Reset Deadlines as to 298 MOTION for Resolution of Objections to Printed Source Code Under Protective Order . Motion Hearing set for 3/12/2015 10:00 AM in Courtroom 4, 17th Floor, San Francisco before Hon. Vince Chhabria. (knm, COURT STAFF) (Filed on 2/20/2015) (Entered: 02/20/2015)	
309	02/27/2015	Order by Hon. Vince Chhabria granting 299 Motion for Pro Hac Vice- Cawley.(knm, COURT STAFF) (Filed on 2/27/2015) (Entered: 02/27/2015)	
310	03/02/2015	Administrative Motion to File Under Seal filed by Unwired Planet, LLC. (Attachments: # 1 Declaration of Kevin M. Kneupper, # 2 Proposed Order, # 3 Redacted MSJ, # 4 Unredacted MSJ, # 5 Exhibit 2 Redacted, # 6 Exhibit 2 Unredacted, # 7 Exhibit 3 Redacted, # 8 Exhibit 3 Unredacted, # 9 Exhibit 4 Redacted, # 10	

#	Date	Proceeding Text	Source
		Exhibit 4 Unredacted, # 11 Exhibit 5 Redacted, # 12 Exhibit 5 Unredacted, # 13 Exhibit 6 Redacted, # 14 Exhibit 6 Unredacted, # 15 Exhibit 8 Redacted, # 16 Exhibit 8 Unredacted, # 17 Exhibit 9 Redacted, # 18 Exhibit 9 Unredacted, # 19 Exhibit 10 Redacted, # 20 Exhibit 10 Unredacted, # 21 Exhibit 11 Redacted, # 22 Exhibit 11 Unredacted, # 23 Exhibit 12 Redacted, # 24 Exhibit 12, part 1 Unredacted, # 25 Exhibit 12, part 2 Unredacted, # 26 Exhibit 12, part 3 Unredacted, # 27 Exhibit 13 Redacted, # 28 Exhibit 13 Unredacted, # 29 Exhibit 14 Redacted, # 30 Exhibit 14 Unredacted, # 31 Exhibit 15 Redacted, # 32 Exhibit 15 Unredacted, # 33 Exhibit 16 Redacted, # 34 Exhibit 16 Unredacted, # 35 Exhibit 18 Redacted, # 36 Exhibit 18 Unredacted, # 37 Exhibit 19 Redacted, # 38 Exhibit 19 Unredacted, # 39 Exhibit 20 Redacted, # 40 Exhibit 20 Unredacted, # 41 Exhibit 25 Redacted, # 42 Exhibit 25 Unredacted, # 43 Exhibit 26 Redacted, # 44 Exhibit 26 Unredacted, # 45 Exhibit 27 Redacted, # 46 Exhibit 27 Unredacted, # 47 Exhibit 28 Redacted, # 48 Exhibit 28 Unredacted, # 49 Exhibit 29 Redacted, # 50 Exhibit 29 Unredacted, # 51 Exhibit 30 Redacted, # 52 Exhibit 30 Unredacted, # 53 Exhibit 31 Redacted, # 54 Exhibit 31 Unredacted, # 55 Exhibit 32 Redacted, # 56 Exhibit 32 Unredacted, # 57 Exhibit 33 Redacted, # 58 Exhibit 33 Unredacted, # 59 Exhibit 35 Redacted, # 60 Exhibit 35 Unredacted, # 61 Exhibit 36 Redacted, # 62 Exhibit 36 Unredacted)(Kneupper, Kevin) (Filed on 3/2/2015) (Entered: 03/02/2015)	
311	03/02/2015	MOTION for Summary Judgment filed by Unwired Planet, LLC. Responses due by 3/16/2015. Replies due by 3/23/2015. (Attachments: # 1 Declaration of Kevin M. Kneupper, # 2 Exhibit 1, # 3 Exhibit 2, # 4 Exhibit 3, # 5 Exhibit 4, # 6 Exhibit 5, # 7 Exhibit 6, # 8 Exhibit 7, # 9 Exhibit 8, # 10 Exhibit 9, # 11 Exhibit 10, # 12 Exhibit 11, # 13 Exhibit 12, # 14 Exhibit 13, # 15 Exhibit 14, # 16 Exhibit 15, # 17 Exhibit 16, # 18 Exhibit 17, # 19 Exhibit 18, # 20 Exhibit 19, # 21 Exhibit 20, # 22 Exhibit 21, # 23 Exhibit 22, # 24 Exhibit 23, # 25 Exhibit 24, # 26 Exhibit 25, # 27 Exhibit 26, # 28 Exhibit 27, # 29 Exhibit 28, # 30 Exhibit 29, # 31 Exhibit 30, # 32 Exhibit 31, # 33 Exhibit 32, # 34 Exhibit 33, # 35 Exhibit 34, # 36 Exhibit 35, # 37 Exhibit 36)(Kneupper, Kevin) (Filed on 3/2/2015) (Entered: 03/02/2015)	
312	03/10/2015	Notice of Withdrawal of Motion for Resolution of Objections to Printed Source Code Under Protective Order [Dkt 298] (Campbell, John) (Filed on 3/10/2015) (Entered: 03/10/2015)	
313	03/16/2015	*** DOCUMENT REMOVED PER ORDER # 338 . REFILED AS # 318 . *** Administrative Motion to File Under Seal Apple's Motion to Exclude filed by Apple Inc. (Attachments: # 1 Declaration of Brooke Wallace, # 2 Proposed Order Granting, # 3 Exhibit A, # 4 Exhibit B, # 5 Exhibit D, # 6 Exhibit E, # 7 Exhibit F, # 8 Exhibit I, # 9 Exhibit J, # 10 Exhibit K, # 11 Exhibit L, # 12 Exhibit M, # 13 Exhibit N, # 14 Exhibit Q, # 15 Exhibit S)(Wallace, Brooke) (Filed on 3/16/2015) Modified on 4/8/2015 (farS, COURT STAFF). (Main Document 313 replaced on 4/14/2015) (ewn, COURT STAFF). (Attachment 1 replaced on 4/14/2015) (ewn, COURT STAFF). (Attachment 2 replaced on 4/14/2015) (ewn, COURT STAFF). (Attachment 3 replaced on 4/14/2015) (ewn, COURT STAFF). (Attachment 4 replaced on 4/14/2015) (ewn, COURT STAFF). (Attachment 5 replaced on 4/14/2015) (ewn, COURT STAFF). (Attachment 6 replaced on 4/14/2015) (ewn, COURT STAFF). (Attachment 7 replaced on 4/14/2015) (ewn, COURT STAFF). (Attachment 8 replaced on 4/14/2015) (ewn, COURT STAFF).	

#	Date	Proceeding Text	Source
		(Attachment 9 replaced on 4/14/2015) (ewn, COURT STAFF). (Attachment 10 replaced on 4/14/2015) (ewn, COURT STAFF). (Attachment 11 replaced on 4/14/2015) (ewn, COURT STAFF). (Attachment 12 replaced on 4/14/2015) (ewn, COURT STAFF). (Attachment 13 replaced on 4/14/2015) (ewn, COURT STAFF). (Attachment 14 replaced on 4/14/2015) (ewn, COURT STAFF). (Attachment 15 replaced on 4/14/2015) (ewn, COURT STAFF). Modified on 4/14/2015 (ewn, COURT STAFF). Modified on 4/14/2015 (ewn, COURT STAFF). (Entered: 03/16/2015)	
314	03/16/2015	*** DOCUMENT REMOVED PER ORDER # 338 . REFILED AS # 319 . *** MOTION to Strike Unwired Planet's Survey Expert Dr. Greg M. Allenby's, Damages Expert Mr. Robert Mills, and the "Expert" Disclosure of Mr. Tim Robbins filed by Apple Inc. Responses due by 3/30/2015. Replies due by 4/6/2015. (Attachments: # 1 Declaration of Brooke Wallace, # 2 Proposed Order Granting, # 3 Exhibit A, # 4 Exhibit B, # 5 Exhibit C, # 6 Exhibit D, # 7 Exhibit E, # 8 Exhibit F, # 9 Exhibit G, # 10 Exhibit H, # 11 Exhibit I, # 12 Exhibit J, # 13 Exhibit K, # 14 Exhibit L, # 15 Exhibit M, # 16 Exhibit N, # 17 Exhibit O, # 18 Exhibit P, # 19 Exhibit Q, # 20 Exhibit R, # 21 Exhibit S)(Wallace, Brooke) (Filed on 3/16/2015) Modified on 3/17/2015 (ewn, COURT STAFF). Modified on 4/8/2015 (farS, COURT STAFF). Modified on 4/14/2015 (ewn, COURT STAFF). (Main Document 314 replaced on 4/14/2015) (ewn, COURT STAFF). (Entered: 03/16/2015)	
315	03/16/2015	CERTIFICATE OF SERVICE by Apple Inc re 313 Administrative Motion to File Under Seal Apple's Motion to Exclude (Wallace, Brooke) (Filed on 3/16/2015) (Entered: 03/16/2015)	
316	03/16/2015	Administrative Motion to File Under Seal filed by Apple Inc. (Attachments: # 1 Declaration, # 2 Proposed Order, # 3 Unredacted Version of Motion for Summary Judgment, # 4 Exhibit 1, # 5 Exhibit 4, # 6 Exhibit 5, # 7 Exhibit 7, # 8 Exhibit 8, # 9 Exhibit 9, # 10 Exhibit 10, # 11 Exhibit 11, # 12 Exhibit 12, # 13 Exhibit 13, # 14 Exhibit 14, # 15 Exhibit 15, # 16 Exhibit 17, # 17 Exhibit 18, # 18 Exhibit 19, # 19 Exhibit 20, # 20 Exhibit 21, # 21 Exhibit 22, # 22 Exhibit 23, # 23 Exhibit 24, # 24 Exhibit 25, # 25 Exhibit 26, # 26 Exhibit 27, # 27 Exhibit 28, # 28 Exhibit 29, # 29 Exhibit 31, # 30 Exhibit 33, # 31 Exhibit 35, # 32 Exhibit 36, # 33 Exhibit 37, # 34 Exhibit 38, # 35 Exhibit 43, # 36 Exhibit 45, # 37 Exhibit 46, # 38 Exhibit 47, # 39 Exhibit 50, # 40 Exhibit 51, # 41 Exhibit 52, # 42 Exhibit 53, # 43 Exhibit 54, # 44 Exhibit 56, # 45 Exhibit 57, # 46 Exhibit 58)(Kogan, Christina) (Filed on 3/16/2015) (Entered: 03/16/2015)	
317	03/16/2015	MOTION for Summary Judgment filed by Apple Inc. Responses due by 3/30/2015. Replies due by 4/6/2015. (Attachments: # 1 Declaration, # 2 Exhibit 1, # 3 Exhibit 2, # 4 Exhibit 3, # 5 Exhibit 4, # 6 Exhibit 5, # 7 Exhibit 6, # 8 Exhibit 7, # 9 Exhibit 8, # 10 Exhibit 9, # 11 Exhibit 10, # 12 Exhibit 11, # 13 Exhibit 12, # 14 Exhibit 13, # 15 Exhibit 14, # 16 Exhibit 15, # 17 Exhibit 16, # 18 Exhibit 17, # 19 Exhibit 18, # 20 Exhibit 19, # 21 Exhibit 20, # 22 Exhibit 21, # 23 Exhibit 22, # 24 Exhibit 23, # 25 Exhibit 24, # 26 Exhibit 25, # 27 Exhibit 26, # 28 Exhibit 27, # 29 Exhibit 28, # 30 Exhibit 29, # 31 Exhibit 30, # 32 Exhibit 31, # 33 Exhibit 32, # 34 Exhibit 33, # 35 Exhibit 34, # 36 Exhibit 35, # 37 Exhibit 36, # 38 Exhibit 37, # 39 Exhibit 38, # 40 Exhibit 39, # 41 Exhibit 40, # 42 Exhibit 41, # 43 Exhibit 42, # 44 Exhibit 43, # 45 Exhibit 44, # 46 Exhibit 45, # 47 Exhibit 46, # 48 Exhibit 47, # 49 Exhibit 48, # 50 Exhibit 49, # 51 Exhibit 50, # 52 Exhibit 51, # 53 Exhibit 52, # 54 Exhibit 53, # 55 Exhibit 54, # 56 Exhibit 55, # 57 Exhibit 56, # 58 Exhibit 57, # 59 Exhibit 58, # 60 Exhibit 59, # 61 Exhibit 60)(Kogan, Christina) (Filed on 3/16/2015) (Entered: 03/16/2015)	

#	Date	Proceeding Text	Source
318	03/16/2015	Administrative Motion to File Under Seal Apple's Motion to Exclude filed by Apple Inc. (Attachments: # 1 Declaration of Brooke Wallace, # 2 Proposed Order Granting, # 3 Non-Redacted Version of Motion to Exclude, # 4 Exhibit A, # 5 Exhibit B, # 6 Exhibit D, # 7 Exhibit E, # 8 Exhibit F, # 9 Exhibit I, # 10 Exhibit J, # 11 Exhibit K, # 12 Exhibit L, # 13 Exhibit M, # 14 Exhibit N, # 15 Exhibit Q, # 16 Exhibit S)(Wallace, Brooke) (Filed on 3/16/2015) (Entered: 03/16/2015)	
319	03/16/2015	MOTION to Strike Unwired Planet's Survey Expert Dr. Greg M. Allenby's, Damages Expert Mr. Robert Mills, and the "Expert" Disclosure of Mr. Tim Robbins filed by Apple Inc. Responses due by 3/30/2015. Replies due by 4/6/2015. (Attachments: # 1 Declaration of Brooke Wallace, # 2 Proposed Order Granting, # 3 Exhibit A, # 4 Exhibit B, # 5 Exhibit C, # 6 Exhibit D, # 7 Exhibit E, # 8 Exhibit F, # 9 Exhibit G, # 10 Exhibit H, # 11 Exhibit I, # 12 Exhibit J, # 13 Exhibit K, # 14 Exhibit L, # 15 Exhibit M, # 16 Exhibit N, # 17 Exhibit O, # 18 Exhibit P, # 19 Exhibit Q, # 20 Exhibit R, # 21 Exhibit S)(Wallace, Brooke) (Filed on 3/16/2015) (Entered: 03/16/2015)	
320	03/16/2015	MOTION to Remove Incorrectly Filed Document DI-313 and DI-314 filed by Apple Inc. (Attachments: # 1 Proposed Order Granting)(Wallace, Brooke) (Filed on 3/16/2015) (Entered: 03/16/2015)	
321	03/16/2015	CERTIFICATE OF SERVICE by Apple Inc re 318 Administrative Motion to File Under Seal Apple's Motion to Exclude (Wallace, Brooke) (Filed on 3/16/2015) (Entered: 03/16/2015)	
322	03/25/2015	ERRATA re 319 MOTION to Strike Unwired Planet's Survey Expert Dr. Greg M. Allenby's, Damages Expert Mr. Robert Mills, and the "Expert" Disclosure of Mr. Tim Robbins by Apple Inc. (Attachments: # 1 Corrected Image for Dkt No. 319)(Wallace, Brooke) (Filed on 3/25/2015) (Entered: 03/25/2015)	
323	03/30/2015	Administrative Motion to File Under Seal filed by Unwired Planet, LLC. (Attachments: # 1 Declaration of Leah Buratti, # 2 Proposed Order, # 3 Opposition to Motion to Exclude Experts, # 4 Opposition to Motion to Exclude Experts SEALED, # 5 Exhibit 1, # 6 Exhibit 1 SEALED, # 7 Exhibit 2, # 8 Exhibit 2 SEALED, # 9 Exhibit 3, # 10 Exhibit 3 SEALED, # 11 Exhibit 4, # 12 Exhibit 4 SEALED, # 13 Exhibit 5, # 14 Exhibit 5 SEALED, # 15 Exhibit 6, # 16 Exhibit 6 SEALED, # 17 Exhibit 7, # 18 Exhibit 7 SEALED, # 19 Exhibit 8, # 20 Exhibit 8 SEALED, # 21 Exhibit 9, # 22 Exhibit 9 SEALED, # 23 Exhibit 10, # 24 Exhibit 10 SEALED, # 25 Exhibit 11, # 26 Exhibit 11 SEALED, # 27 Exhibit 20, # 28 Exhibit 20 SEALED, # 29 Exhibit 21, # 30 Exhibit 21 SEALED, # 31 Exhibit 22, # 32 Exhibit 22 SEALED, # 33 Exhibit 23, # 34 Exhibit 23 SEALED, # 35 Exhibit 24, # 36 Exhibit 24 SEALED, # 37 Exhibit 25, # 38 Exhibit 25 SEALED, # 39 Exhibit 26, # 40 Exhibit 26 SEALED, # 41 Exhibit 27, # 42 Exhibit 27 SEALED, # 43 Exhibit 28, # 44 Exhibit 28 SEALED, # 45 Exhibit 29, # 46 Exhibit 29 SEALED)(Kneupper, Kevin) (Filed on 3/30/2015) (Entered: 03/30/2015)	
324	03/30/2015	RESPONSE (re 319 MOTION to Strike Unwired Planet's Survey Expert Dr. Greg M. Allenby's, Damages Expert Mr. Robert Mills, and the "Expert" Disclosure of Mr. Tim Robbins) filed byUnwired Planet, LLC. (Attachments: # 1 Declaration of Leah Buratti, # 2 Exhibit 1, # 3 Exhibit 2, # 4 Exhibit 3, # 5 Exhibit 4, # 6 Exhibit 5, # 7 Exhibit 6, # 8 Exhibit 7, # 9 Exhibit 8, # 10 Exhibit 9, # 11 Exhibit 10, # 12 Exhibit 11, # 13 Exhibit 12, # 14 Exhibit 13, # 15 Exhibit 14, # 16 Exhibit 15, # 17 Exhibit 16, # 18 Exhibit 17, # 19 Exhibit 18, # 20 Exhibit 19, # 21 Exhibit 20, # 22 Exhibit 21, # 23 Exhibit 22, # 24 Exhibit 23, # 25 Exhibit 24, # 26 Exhibit 25, # 27 Exhibit	

#	Date	Proceeding Text	Source
		26, # 28 Exhibit 27, # 29 Exhibit 28, # 30 Exhibit 29, # 31 Exhibit 30)(Kneupper, Kevin) (Filed on 3/30/2015) (Entered: 03/30/2015)	
325	03/30/2015	Administrative Motion to File Under Seal filed by Unwired Planet, LLC. (Attachments: # 1 Declaration of Kevin Kneupper, # 2 Proposed Order, # 3 Response to Motion for Summary Judgment, # 4 Motion for Summary Jugment SEALED, # 5 Exhibit 2, # 6 Exhibit 2 SEALED, # 7 Exhibit 3, # 8 Exhibit 3 SEALED, # 9 Exhibit 4, # 10 Exhibit 4 SEALED, # 11 Exhibit 5, # 12 Exhibit 5 SEALED, # 13 Exhibit 6, # 14 Exhibit 6 SEALED, # 15 Exhibit 7, # 16 Exhibit 7 SEALED, # 17 Exhibit 9, # 18 Exhibit 9 SEALED, # 19 Exhibit 10, # 20 Exhibit 10 SEALED, # 21 Exhibit 11, # 22 Exhibit 11 SEALED, # 23 Exhibit 12, # 24 Exhibit 12 SEALED, # 25 Exhibit 13, # 26 Exhibit 13 SEALED, # 27 Exhibit 14, # 28 Exhibit 14 SEALED, # 29 Exhibit 16, # 30 Exhibit 16 SEALED, # 31 Exhibit 17, # 32 Exhibit 17 SEALED, # 33 Exhibit 21, # 34 Exhibit 21 SEALED, # 35 Exhibit 23, # 36 Exhibit 23 SEALED, # 37 Exhibit 26, # 38 Exhibit 26 SEALED, # 39 Exhibit 27, # 40 Exhibit 27 SEALED, # 41 Exhibit 28, # 42 Exhibit 28 SEALED, # 43 Exhibit 29, # 44 Exhibit 29 SEALED, # 45 Exhibit 30, # 46 Exhibit 30 SEALED, # 47 Exhibit 31, # 48 Exhibit 31 SEALED, # 49 Exhibit 32, # 50 Exhibit 32 SEALED, # 51 Exhibit 34, # 52 Exhibit 34 SEALED, # 53 Exhibit 35, # 54 Exhibit 35 SEALED)(Kneupper, Kevin) (Filed on 3/30/2015) (Entered: 03/30/2015)	
326	03/30/2015	RESPONSE (re 317 MOTION for Summary Judgment) filed byUnwired Planet, LLC. (Attachments: # 1 Declaration Kevin Kneupper, # 2 Exhibit 1, # 3 Exhibit 2, # 4 Exhibit 3, # 5 Exhibit 4, # 6 Exhibit 5, # 7 Exhibit 6, # 8 Exhibit 7, # 9 Exhibit 8, # 10 Exhibit 9, # 11 Exhibit 10, # 12 Exhibit 11, # 13 Exhibit 12, # 14 Exhibit 13, # 15 Exhibit 14, # 16 Exhibit 15, part 1, # 17 Exhibit 15, part 2, # 18 Exhibit 16, # 19 Exhibit 17, # 20 Exhibit 18, # 21 Exhibit 19, # 22 Exhibit 20, # 23 Exhibit 21, # 24 Exhibit 22, # 25 Exhibit 23, # 26 Exhibit 24, # 27 Exhibit 25, # 28 Exhibit 26, # 29 Exhibit 27, # 30 Exhibit 28, # 31 Exhibit 29, # 32 Exhibit 30, # 33 Exhibit 31, # 34 Exhibit 32, # 35 Exhibit 33, # 36 Exhibit 34, # 37 Exhibit 35, # 38 Exhibit 36, # 39 Exhibit 37)(Kneupper, Kevin) (Filed on 3/30/2015) (Entered: 03/30/2015)	
327	04/01/2015	ERRATA re 317 MOTION for Summary Judgment and Opposition to Unwired Planet's Motion for Summary Judgment by Apple Inc. (Attachments: # 1 Corrected Image for Dkt. No. 317)(Wallace, Brooke) (Filed on 4/1/2015) (Entered: 04/01/2015)	
328	04/02/2015	Declaration of Christina Kogan in Support of 323 Administrative Motion to File Under Seal filed byApple Inc. (Related document(s) 323) (Kogan, Christina) (Filed on 4/2/2015) (Entered: 04/02/2015)	
329	04/02/2015	Declaration of Christina Kogan in Support of 325 Administrative Motion to File Under Seal filed byApple Inc. (Related document(s) 325) (Kogan, Christina) (Filed on 4/2/2015) (Entered: 04/02/2015)	
330	04/02/2015	Declaration of Christina Kogan in Support of 310 Administrative Motion to File Under Seal filed byApple Inc. (Related document(s) 310) (Kogan, Christina) (Filed on 4/2/2015) (Entered: 04/02/2015)	
331	04/03/2015	NOTICE of Appearance by Stephanie M. Adams Ryan (Adams Ryan, Stephanie) (Filed on 4/3/2015) (Entered: 04/03/2015)	
332	04/06/2015	Administrative Motion to File Under Seal Apple Inc.'s Reply ISO Motion to Exclude Unwired Planets Survey Expert Dr. Greg M. Allenby, Damages Expert Mr. Robert Mills, and the Expert Disclosure of Mr. Tim Robbins filed by Apple Inc. (Attachments: # 1 Declaration of B. Wallace, # 2 Proposed Order Granting Motion,	

#	Date	Proceeding Text	Source
		# 3 Redacted Version of Reply ISO Motion to Exclude, # 4 Unredacted Version of Reply ISO Motion to Exclude)(Wallace, Brooke) (Filed on 4/6/2015) (Entered: 04/06/2015)	
333	04/06/2015	REPLY (re 319 MOTION to Strike Unwired Planet's Survey Expert Dr. Greg M. Allenby's, Damages Expert Mr. Robert Mills, and the "Expert" Disclosure of Mr. Tim Robbins) filed byApple Inc. (Wallace, Brooke) (Filed on 4/6/2015) (Entered: 04/06/2015)	
334	04/06/2015	CERTIFICATE OF SERVICE by Apple Inc re 332 Administrative Motion to File Under Seal Apple Inc.'s Reply ISO Motion to Exclude Unwired Planets Survey Expert Dr. Greg M. Allenby, Damages Expert Mr. Robert Mills, and the Expert Disclosure of Mr. Tim Robbins (Wallace, Brooke) (Filed on 4/6/2015) (Entered: 04/06/2015)	
335	04/06/2015	Administrative Motion to File Under Seal Apple Inc.'s Reply ISO Motion for Summary Judgment filed by Apple Inc. (Attachments: # 1 Declaration Stuart M. Rosenberg, # 2 Proposed Order Granting Motion, # 3 Unredacted Version of Reply ISO MSJ)(Hsin, Yu-Chieh) (Filed on 4/6/2015) (Entered: 04/06/2015)	
336	04/06/2015	REPLY (re 317 MOTION for Summary Judgment) filed byApple Inc. (Hsin, Yu-Chieh) (Filed on 4/6/2015) (Entered: 04/06/2015)	
337	04/06/2015	CERTIFICATE OF SERVICE by Apple Inc re 335 Administrative Motion to File Under Seal Apple Inc.'s Reply ISO Motion for Summary Judgment (Hsin, Yu-Chieh) (Filed on 4/6/2015) (Entered: 04/06/2015)	
338	04/08/2015	Order by Hon. Vince Chhabria granting 320 Motion to Remove Incorrectly Filed Document 313 and 314 .(knm, COURT STAFF) (Filed on 4/8/2015) (Entered: 04/08/2015)	
339	04/14/2015	UNOPPOSED MOTION to Partially Seal the Courtroom During Hearing on Motions for Summary Judgment filed by Unwired Planet, LLC. Responses due by 4/28/2015. Replies due by 5/5/2015. (Attachments: # 1 Proposed Order)(Kneupper, Kevin) (Filed on 4/14/2015) Modified on 4/15/2015 (aaaS, COURT STAFF). (Entered: 04/14/2015)	
340	04/17/2015	MOTION to Seal Courtroom during April 22, 2015 Hearing On the Parties' Motions for Summary Judgment and Apple's Motion to Exclude Unwired Planet's Experts filed by Apple Inc. Motion Hearing set for 4/22/2015 10:00 AM in Courtroom 4, 17th Floor, San Francisco before Hon. Vince Chhabria. Responses due by 5/1/2015. Replies due by 5/8/2015. (Attachments: # 1 Declaration of Sarita Venkat, # 2 Proposed Order)(Hsin, Yu-Chieh) (Filed on 4/17/2015) (Entered: 04/17/2015)	
341	04/20/2015	STIPULATION WITH PROPOSED ORDER Regarding Equipment and Materials for Hearings on April 22, 2015 filed by Unwired Planet, LLC. (Kneupper, Kevin) (Filed on 4/20/2015) (Entered: 04/20/2015)	
342	04/20/2015	ERRATA re 336 Reply to Opposition/Response In Support Of Its Motion for Summary Judgment by Apple Inc. (Attachments: # 1 Corrected Image for Dkt. No. 336)(Wallace, Brooke) (Filed on 4/20/2015) (Entered: 04/20/2015)	
343	04/20/2015	Order by Hon. Vince Chhabria granting 341 Stipulation re Equipment and Materials for Hearing on April 22, 2015.(knm, COURT STAFF) (Filed on 4/20/2015) (Entered: 04/20/2015)	
344	04/21/2015	ORDER denying motions to seal. Signed by Judge Vince Chhabria on 4/21/205. (vclc3S, COURT STAFF) (Filed on 4/21/2015) (Entered: 04/21/2015)	
345	04/21/2015	ORDER RE Hearing on April 22, 2015. Signed by Judge Vince Chhabria on 4/21/2015. (vclc3S, COURT STAFF) (Filed on 4/21/2015) (Entered: 04/21/2015)	

#	Date	Proceeding Text	Source
347	04/22/2015	Minute Entry for proceedings held before Hon. Vince Chhabria: Motion Hearing held on 4/22/2015 re 317 MOTION for Summary Judgment filed by Apple Inc. and 311 MOTION for Summary Judgment filed by Unwired Planet, LLC. The motion to seal the courtroom for the entire proceeding is denied. The Court takes the matter under submission and will issue a written order. Court Reporter Name Joann Bryce. Plaintiff Attorneys: David Sochia, Ted Stevenson, Douglas Cawley, John Campbell, Kevin Kneupper, Christopher Mierzejewski, Mario Apreotesi, Stephanie Adams Ryan. Plaintiff Clients: Daniel Mendez, Tim Robbins, and Amy Koestner. Defendant Attorney: Ernest Hsin, Mark Lyon, Stuart Rosenberg, Brooke Myers Wallace. Defendant Client: David Melaugh. This is a text only Minute Entry (knm, COURT STAFF) (Date Filed: 4/22/2015) (Entered: 04/23/2015)	
346	04/23/2015	TRANSCRIPT ORDER by Unwired Planet, LLC for Court Reporter Jo Ann Bryce. (Campbell, John) (Filed on 4/23/2015) (Entered: 04/23/2015)	
348	04/23/2015	ORDER GRANTING SUMMARY JUDGMENT RE WILLFUL INFRINGEMENT. Signed by Judge Vince Chhabria on 4/23/2015. (knm, COURT STAFF) (Filed on 4/23/2015) (Entered: 04/23/2015)	
349	04/23/2015	TRANSCRIPT ORDER by Apple Inc for Court Reporter Jo Ann Bryce. (Wallace, Brooke) (Filed on 4/23/2015) (Entered: 04/23/2015)	
350	04/27/2015	Transcript of Proceedings held on 4/22/15, before Judge Vince Chhabria. Court Reporter Jo Ann Bryce, Telephone number 510-910-5888, joann_bryce@cand.uscourts.gov. Per General Order No. 59 and Judicial Conference policy, this transcript may be viewed only at the Clerk's Office public terminal or may be purchased through the Court Reporter until the deadline for the Release of Transcript Restriction after 90 days. After that date, it may be obtained through PACER. Any Notice of Intent to Request Redaction, if required, is due no later than 5 business days from date of this filing. (Re 346 Transcript Order) Release of Transcript Restriction set for 7/27/2015. (Related documents(s) 346) (Bryce, Joann) (Filed on 4/27/2015) (Entered: 04/27/2015)	
351	04/28/2015	Administrative Motion to File Under Seal Apple's MSJ Reply filed by Apple Inc. (Attachments: # 1 Declaration, # 2 Proposed Order, # 3 Redacted Version of Apple's MSJ Reply, # 4 Unredacted Version of Apple's MSJ Reply)(Kogan, Christina) (Filed on 4/28/2015) (Entered: 04/28/2015)	
352	04/28/2015	Administrative Motion to File Under Seal pursuant to Dkt 344 filed by Unwired Planet, LLC. (Attachments: # 1 Declaration of Kevin M. Kneupper, # 2 Proposed Order, # 3 Redacted Version of Unwired Planets's MSJ, # 4 Unredacted Version of Unwired Planets's MSJ, # 5 Exhibit 11 Redacted, # 6 Exhibit 11 Unredacted, # 7 Exhibit 12 Redacted, # 8 Exhibit 12, part 1 Unredacted, # 9 Exhibit 12, part 2 Unredacted, # 10 Exhibit 12, part 3 Unredacted, # 11 Exhibit 18 Redacted, # 12 Exhibit 18 Unredacted, # 13 Exhibit 29 Redacted, # 14 Exhibit 29 Unredacted, # 15 Exhibit 30, part 1 Redacted, # 16 Exhibit 30 part 2 Redacted, # 17 Exhibit 30 part 3 Redacted, # 18 Exhibit 30 part 4 Redacted, # 19 Exhibit 30 part 5 Redacted, # 20 Exhibit 30 part 6 Redacted, # 21 Exhibit 30 part 7 Redacted, # 22 Exhibit 30 part 8 Redacted, # 23 Exhibit 30 part 9 Redacted, # 24 Exhibit 30 part 10 Redacted, # 25 Exhibit 30 Unredacted, # 26 Exhibit 32 Redacted, # 27 Exhibit 32 Unredacted, # 28 Exhibit 33 Redacted, # 29 Exhibit 33 Unredacted)(Kneupper, Kevin) (Filed on 4/28/2015) (Entered: 04/28/2015)	
353	04/28/2015	Administrative Motion to File Under Seal pursuant to D.I. 344 filed by Apple Inc. (Attachments: # 1 Declaration Declaration ISO	

#	Date	Proceeding Text	Source
		Motion to File Under Seal Apple's Reply ISO Its Motion to Exclude, # 2 Proposed Order Proposed Order Granting Apple's Administrative Motion to File Under Seal, # 3 Redacted Version of Apple's Reply ISO Its Motion to Exclude, # 4 Unredacted Version of Apple's Reply ISO Its Motion to Exclude)(Wallace, Brooke) (Filed on 4/28/2015) (Entered: 04/28/2015)	
354	04/28/2015	Brief re 311 MOTION for Summary Judgment refiled pursuant to Dkt 344 filed byUnwired Planet, LLC. (Attachments: # 1 Declaration of Kevin M. Kneupper, # 2 Exhibit 1, # 3 Exhibit 2, # 4 Exhibit 3, # 5 Exhibit 4, # 6 Exhibit 6, # 7 Exhibit 7, # 8 Exhibit 8, # 9 Exhibit 9, # 10 Exhibit 10, # 11 Exhibit 11, # 12 Exhibit 12, # 13 Exhibit 13, # 14 Exhibit 14, # 15 Exhibit 15, # 16 Exhibit 16, # 17 Exhibit 17, # 18 Exhibit 18, # 19 Exhibit 19, # 20 Exhibit 20, # 21 Exhibit 21, # 22 Exhibit 22, # 23 Exhibit 23, # 24 Exhibit 24, # 25 Exhibit 25, # 26 Exhibit 26, # 27 Exhibit 27, # 28 Exhibit 28, # 29 Exhibit 29, # 30 Exhibit 30 part 1, # 31 Exhibit 30 part 2, # 32 Exhibit 30 part 3, # 33 Exhibit 30 part 4, # 34 Exhibit 30 part 5, # 35 Exhibit 30 part 6, # 36 Exhibit 30 part 7, # 37 Exhibit 30 part 8, # 38 Exhibit 30 part 9, # 39 Exhibit 30 part 10, # 40 Exhibit 31, # 41 Exhibit 32, # 42 Exhibit 33, # 43 Exhibit 34, # 44 Exhibit 35, # 45 Exhibit 36)(Related document(s) 311) (Kneupper, Kevin) (Filed on 4/28/2015) (Entered: 04/28/2015)	
355	04/28/2015	Administrative Motion to File Under Seal pursuant to D.I. 344 filed by Apple Inc. (Attachments: # 1 Declaration Declaration ISO Motion to File Under Seal Apple's Motion to Exclude, # 2 Proposed Order Proposed Order Granting Apple's Administrative Motion to File Under Seal, # 3 Redacted Version of Apple's Motion to Exclude, # 4 Exhibit B Redacted, # 5 Exhibit E Redacted, # 6 Exhibit I Redacted, # 7 Exhibit J Redacted, # 8 Exhibit K Redacted, # 9 Exhibit L Redacted, # 10 Exhibit M Redacted, # 11 Exhibit N Redacted, # 12 Exhibit Q Redacted, # 13 Exhibit S Redacted, # 14 Unredacted Version of Apple's Motion to Exclude, # 15 Exhibit B Unredacted, # 16 Exhibit E Unredacted, # 17 Exhibit I Unredacted, # 18 Exhibit J Unredacted, # 19 Exhibit K Unredacted, # 20 Exhibit L Unredacted, # 21 Exhibit M Unredacted, # 22 Exhibit N Unredacted, # 23 Exhibit Q Unredacted, # 24 Exhibit S Unredacted)(Wallace, Brooke) (Filed on 4/28/2015) (Entered: 04/28/2015)	
356	04/28/2015	Administrative Motion to File Under Seal pursuant to D.I. 344 filed by Apple Inc. (Attachments: # 1 Declaration, # 2 Proposed Order, # 3 Redacted Version of Apple's MSJ, # 4 Unredacted Version of Apple's MSJ, # 5 Redacted Version of Exhibit 1, # 6 Unredacted Version of Exhibit 1, # 7 Redacted Version of Exhibit 8, # 8 Unredacted Version of Exhibit 8, # 9 Redacted Version of Exhibit 13, # 10 Unredacted Version of Exhibit 13, # 11 Redacted Version of Exhibit 14, # 12 Unredacted Version of Exhibit 14, # 13 Redacted Version of Exhibit 15, # 14 Unredacted Version of Exhibit 15, # 15 Redacted Version of Exhibit 19, # 16 Unredacted Version of Exhibit 19, # 17 Redacted Version of Exhibit 21, # 18 Unredacted Version of Exhibit 21, # 19 Redacted Version of Exhibit 22, # 20 Unredacted Version of Exhibit 22, # 21 Redacted Version of Exhibit 23, # 22 Unredacted Version of Exhibit 23, # 23 Redacted Version of Exhibit 29, # 24 Unredacted Version of Exhibit 29, # 25 Redacted Version of Exhibit 33, # 26 Unredacted Version of Exhibit 33, # 27 Redacted Version of Exhibit 35, # 28 Unredacted Version of Exhibit 35, # 29 Redacted Version of Exhibit 36, # 30 Unredacted Version of Exhibit 36, # 31 Redacted Version of Exhibit 37, # 32 Unredacted Version of Exhibit 37, # 33 Redacted Version of Exhibit 38, # 34 Unredacted Version of Exhibit 38, # 35 Redacted Version of Exhibit 43, # 36 Unredacted	

#	Date	Proceeding Text	Source
		Version of Exhibit 43, # 37 Redacted Version of Exhibit 50, # 38 Unredacted Version of Exhibit 50, # 39 Redacted Version of Exhibit 51, # 40 Unredacted Version of Exhibit 51, # 41 Redacted Version of Exhibit 52, # 42 Unredacted Version of Exhibit 52, # 43 Redacted Version of Exhibit 53, # 44 Unredacted Version of Exhibit 53, # 45 Redacted Version of Exhibit 54, # 46 Unredacted Version of Exhibit 54, # 47 Redacted Version of Exhibit 56, # 48 Unredacted Version of Exhibit 56, # 49 Redacted Version of Exhibit 57, # 50 Unredacted Version of Exhibit 57, # 51 Redacted Version of Exhibit 58, # 52 Unredacted Version of Exhibit 58)(Kogan, Christina) (Filed on 4/28/2015) (Entered: 04/28/2015)	
357	04/28/2015	Administrative Motion to File Under Seal pursuant to Dkt 344 filed by Unwired Planet, LLC. (Attachments: # 1 Declaration of Kevin M. Kneupper, # 2 Proposed Order, # 3 Redacted UP's Response to Motion to Exclude Experts, # 4 UnRedacted UP's Response to Motion to Exclude Experts, # 5 Exhibit 7 Redacted, # 6 Exhibit 7 Unredacted, # 7 Exhibit 8 Redacted, # 8 Exhibit 8 Unredacted, # 9 Exhibit 9 Redacted, # 10 Exhibit 9 Unredacted, # 11 Exhibit 20 part 1 Redacted, # 12 Exhibit 20 part 2 Redacted, # 13 Exhibit 20 part 3 Redacted, # 14 Exhibit 20 Unredacted, # 15 Exhibit 21 Redacted, # 16 Exhibit 21 Unredacted, # 17 Exhibit 22 Redacted, # 18 Exhibit 22 Unredacted, # 19 Exhibit 23 Redacted, # 20 Exhibit 23 Unredacted, # 21 Exhibit 24 Redacted, # 22 Exhibit 24 Unredacted, # 23 Exhibit 25 Redacted, # 24 Exhibit 25 Unredacted, # 25 Exhibit 26 Redacted, # 26 Exhibit 26 Unredacted, # 27 Exhibit 27 Redacted, # 28 Exhibit 27 Unredacted, # 29 Exhibit 28 Redacted, # 30 Exhibit 28 Unredacted, # 31 Exhibit 29 Redacted, # 32 Exhibit 29 Unredacted)(Kneupper, Kevin) (Filed on 4/28/2015) (Entered: 04/28/2015)	
358	04/28/2015	Administrative Motion to File Under Seal pursuant to Dkt 344 filed by Unwired Planet, LLC. (Attachments: # 1 Declaration of Kevin M. Kneupper, # 2 Proposed Order, # 3 Redacted UP's Response in Opposition to Apple's MSJ, # 4 Unredacted UP's Response in Opposition to Apple's MSJ, # 5 Exhibit 2 Redacted, # 6 Exhibit 2 Unredacted, # 7 Exhibit 5 Redacted, # 8 Exhibit 5 Unredacted, # 9 Exhibit 6 Redacted, # 10 Exhibit 6 Unredacted, # 11 Exhibit 12 Redacted, # 12 Exhibit 12 Unredacted, # 13 Exhibit 13 Redacted, # 14 Exhibit 13 Unredacted, # 15 Exhibit 14 Redacted, # 16 Exhibit 14 Unredacted, # 17 Exhibit 17 Redacted, # 18 Exhibit 17 Unredacted, # 19 Exhibit 21 Redacted, # 20 Exhibit 21 Unredacted, # 21 Exhibit 23 Redacted, # 22 Exhibit 23 Unredacted, # 23 Exhibit 28 Redacted, # 24 Exhibit 28 Unredacted, # 25 Exhibit 30 Redacted, # 26 Exhibit 30 Unredacted, # 27 Exhibit 31 Redacted, # 28 Exhibit 31 Unredacted, # 29 Exhibit 32 part 1 Redacted, # 30 Exhibit 32 part 2 Redacted, # 31 Exhibit 32 part 3 Redacted, # 32 Exhibit 32 part 1 Unredacted, # 33 Exhibit 32 part 2 Unredacted, # 34 Exhibit 32 part 3 Unredacted, # 35 Exhibit 34 Redacted, # 36 Exhibit 34 Unredacted, # 37 Exhibit 35 Redacted, # 38 Exhibit 35 Unredacted)(Kneupper, Kevin) (Filed on 4/28/2015) (Entered: 04/28/2015)	
359	04/28/2015	CERTIFICATE OF SERVICE by Apple Inc re 353 Administrative Motion to File Under Seal pursuant to D.I. 344 Apples Reply In Support Of Its Motion To Exclude (Wallace, Brooke) (Filed on 4/28/2015) (Entered: 04/28/2015)	
360	04/28/2015	CERTIFICATE OF SERVICE by Apple Inc re 355 Administrative Motion to File Under Seal pursuant to D.I. 344 APPLES MOTION TO EXCLUDE (D.I. 319) (Wallace, Brooke) (Filed on 4/28/2015) (Entered: 04/28/2015)	

#	Date	Proceeding Text	Source
361	04/28/2015	CERTIFICATE OF SERVICE by Apple Inc re 351 Administrative Motion to File Under Seal Apple's MSJ Reply In Support Of Its Motion For Summary Judgment (D.I. 336) (Kogan, Christina) (Filed on 4/28/2015) (Entered: 04/28/2015)	
362	04/28/2015	CERTIFICATE OF SERVICE by Apple Inc re 356 Administrative Motion to File Under Seal pursuant to D.I. 344 Apples Motion For Summary Judgment (D.I. 317) (Kogan, Christina) (Filed on 4/28/2015) (Entered: 04/28/2015)	
363	04/29/2015	ORDER re further briefing. Signed by Judge Vince Chhabria on 4/29/2015. (vclc3, COURT STAFF) (Filed on 4/29/2015) (Entered: 04/29/2015)	
364	04/30/2015	Declaration of Kevin M. Kneupper in Support of 355 Administrative Motion to File Under Seal pursuant to D.I. 344 filed byUnwired Planet, LLC. (Related document(s) 355) (Kneupper, Kevin) (Filed on 4/30/2015) (Entered: 04/30/2015)	
365	04/30/2015	Declaration of Kevin M. Kneupper in Support of 353 Administrative Motion to File Under Seal pursuant to D.I. 344 filed byUnwired Planet, LLC. (Related document(s) 353) (Kneupper, Kevin) (Filed on 4/30/2015) (Entered: 04/30/2015)	
366	04/30/2015	Declaration of Kevin M. Kneupper in Support of 356 Administrative Motion to File Under Seal pursuant to D.I. 344 filed byUnwired Planet, LLC. (Related document(s) 356) (Kneupper, Kevin) (Filed on 4/30/2015) (Entered: 04/30/2015)	
367	04/30/2015	Declaration of Kevin M. Kneupper in Support of 351 Administrative Motion to File Under Seal Apple's MSJ Reply filed byUnwired Planet, LLC. (Related document(s) 351) (Kneupper, Kevin) (Filed on 4/30/2015) (Entered: 04/30/2015)	
368	04/30/2015	Declaration of Christina Kogan in Support of 352 Administrative Motion to File Under Seal pursuant to Dkt 344 filed byApple Inc. (Related document(s) 352) (Kogan, Christina) (Filed on 4/30/2015) (Entered: 04/30/2015)	
369	04/30/2015	Declaration of Christina Kogan in Support of 357 Administrative Motion to File Under Seal pursuant to Dkt 344 filed byApple Inc. (Related document(s) 357) (Kogan, Christina) (Filed on 4/30/2015) (Entered: 04/30/2015)	
370	04/30/2015	Declaration of Christina Kogan in Support of 358 Administrative Motion to File Under Seal pursuant to Dkt 344 filed byApple Inc. (Related document(s) 358) (Kogan, Christina) (Filed on 4/30/2015) (Entered: 04/30/2015)	
371	05/01/2015	Statement Joint Statement of the Case by Apple Inc. and Unwired Planet LLC by Apple Inc. (Wallace, Brooke) (Filed on 5/1/2015) (Entered: 05/01/2015)	
372	05/01/2015	Proposed Voir Dire by Unwired Planet, LLC and Apple Inc.. (Kneupper, Kevin) (Filed on 5/1/2015) (Entered: 05/01/2015)	
373	05/01/2015	Administrative Motion to File Under Seal Apple's MIL #4 filed by Apple Inc. (Attachments: # 1 Declaration, # 2 Proposed Order, # 3 Redacted Version of Apple's MIL #4, # 4 Unredacted Version of Apple's MIL #4)(Kogan, Christina) (Filed on 5/1/2015) (Entered: 05/01/2015)	
374	05/01/2015	MOTION in Limine #4 with Opp per Judge's Standing Order filed by Apple Inc. Motion Hearing set for 5/13/2015 10:00 AM before Hon. Vince Chhabria. Responses due by 5/1/2015. Replies due by 5/1/2015. (Kogan, Christina) (Filed on 5/1/2015) (Entered: 05/01/2015)	
375	05/01/2015	Proposed Form of Verdict by Apple Inc and Unwired Planet LLC. (Wallace, Brooke) (Filed on 5/1/2015) (Entered: 05/01/2015)	
376	05/01/2015	Administrative Motion to File Under Seal Apple's MIL #3 filed by Apple Inc. (Attachments: # 1 Declaration, # 2 Proposed Order, # 3	

#	Date	Proceeding Text	Source
		Redacted Version of Apple's MIL #3, # 4 Unredacted Version of Apple's MIL #3)(Kogan, Christina) (Filed on 5/1/2015) (Entered: 05/01/2015)	
377	05/01/2015	MOTION in Limine #3 with Opp per Judge's Standing Order filed by Apple Inc. Motion Hearing set for 5/13/2015 10:00 AM before Hon. Vince Chhabria. Responses due by 5/1/2015. Replies due by 5/1/2015. (Kogan, Christina) (Filed on 5/1/2015) (Entered: 05/01/2015)	
378	05/01/2015	Brief re 363 Order for Further Briefing on '446 "Voice Channel" filed byUnwired Planet, LLC. (Related document(s) 363) (Stevenson, Theodore) (Filed on 5/1/2015) (Entered: 05/01/2015)	
379	05/01/2015	Administrative Motion to File Under Seal Further Briefing on '446 Patent "Voice Channel" filed by Apple Inc. (Attachments: # 1 Declaration, # 2 Proposed Order, # 3 Exhibit REDACTED Brief re Further Briefing on '446 Patent "Voice Channel", # 4 Exhibit UNREDACTED Brief re Further Briefing on '446 Patent "Voice Channel")(Wallace, Brooke) (Filed on 5/1/2015) (Entered: 05/01/2015)	
380	05/01/2015	Brief re 363 Order on Further Briefing on '446 Patent "Voice Channel" filed byApple Inc. (Related document(s) 363) (Wallace, Brooke) (Filed on 5/1/2015) (Entered: 05/01/2015)	
381	05/01/2015	MOTION in Limine #5 with Opp per Judge's Standing Order filed by Apple Inc. Motion Hearing set for 5/13/2015 10:00 AM before Hon. Vince Chhabria. Responses due by 5/1/2015. Replies due by 5/1/2015. (Kogan, Christina) (Filed on 5/1/2015) (Entered: 05/01/2015)	
382	05/01/2015	Administrative Motion to File Under Seal Apple's MIL No. 1 and UP's Opposition Thereto filed by Apple Inc. (Attachments: # 1 Declaration, # 2 Proposed Order, # 3 Exhibit REDACTED version of Apple's MIL No. 1 and UP's Opposition Thereto, # 4 Exhibit UNREDACTED version of Apple's MIL No. 1 and UP's Opposition Thereto)(Wallace, Brooke) (Filed on 5/1/2015) (Entered: 05/01/2015)	
383	05/01/2015	MOTION in Limine #1 with Opp per Judge's Standing Order filed by Apple Inc. Motion Hearing set for 5/13/2015 10:00 AM before Hon. Vince Chhabria. Responses due by 5/1/2015. Replies due by 5/1/2015. (Wallace, Brooke) (Filed on 5/1/2015) (Entered: 05/01/2015)	
384	05/01/2015	CERTIFICATE OF SERVICE by Apple Inc re 379 Administrative Motion to File Under Seal Further Briefing on '446 Patent "Voice Channel" (Wallace, Brooke) (Filed on 5/1/2015) (Entered: 05/01/2015)	
385	05/01/2015	CERTIFICATE OF SERVICE by Apple Inc re 373 Administrative Motion to File Under Seal Apple's MIL #4 (Kogan, Christina) (Filed on 5/1/2015) (Entered: 05/01/2015)	
386	05/01/2015	CERTIFICATE OF SERVICE by Apple Inc re 376 Administrative Motion to File Under Seal Apple's MIL #3 (Kogan, Christina) (Filed on 5/1/2015) (Entered: 05/01/2015)	
387	05/01/2015	MOTION in Limine #2 with Opp per Judge's Standing Order filed by Unwired Planet, LLC. Motion Hearing set for 5/13/2015 01:30 PM before Hon. Vince Chhabria. Responses due by 5/1/2015. Replies due by 5/1/2015. (Kneupper, Kevin) (Filed on 5/1/2015) (Entered: 05/01/2015)	
388	05/01/2015	MOTION in Limine #3 with Opp per Judge's Standing Order filed by Unwired Planet, LLC. Motion Hearing set for 5/13/2015 01:30 PM before Hon. Vince Chhabria. Responses due by 5/1/2015. Replies due by 5/1/2015. (Kneupper, Kevin) (Filed on 5/1/2015) (Entered: 05/01/2015)	

#	Date	Proceeding Text	Source
389	05/01/2015	MOTION in Limine #4 with Opp per Judge's Standing Order filed by Unwired Planet, LLC. Motion Hearing set for 5/13/2015 01:30 PM before Hon. Vince Chhabria. Responses due by 5/1/2015. Replies due by 5/1/2015. (Kneupper, Kevin) (Filed on 5/1/2015) (Entered: 05/01/2015)	
390	05/01/2015	MOTION in Limine #5 with Opp per Judge's Standing Order filed by Unwired Planet, LLC. Motion Hearing set for 5/13/2015 01:30 PM before Hon. Vince Chhabria. Responses due by 5/1/2015. Replies due by 5/1/2015. (Kneupper, Kevin) (Filed on 5/1/2015) (Entered: 05/01/2015)	
391	05/01/2015	Proposed Jury Instructions by Apple Inc Joint Proposed Jury Instructions. (Wallace, Brooke) (Filed on 5/1/2015) (Entered: 05/01/2015)	
392	05/01/2015	CERTIFICATE OF SERVICE by Apple Inc re 382 Administrative Motion to File Under Seal Apple's MIL No. 1 and UP's Opposition Thereto (Wallace, Brooke) (Filed on 5/1/2015) (Entered: 05/01/2015)	
393	05/01/2015	Administrative Motion to File Under Seal Unwired Planet's MIL #1 filed by Unwired Planet, LLC. (Attachments: # 1 Declaration of Kevin M. Kneupper, # 2 Proposed Order, # 3 Redacted Version of UP's Motion in Limine #1, # 4 Unredacted Version of UP's Motion in Limine #1)(Kneupper, Kevin) (Filed on 5/1/2015) (Entered: 05/01/2015)	
394	05/01/2015	Administrative Motion to File Under Seal Apple's MIL #2 with Opp per Judge's Standing Order filed by Apple Inc. (Attachments: # 1 Declaration, # 2 Proposed Order, # 3 REDACTED Apple's MIL No. 2 with UP Opposition, # 4 UNREDACTED Apple's MIL No. 2 with UP Opposition)(Wallace, Brooke) (Filed on 5/1/2015) (Entered: 05/01/2015)	
395	05/01/2015	MOTION in Limine # 2 with Opp per Judge's Standing Order filed by Apple Inc. Motion Hearing set for 5/13/2015 10:00 AM before Hon. Vince Chhabria. Responses due by 5/1/2015. Replies due by 5/1/2015. (Wallace, Brooke) (Filed on 5/1/2015) (Entered: 05/01/2015)	
396	05/01/2015	Proposed Pretrial Order by Unwired Planet, LLC. (Attachments: # 1 Joint Trial Exhibit List)(Kneupper, Kevin) (Filed on 5/1/2015) (Entered: 05/01/2015)	
397	05/01/2015	NOTICE by Apple Inc Section 282 Notice (Wallace, Brooke) (Filed on 5/1/2015) (Entered: 05/01/2015)	
398	05/01/2015	CERTIFICATE OF SERVICE by Apple Inc re 394 Administrative Motion to File Under Seal Apple's MIL #2 with Opp per Judge's Standing Order (Wallace, Brooke) (Filed on 5/1/2015) (Entered: 05/01/2015)	
399	05/01/2015	TRIAL BRIEF by Apple Inc. (Wallace, Brooke) (Filed on 5/1/2015) (Entered: 05/01/2015)	
400	05/07/2015	ORDER re further briefing on on-sale bar. Signed by Judge Vince Chhabria on 5/7/2015. (vclc3, COURT STAFF) (Filed on 5/7/2015) (Entered: 05/07/2015)	
401	05/07/2015	CLERK'S NOTICE VACATING THE PRETRIAL CONFERENCE. The Court will reset the PTC and send notice. (This is a text-only entry generated by the court. There is no document associated with this entry.) (knm, COURT STAFF) (Filed on 5/7/2015) (Entered: 05/07/2015)	
402	05/07/2015	Declaration of Kevin M. Kneupper in Support of 382 Administrative Motion to File Under Seal Apple's MIL No. 1 and UP's Opposition Thereto filed byUnwired Planet, LLC. (Related document(s) 382) (Kneupper, Kevin) (Filed on 5/7/2015) (Entered: 05/07/2015)	
403	05/07/2015	Declaration of Kevin M. Kneupper in Support of 373 Administrative	

#	Date	Proceeding Text	Source
		Motion to File Under Seal Apple's MIL #4 filed byUnwired Planet, LLC. (Related document(s) 373) (Kneupper, Kevin) (Filed on 5/7/2015) (Entered: 05/07/2015)	
404	05/07/2015	Declaration of Christina Kogan in Support of 393 Administrative Motion to File Under Seal Unwired Planet's MIL #1 filed byApple Inc. (Related document(s) 393) (Kogan, Christina) (Filed on 5/7/2015) (Entered: 05/07/2015)	
405	05/11/2015	Administrative Motion to File Under Seal Apple's Further Briefing Regarding On-Sale Bar filed by Apple Inc. (Attachments: # 1 Declaration Declaration ISO Apple's Administrative Motion to File Under Seal Further Briefing Re On-Sale Bar, # 2 Proposed Order Proposed Order Granting Apple's Administrative Motion to File Under Seal, # 3 Unredacted Version of Apple's Further Briefing Regarding On-Sale Bar, # 4 Redacted Version of Apple's Further Briefing Regarding On-Sale Bar)(Hsin, Yu-Chieh) (Filed on 5/11/2015) (Entered: 05/11/2015)	
406	05/11/2015	Brief re 400 Order Regarding Further Briefing on '092 On-Sale Bar filed byUnwired Planet, LLC. (Related document(s) 400) (Stevenson, Theodore) (Filed on 5/11/2015) (Entered: 05/11/2015)	
407	05/11/2015	Brief re 400 Order Apple's Further Briefing Regarding On-Sale Bar filed byApple Inc. (Related document(s) 400) (Hsin, Yu-Chieh) (Filed on 5/11/2015) (Entered: 05/11/2015)	
408	05/11/2015	CERTIFICATE OF SERVICE by Apple Inc re 405 Administrative Motion to File Under Seal Apple's Further Briefing Regarding On-Sale Bar (Hsin, Yu-Chieh) (Filed on 5/11/2015) (Entered: 05/11/2015)	
409	05/13/2015	TRANSCRIPT ORDER for Daily Trial by Apple Inc. (Lyon, Hervey) (Filed on 5/13/2015) (Entered: 05/13/2015)	
410	05/14/2015	TRANSCRIPT ORDER for Daily Trial by Unwired Planet, LLC. (Campbell, John) (Filed on 5/14/2015) (Entered: 05/14/2015)	
411	05/15/2015	CLERK'S NOTICE SCHEDULING A TELEPHONIC CASE MANAGEMENT CONFERENCE: Further Case Management Conference set for 5/18/2015 04:00 PM in Courtroom 4, 17th Floor, San Francisco. (This is a text-only entry generated by the court. There is no document associated with this entry.) (knm, COURT STAFF) (Filed on 5/15/2015) (Entered: 05/15/2015)	
412	05/18/2015	Minute Entry for proceedings held before Hon. Vince Chhabria: Further Case Management Conference held on 5/18/2015. Final Pretrial Conference set for 6/1/2015 01:00 PM in Courtroom 4, 17th Floor, San Francisco. Jury Selection set for 6/3/2015 08:30 AM in Courtroom 4, 17th Floor, San Francisco before Hon. Vince Chhabria. Jury Trial set for 6/8/2015 through 6/19/2015 08:30 AM in Courtroom 4, 17th Floor, San Francisco before Hon. Vince Chhabria. Not reported or recorded. Plaintiff Attorney David Sochia, Ted Stenvenson, Douglas Cawley. Defendant Attorney Ernest Hsin, Mark Lyon, Stuart Rosenberg, Brooke Wallace, Tracy Davies. This is a text only Minute Entry (knm, COURT STAFF) (Date Filed: 5/18/2015) (Entered: 05/19/2015)	
413	05/26/2015	NOTICE of Change In Counsel by Michael Dudley Rounds (Rounds, Michael) (Filed on 5/26/2015) (Entered: 05/26/2015)	
414	05/26/2015	SUMMARY JUDGMENT ORDER. Signed by Judge Vince Chhabria on 5/22/2015. (knm, COURT STAFF) (Filed on 5/26/2015) (Entered: 05/26/2015)	
415	05/26/2015	STIPULATION Joint Stipulation Seeking Final Judgment filed by Apple Inc. (Wallace, Brooke) (Filed on 5/26/2015) (Entered: 05/26/2015)	
417	05/27/2015	Minute Entry for proceedings held before Hon. Vince Chhabria: Telephone Conference in chambers held on 5/27/2015. Not	

#	Date	Proceeding Text	Source
		reported or recorded. Plaintiff Attorney Ted Stevenson. Defendant Attorney Mark Lyon, Ernest Hsin, and Stuart Rosenberg. This is a text only Minute Entry (knm, COURT STAFF) (Date Filed: 5/27/2015) (Entered: 05/29/2015)	
416	05/28/2015	STIPULATION Revised Joint Stipulation Seeking Final Judgment filed by Apple Inc. (Wallace, Brooke) (Filed on 5/28/2015) (Entered: 05/28/2015)	
418	05/29/2015	FINAL JUDGMENT. Signed by Judge Vince Chhabria on 5/29/2015. (knm, COURT STAFF) (Filed on 5/29/2015) (Entered: 05/29/2015)	
419	05/29/2015	Order by Hon. Vince Chhabria granting 351 Administrative Motion to File Under Seal.(knm, COURT STAFF) (Filed on 5/29/2015) (Entered: 05/29/2015)	
420	05/29/2015	Order by Hon. Vince Chhabria granting 352 Administrative Motion to File Under Seal.(knm, COURT STAFF) (Filed on 5/29/2015) (Entered: 05/29/2015)	
421	05/29/2015	Order by Hon. Vince Chhabria granting 353 Administrative Motion to File Under Seal.(knm, COURT STAFF) (Filed on 5/29/2015) (Entered: 05/29/2015)	
422	05/29/2015	Order by Hon. Vince Chhabria granting 355 Administrative Motion to File Under Seal.(knm, COURT STAFF) (Filed on 5/29/2015) (Entered: 05/29/2015)	
423	05/29/2015	Order by Hon. Vince Chhabria granting 356 Administrative Motion to File Under Seal.(knm, COURT STAFF) (Filed on 5/29/2015) (Entered: 05/29/2015)	
424	05/29/2015	Order by Hon. Vince Chhabria granting 357 Administrative Motion to File Under Seal.(knm, COURT STAFF) (Filed on 5/29/2015) (Entered: 05/29/2015)	
425	05/29/2015	Order by Hon. Vince Chhabria granting 358 Administrative Motion to File Under Seal.(knm, COURT STAFF) (Filed on 5/29/2015) (Entered: 05/29/2015)	
426	05/29/2015	Order by Hon. Vince Chhabria granting 373 Administrative Motion to File Under Seal.(knm, COURT STAFF) (Filed on 5/29/2015) (Entered: 05/29/2015)	
427	05/29/2015	Order by Hon. Vince Chhabria granting 376 Administrative Motion to File Under Seal.(knm, COURT STAFF) (Filed on 5/29/2015) (Entered: 05/29/2015)	
428	05/29/2015	Order by Hon. Vince Chhabria granting 379 Administrative Motion to File Under Seal.(knm, COURT STAFF) (Filed on 5/29/2015) (Entered: 05/29/2015)	
429	05/29/2015	Order by Hon. Vince Chhabria granting 382 Administrative Motion to File Under Seal.(knm, COURT STAFF) (Filed on 5/29/2015) (Entered: 05/29/2015)	
430	05/29/2015	Order by Hon. Vince Chhabria granting 393 Administrative Motion to File Under Seal.(knm, COURT STAFF) (Filed on 5/29/2015) (Entered: 05/29/2015)	
431	05/29/2015	Order by Hon. Vince Chhabria granting 394 Administrative Motion to File Under Seal.(knm, COURT STAFF) (Filed on 5/29/2015) (Entered: 05/29/2015)	
432	05/29/2015	Order by Hon. Vince Chhabria granting 405 Administrative Motion to File Under Seal.(knm, COURT STAFF) (Filed on 5/29/2015) (Entered: 05/29/2015)	
433	06/05/2015	NOTICE OF APPEAL to the Federal Circuit as to 418 Judgment, 290 Order on Motion for Miscellaneous Relief, 151 Order on Motion for Miscellaneous Relief, 269 Order, 348 Order, 261 Order, 186 Order, 414 Order, Terminate Motions by Unwired Planet, LLC. Filing fee $ 505, receipt number 0971-9576420. Appeal Record due by 7/6/2015. (Stevenson, Theodore) (Filed on	

#	Date	Proceeding Text	Source
		6/5/2015) (Entered: 06/05/2015)	
434	06/10/2015	Transmission of Notice of Appeal and Docket Sheet to the Federal Circuit Court of Appeals as to 433 Notice of Appeal to the Federal Circuit. Appeal Record due by 7/10/2015. (farS, COURT STAFF) (Filed on 6/10/2015) (Additional attachment(s) added on 6/10/2015: # 1 Docket Sheet) (farS, COURT STAFF). (Entered: 06/10/2015)	
435	06/10/2015	MOTION for Extension of Time to File Bill of Costs and Motion for Attorneys' Fees filed by Apple Inc. (Attachments: # 1 Declaration, # 2 Proposed Order)(Kogan, Christina) (Filed on 6/10/2015) (Entered: 06/10/2015)	
436	06/11/2015	Order by Hon. Vince Chhabria granting 435 Motion for Extension of Time to File Bill of Costs to June 19, 2015.(knm, COURT STAFF) (Filed on 6/11/2015) (Entered: 06/11/2015)	
437	06/19/2015	NOTICE OF CROSS APPEAL to the Federal Circuit as to 252 Discovery Order, 345 Order, 344 Order, 269 Order, 400 Order, 414 Order, Terminate Motions by Apple Inc. Filing fee $ 505, receipt number 0971-9614223. Appeal Record due by 7/20/2015. (Wallace, Brooke) (Filed on 6/19/2015) (Entered: 06/19/2015)	
438	06/19/2015	Administrative Motion to File Under Seal Exhibit E and Schedule E to Apple's Bill of Costs filed by Apple Inc. (Attachments: # 1 Declaration, # 2 Proposed Order, # 3 Unredacted Version of Exhibit E, # 4 Redacted Version of Exhibit E, # 5 Unredacted Version of Schedule E, # 6 Redacted Version of Schedule E)(Kogan, Christina) (Filed on 6/19/2015) (Entered: 06/19/2015)	
439	06/19/2015	MOTION for Bill of Costs filed by Apple Inc. Responses due by 7/6/2015. Replies due by 7/13/2015. (Attachments: # 1 Declaration, # 2 Schedule A, # 3 Schedule B, # 4 Schedule C, # 5 Schedule D, # 6 Schedule E, # 7 Exhibit A - part 1, # 8 Exhibit A - part 2, # 9 Exhibit B, # 10 Exhibit C, # 11 Exhibit D, # 12 Exhibit E)(Kogan, Christina) (Filed on 6/19/2015) (Entered: 06/19/2015)	
440	06/19/2015	CERTIFICATE OF SERVICE by Apple Inc re 438 Administrative Motion to File Under Seal Exhibit E and Schedule E to Apple's Bill of Costs (Kogan, Christina) (Filed on 6/19/2015) (Entered: 06/19/2015)	
441	06/19/2015	Administrative Motion to File Under Seal Portions of Lyon Declaration ISO Motion for Fees filed by Apple Inc. (Attachments: # 1 Declaration, # 2 Proposed Order, # 3 Unredacted Lyon Declaration ISO Motion for Fees, # 4 Redacted Lyon Declaration ISO Motion for Fees)(Wallace, Brooke) (Filed on 6/19/2015) (Entered: 06/19/2015)	
442	06/19/2015	MOTION for Attorney Fees filed by Apple Inc. Responses due by 7/6/2015. Replies due by 7/13/2015. (Attachments: # 1 Declaration, # 2 Exhibit 1, # 3 Exhibit 2, # 4 Exhibit 3, # 5 Exhibit 4, # 6 Exhibit 5, # 7 Exhibit 6, # 8 Exhibit 7, # 9 Exhibit 8)(Wallace, Brooke) (Filed on 6/19/2015) (Entered: 06/19/2015)	
443	06/19/2015	CERTIFICATE OF SERVICE by Apple Inc re 441 Administrative Motion to File Under Seal Portions of Lyon Declaration ISO Motion for Fees (Wallace, Brooke) (Filed on 6/19/2015) (Entered: 06/19/2015)	
444	06/26/2015	Order Re Apple's Motions to Seal, by Hon. Vince Chhabria- granting 438 Administrative Motion to File Under Seal and ordering briefing re 441 Administrative Motion to File Under Seal which is due by 7/10/2015.(knm, COURT STAFF) (Filed on 6/26/2015) Modified on 6/29/2015 (knm, COURT STAFF). (Entered: 06/26/2015)	
445	06/30/2015	USCA Case Number 15-1725 Fed Cir. (farS, COURT STAFF) (Filed on 6/30/2015) (Entered: 06/30/2015)	

#	Date	Proceeding Text	Source
446	06/30/2015	MOTION for Extension of Time to File Response/Reply as to 442 MOTION for Attorney Fees , 439 MOTION for Bill of Costs filed by Unwired Planet, LLC. (Attachments: # 1 Proposed Order)(Stevenson, Theodore) (Filed on 6/30/2015) (Entered: 06/30/2015)	
447	06/30/2015	Declaration of Kevin M. Kneupper in Support of 446 MOTION for Extension of Time to File Response/Reply as to 442 MOTION for Attorney Fees , 439 MOTION for Bill of Costs filed byUnwired Planet, LLC. (Related document(s) 446) (Stevenson, Theodore) (Filed on 6/30/2015) (Entered: 06/30/2015)	
448	07/01/2015	Order by Hon. Vince Chhabria granting 446 Motion for Extension of Time to File Response.(knm, COURT STAFF) (Filed on 7/1/2015) (Entered: 07/01/2015)	
449	07/02/2015	Transmission of 437 Notice of Cross-Appeal and Docket Sheet to the Federal Circuit Court of Appeals. Appeal Record due by 8/3/2015. (Attachments: # 1 Docket Sheet)(farS, COURT STAFF) (Filed on 7/2/2015) (Entered: 07/02/2015)	
450	07/08/2015	Notice of Withdrawal of Motion to File Under Seal Certain Portions of Lyon Declaration ISO Apple's Motion for Fees (Attachments: # 1 Exhibit A - Unredacted Lyon Declaration ISO Apple's Motion for Fees)(Wallace, Brooke) (Filed on 7/8/2015) (Entered: 07/08/2015)	
451	07/15/2015	USCA Case Number 15-1795 Federal Circuit for 433 Notice of Appeal filed by Unwired Planet, LLC. (farS, COURT STAFF) (Filed on 7/15/2015) (Entered: 07/15/2015)	
452	07/27/2015	Administrative Motion to File Under Seal Portions of Objections to Apple's Bill of Cost filed by Unwired Planet, LLC. (Attachments: # 1 Declaration of Kevin M. Kneupper, # 2 Proposed Order, # 3 Redacted Objections to Apple's Bill of Cost, # 4 Unredacted Objections to Apple's Bill of Cost)(Stevenson, Theodore) (Filed on 7/27/2015) (Entered: 07/27/2015)	
453	07/27/2015	RESPONSE (re 439 MOTION for Bill of Costs) filed byUnwired Planet, LLC. (Stevenson, Theodore) (Filed on 7/27/2015) (Entered: 07/27/2015)	
454	07/27/2015	Administrative Motion to File Under Seal Portions of Unwired Planet's Response to Apple's Motion for Attorneys' Fees Pursuant to 35 U.S.C. § 285, and Exhibits 13, 14, and 15 to the Declaration of Kevin M. Kneupper filed by Unwired Planet, LLC. (Attachments: # 1 Declaration of Kevin M. Kneupper, # 2 Proposed Order, # 3 Redacted Response to Apple's Motion for Attorneys' Fees, # 4 Unredacted Response to Apple's Motion for Attorneys' Fees, # 5 Exhibit 13 Redacted, # 6 Exhibit 13 Unredacted, # 7 Exhibit 14 Redacted, # 8 Exhibit 14 Unredacted, # 9 Exhibit 15 Redacted, # 10 Exhibit 15 Unredacted)(Kneupper, Kevin) (Filed on 7/27/2015) (Entered: 07/27/2015)	
455	07/27/2015	RESPONSE (re 442 MOTION for Attorney Fees) filed byUnwired Planet, LLC. (Attachments: # 1 Declaration of Kevin M. Kneupper, # 2 Exhibit 1, # 3 Exhibit 2, # 4 Exhibit 3, # 5 Exhibit 4, # 6 Exhibit 5, # 7 Exhibit 6, # 8 Exhibit 7, # 9 Exhibit 8, # 10 Exhibit 9, # 11 Exhibit 10, # 12 Exhibit 11, # 13 Exhibit 12, # 14 Exhibit 13, # 15 Exhibit 14, # 16 Exhibit 15, # 17 Exhibit 16, # 18 Exhibit 17, # 19 Exhibit 18, # 20 Exhibit 19, # 21 Exhibit 20, # 22 Exhibit 21)(Stevenson, Theodore) (Filed on 7/27/2015) (Entered: 07/27/2015)	
456	07/29/2015	MOTION for Extension of Time to File Response/Reply as to 442 MOTION for Attorney Fees , 439 MOTION for Bill of Costs filed by Apple Inc. (Attachments: # 1 Declaration, # 2 Proposed Order)(Kogan, Christina) (Filed on 7/29/2015) (Entered: 07/29/2015)	
457	07/29/2015	Declaration in Support of 452 Administrative Motion to File Under	

#	Date	Proceeding Text	Source
		Seal Portions of Objections to Apple's Bill of Cost filed byApple Inc. (Related document(s) 452) (Kogan, Christina) (Filed on 7/29/2015) (Entered: 07/29/2015)	
458	07/29/2015	Declaration of Christina Kogan in Support of 454 Administrative Motion to File Under Seal Portions of Unwired Planet's Response to Apple's Motion for Attorneys' Fees Pursuant to 35 U.S.C. § 285, and Exhibits 13, 14, and 15 to the Declaration of Kevin M. Kneupper filed byApple Inc. (Related document(s) 454) (Kogan, Christina) (Filed on 7/29/2015) (Entered: 07/29/2015)	
459	07/31/2015	Order by Hon. Vince Chhabria granting 456 Motion for Extension of Time to File Response/Reply.(knm, COURT STAFF) (Filed on 7/31/2015) (Entered: 07/31/2015)	
	07/31/2015	Set/Reset Deadlines as to 439 MOTION for Bill of Costs , 442 MOTION for Attorney Fees . Replies due by 8/14/2015. (knmS, COURT STAFF) (Filed on 7/31/2015) (Entered: 07/31/2015)	
460	08/03/2015	Order by Hon. Vince Chhabria granting 452 Administrative Motion to File Under Seal.(knm, COURT STAFF) (Filed on 8/3/2015) (Entered: 08/03/2015)	
461	08/03/2015	Order by Hon. Vince Chhabria granting 454 Administrative Motion to File Under Seal.(knm, COURT STAFF) (Filed on 8/3/2015) (Entered: 08/03/2015)	
	08/07/2015	Reset Ripe Deadlines as to 439 MOTION for Bill of Costs , 442 MOTION for Attorney Fees . (knm, COURT STAFF) (Filed on 8/7/2015) (Entered: 08/07/2015)	
462	08/14/2015	Administrative Motion to File Under Seal Apple's Reply in support of its Bill of Costs filed by Apple Inc. (Attachments: # 1 Declaration, # 2 Proposed Order, # 3 Redacted Version of Apple's Reply In Support of Its Bill of Costs, # 4 Unredacted Version of Apple's Reply In Support of its Bill of Costs)(Kogan, Christina) (Filed on 8/14/2015) (Entered: 08/14/2015)	
463	08/14/2015	REPLY (re 439 MOTION for Bill of Costs) filed byApple Inc. (Kogan, Christina) (Filed on 8/14/2015) (Entered: 08/14/2015)	
464	08/14/2015	REPLY (re 442 MOTION for Attorney Fees) filed byApple Inc. (Wallace, Brooke) (Filed on 8/14/2015) (Entered: 08/14/2015)	
465	08/17/2015	Order by Hon. Vince Chhabria granting 462 Administrative Motion to File Under Seal.(knm, COURT STAFF) (Filed on 8/17/2015) (Entered: 08/17/2015)	
466	08/20/2015	Costs Taxed in amount of $54,673.74. Re: ECF No. 439, against Unwired Planet. (lsS, COURT STAFF) (Filed on 8/20/2015) (Entered: 08/20/2015)	
467	08/27/2015	MOTION for Review of Taxation of Costs filed by Apple Inc. Responses due by 9/10/2015. Replies due by 9/17/2015. (Kogan, Christina) (Filed on 8/27/2015) (Entered: 08/27/2015)	
468	08/28/2015	Order by Hon. Vince Chhabria denying 442 Motion for Attorney Fees.(knm, COURT STAFF) (Filed on 8/28/2015) (Entered: 08/28/2015)	
469	09/10/2015	Administrative Motion to File Under Seal filed by Unwired Planet, LLC. (Attachments: # 1 Declaration of Kevin P. Kneupper, # 2 Proposed Order, # 3 Redacted Response to Apple's Motion for Review of Taxation, # 4 Unredacted Response to Apple's Motion for Review of Taxation)(Kneupper, Kevin) (Filed on 9/10/2015) (Entered: 09/10/2015)	
470	09/17/2015	REPLY (re 467 MOTION for Review of Taxation of Costs) filed byApple Inc. (Kogan, Christina) (Filed on 9/17/2015) (Entered: 09/17/2015)	
471	09/17/2015	Declaration of Christina Kogan in Support of 469 Administrative Motion to File Under Seal filed byApple Inc. (Related document(s) 469) (Kogan, Christina) (Filed on 9/17/2015)	

#	Date	Proceeding Text	Source
		(Entered: 09/17/2015)	
472	09/24/2015	ORDER by Judge Vince Chhabria granting 467 Motion for Taxation of Costs. Costs taxed in the amount of $103,264.99 against Unwired Planet, LLC.; granting 469 Administrative Motion to File Under Seal (knm, COURT STAFF) (Filed on 9/24/2015) (Entered: 09/25/2015)	
473	07/25/2016	MANDATE of USCA Federal Circuit: Affirmed in Part, Vacated in Part and Remanded. (farS, COURT STAFF) (Filed on 7/25/2016) (Entered: 07/25/2016)	
474	07/25/2016	CLERK'S Letter Spreading Mandate to Counsel (farS, COURT STAFF) (Filed on 7/25/2016) (Entered: 07/25/2016)	
475	07/26/2016	CLERK'S NOTICE SCHEDULING A FURTHER CASE MANAGEMENT CONFERENCE. Case Management Statement due by 8/9/2016. Further Case Management Conference set for 8/16/2016 01:30 PM in Courtroom 4, 17th Floor, San Francisco. (This is a text-only entry generated by the court. There is no document associated with this entry.) (knm, COURT STAFF) (Filed on 7/26/2016) (Entered: 07/26/2016)	
476	08/01/2016	MOTION to Amend/Correct 475 Clerk's Notice, Apple's Unopposed Motion to Change the Date of the CMC and Deadline for CMC Statements filed by Apple Inc. Responses due by 8/15/2016. Replies due by 8/22/2016. (Attachments: # 1 Proposed Order)(Wallace, Brooke) (Filed on 8/1/2016) (Entered: 08/01/2016)	
477	08/02/2016	Order by Hon. Vince Chhabria granting 476 Motion to Continue Case Management Conference.(knm, COURT STAFF) (Filed on 8/2/2016) (Entered: 08/02/2016)	
	08/02/2016	Set Deadlines/Hearings: Case Management Statement due by 8/16/2016. Further Case Management Conference set for 8/23/2016 01:30 PM in Courtroom 4, 17th Floor, San Francisco. (knm, COURT STAFF) (Filed on 8/2/2016) (Entered: 08/02/2016)	
478	08/16/2016	JOINT CASE MANAGEMENT STATEMENT and Proposed Order filed by Apple Inc. (Wallace, Brooke) (Filed on 8/16/2016) Modified on 8/17/2016 (farS, COURT STAFF). (Entered: 08/16/2016)	
479	08/23/2016	Letter from Plaintiff Unwired Planet, LLC re Revised Proposed Trial Date . (Stevenson, Theodore) (Filed on 8/23/2016) (Entered: 08/23/2016)	
480	08/23/2016	Certificate of Interested Entities by Unwired Planet, LLC identifying Corporate Parent Optis UP Holdings, LLC for Unwired Planet, LLC. re 175 Certificate of Interested Entities as Amended (Campbell, John) (Filed on 8/23/2016) (Entered: 08/23/2016)	
481	08/23/2016	NOTICE by Unwired Planet, LLC of Withdrawal of Attorney for Plaintiff (Campbell, John) (Filed on 8/23/2016) (Entered: 08/23/2016)	
482	08/23/2016	MOTION for leave to appear in Pro Hac Vice (Filing fee $ 305, receipt number 0971-10712552.) filed by Unwired Planet, LLC. (Li, Kathy) (Filed on 8/23/2016) (Entered: 08/23/2016)	
484	08/23/2016	Minute Entry for proceedings held before Hon. Vince Chhabria: Further Case Management Conference held on 8/23/2016. Parties given the options of 4/17/2017 and 5/8/2017 for trial. Parties are ordered to submit to the Court their preference for date of trial and a proposed pretrial conference date, which should be roughly a month before the trial. Tutorial Hearing set for 12/5/2016 09:30 AM in Courtroom 4, 17th Floor, San Francisco. Motion for Summary Judgment Hearing, Motions in Limine, and Daubert Hearing set for 12/7/2016 09:30 AM in Courtroom 4, 17th Floor, San Francisco before Hon. Vince Chhabria. Total Time in Court 22 minutes. Hearing not reported or recorded. Plaintiff Attorney Jennifer Estremera and Ted Stevenson. Defendant Attorney Ernie	

#	Date	Proceeding Text	Source
		Hsin, Mark Lyon, Stuart Rosenberg and Brooke Myers Wallace. This is a text only Minute Entry (knm, COURT STAFF) (Date Filed: 8/23/2016) (Entered: 08/24/2016)	
483	08/24/2016	NOTICE by Unwired Planet, LLC of Withdrawal of Attorney for Plaintiff (Campbell, John) (Filed on 8/24/2016) (Entered: 08/24/2016)	
485	08/26/2016	Order by Hon. Vince Chhabria granting 482 Motion for Pro Hac Vice - Li.(knm, COURT STAFF) (Filed on 8/26/2016) (Entered: 08/26/2016)	
486	09/02/2016	MANDATE of USCA (farS, COURT STAFF) (Filed on 9/2/2016) (Entered: 09/02/2016)	
487	09/02/2016	CLERK'S Letter Spreading Mandate to Counsel (farS, COURT STAFF) (Filed on 9/2/2016) (Entered: 09/02/2016)	
488	09/16/2016	Statement Regarding Impact of Fed. Cir. Opinion on Dispositive and Pretrial Motions by Apple Inc. (Kogan, Christina) (Filed on 9/16/2016) (Entered: 09/16/2016)	
489	09/30/2016	Administrative Motion to File Under Seal Response to Apple's Statement Regarding Impact of Federal Circuit Opinion on Parties' Dispositive and Pretrial Motions filed by Unwired Planet, LLC. (Attachments: # 1 Proposed Order, # 2 Redacted Response to Apple's Statement re Impact of Federal Circuit Opinion, # 3 Unredacted Response to Apple's Statement re Impact of Federal Circuit Opinion)(Campbell, John) (Filed on 9/30/2016) (Entered: 09/30/2016)	
490	09/30/2016	RESPONSE to re 488 Statement Regarding Impact of Federal Circuit Opinion on Parties' Dispositive and Pretrial Motions by Unwired Planet, LLC. (Attachments: # 1 Appendix 1)(Campbell, John) (Filed on 9/30/2016) (Entered: 09/30/2016)	
491	09/30/2016	Declaration of Jennifer P. Estremera in Support of 489 Administrative Motion to File Under Seal Response to Apple's Statement Regarding Impact of Federal Circuit Opinion on Parties' Dispositive and Pretrial Motions filed byUnwired Planet, LLC. (Related document(s) 489) (Campbell, John) (Filed on 9/30/2016) (Entered: 09/30/2016)	
492	10/05/2016	STIPULATION WITH PROPOSED ORDER Joint Proposed Scheduling Order filed by Apple Inc. (Wallace, Brooke) (Filed on 10/5/2016) (Entered: 10/05/2016)	
493	10/06/2016	DECLARATION in Opposition to 489 Administrative Motion to File Under Seal Response to Apple's Statement Regarding Impact of Federal Circuit Opinion on Parties' Dispositive and Pretrial Motions filed byApple Inc. (Related document(s) 489) (Kogan, Christina) (Filed on 10/6/2016) (Entered: 10/06/2016)	
494	10/07/2016	REPLY STATEMENT re 488 Statement Regarding Impact of Fed. Cir. Opinion on Dispositive and Pretrial Motions by Apple Inc. (Wallace, Brooke) (Filed on 10/7/2016) Modified on 10/11/2016 (farS, COURT STAFF). (Entered: 10/07/2016)	
495	10/11/2016	Order by Hon. Vince Chhabria denying 489 Administrative Motion to File Under Seal.(knm, COURT STAFF) (Filed on 10/11/2016) (Entered: 10/11/2016)	
496	10/11/2016	Brief re 490 Response (Non Motion) Unredacted Public Version of Unwired Planet, LLC's Response to Apple's Statement Regarding Impact of Federal Circuit Opinion on Parties' Dispositive and Pretrial Motions re-filed per Order 495 filed byUnwired Planet, LLC. (Attachments: # 1 Appendix)(Related document(s) 490) (Campbell, John) (Filed on 10/11/2016) (Entered: 10/11/2016)	
497	10/13/2016	Order by Hon. Vince Chhabria granting 492 Joint Scheduling Order.(knm, COURT STAFF) (Filed on 10/13/2016) (Entered:	

#	Date	Proceeding Text	Source
		10/13/2016)	
	10/13/2016	Set Deadlines/Hearings: Final Pretrial Conference set for 3/20/2017 01:30 PM in Courtroom 4, 17th Floor, San Francisco. Jury Selection set for 4/12/2017 08:30 AM in Courtroom 4, 17th Floor, San Francisco before Hon. Vince Chhabria. Jury Trial set for 4/17/2017 08:30 AM in Courtroom 4, 17th Floor, San Francisco before Hon. Vince Chhabria. (knm, COURT STAFF) (Filed on 10/13/2016) (Entered: 10/13/2016)	
498	10/20/2016	TRANSCRIPT ORDER for proceedings held on August 5, 2014 before Hon. Vince Chhabria by Unwired Planet, LLC, for Court Reporter FTR - San Francisco. (Estremera, Jennifer) (Filed on 10/20/2016) (Entered: 10/20/2016)	
499	10/27/2016	Transcript of Proceedings held on 08/05/2014, before Judge Vince Chhabria. Court Reporter/Transcriber Leo T. Mankiewicz, CSR, RMR, CRR, telephone number (415) 722-7045; email: leomank@gmail.com. FTR 9:01 a.m - 10:27 a.m., 10:48 a.m. - 11:41 a.m. and 11:47 a.m. to 12:36 p.m. = 188 minutes. Per General Order No. 59 and Judicial Conference policy, this transcript may be viewed only at the Clerk's Office public terminal or may be purchased through the Court Reporter/Transcriber until the deadline for the Release of Transcript Restriction. After that date it may be obtained through PACER. Any Notice of Intent to Request Redaction, if required, is due no later than 5 business days from date of this filing. (Re 498 Transcript Order) Redaction Request due 11/17/2016. Redacted Transcript Deadline set for 11/28/2016. Release of Transcript Restriction set for 1/25/2017. (Related documents(s) 498) (Mankiewicz, Leo) (Filed on 10/27/2016) (Entered: 10/27/2016)	
500	12/01/2016	STIPULATION WITH PROPOSED ORDER Regarding Equipment and Materials for Tech Tutorial on December 5, 2016 and Hearings on December 7, 2016 filed by Unwired Planet, LLC. (Estremera, Jennifer) (Filed on 12/1/2016) (Entered: 12/01/2016)	
501	12/01/2016	NOTICE by Unwired Planet, LLC of Withdrawal of Christopher Mierzejewski for Plaintiff (Estremera, Jennifer) (Filed on 12/1/2016) (Entered: 12/01/2016)	
502	12/02/2016	Order by Hon. Vince Chhabria granting 500 Stipulation re Equipment and Materials for Tech Tutorial on December 5, 2016 and Hearing on December 7, 2016.(knmS, COURT STAFF) (Filed on 12/2/2016) (Entered: 12/02/2016)	
503	12/05/2016	Minute Entry for proceedings held before Hon. Vince Chhabria: Tutorial Hearing held on 12/5/2016.Total Time in Court 2 hours 13 minutes. Hearing not reported or recorded. Plaintiff Attorney Ted Stevenson, John Campbell, Mitchell Sibley, Kat Li, Jennifer Estremera. Defendant Attorney Ernest Hsin, Mark Lyon, Stuart Rosenberg, Brooke Wallace. This is a text only Minute Entry (knm, COURT STAFF) (Date Filed: 12/5/2016) (Entered: 12/06/2016)	
504	12/07/2016	Minute Entry for proceedings held before Hon. Vince Chhabria: Motion Hearing held on 12/7/2016. 2 page letter briefs from the parties will be due on 12/9/2016 by 5:00 p.m. re questions talked about in court. Motion Hearing set for 12/8/2016 10:00 AM in Courtroom 4, 17th Floor, San Francisco before Hon. Vince Chhabria.FTR Time 9:35-11:03, 11:16-12:19, 1:17-2:28, 2:40-3:28. Plaintiff Attorney Ted Stevenson, John Campbell, Kat Li, and Jennifer Estremera. Defendant Attorney Ernest Hsin, Mark Lyon, Stuart Rosenberg, and Brooke Myers Wallace. This is a text only Minute Entry (knm, COURT STAFF) (Date Filed: 12/7/2016) Modified on 12/12/2016: Matter transcribed by Kelly Polvi. (rjdS, COURT STAFF). (Entered: 12/07/2016)	
505	12/08/2016	Minute Entry for proceedings held before Hon. Vince Chhabria:	

#	Date	Proceeding Text	Source
		Motion Hearing re Motions in Limine, Daubert, and Summary Judgment held on 12/8/2016. Plaintiff submits the following exhibits for the Court's consideration: Supplemental Exhibit #2 re: Motion to Exclude Experts (under seal document), and Supplemental Exhibit #3 re: Motion to Exclude Experts (under seal document). Both Supplemental Exhibits are admitted by the Court. The parties are ordered to provide supplemental briefing re various damages topics as discussed in court. Defendant's 15 page brief is due 12/16/2016. Plaintiff's 15 page brief is due 12/23/2016. FTR Time 10:05-11:34 and 11:49-12:45. Plaintiff Attorney Ted Stevenson and John Campbell. Defendant Attorney Ernest Hsin, Mark Lyon, Stuart Rosenberg, and Brooke Myers Wallace. This is a text only Minute Entry (knm, COURT STAFF) (Date Filed: 12/8/2016) Modified on 12/12/2016: Matter transcribed by Kelly Polvi. (rjdS, COURT STAFF). (Entered: 12/09/2016)	
506	12/09/2016	Letter Brief regarding applicability of 287(a) filed byApple Inc. (Kogan, Christina) (Filed on 12/9/2016) (Entered: 12/09/2016)	
507	12/09/2016	Letter Brief addessing applicability of 35 U.S.C. § 287(a) filed byUnwired Planet, LLC. (Li, Kathy) (Filed on 12/9/2016) (Entered: 12/09/2016)	
508	12/12/2016	TRANSCRIPT ORDER for proceedings held on December 7-8, 2016 before Hon. Vince Chhabria by Unwired Planet, LLC, for Court Reporter FTR - San Francisco. (Li, Kathy) (Filed on 12/12/2016) (Entered: 12/12/2016)	
509	12/12/2016	ORDER RE SUPPLEMENTAL AUTHORITIES. Signed by Judge Vince Chhabria on 12/12/2016. (knm, COURT STAFF) (Filed on 12/12/2016) (Entered: 12/12/2016)	
510	12/14/2016	TRANSCRIPT ORDER for proceedings held on December 7-8, 2016 before Hon. Vince Chhabria by Apple Inc, for Court Reporter FTR - San Francisco. (Wallace, Brooke) (Filed on 12/14/2016) (Entered: 12/14/2016)	
511	12/16/2016	Letter Brief re 509 Order for Supplemental Authorities filed byApple Inc. (Related document(s) 509) (Wallace, Brooke) (Filed on 12/16/2016) (Entered: 12/16/2016)	
512	12/16/2016	Administrative Motion to File Under Seal Apple's Supplemental Briefing ISO Apple's Daubert Motion filed by Apple Inc. (Attachments: # 1 Declaration of B. Wallace, # 2 Proposed Order, # 3 Redacted Version of Supplemental Brief ISO Apple's Daubert, # 4 Confidential Version of Supplemental Brief ISO Apple's Daubert, # 5 Exhibit G, # 6 Exhibit H)(Wallace, Brooke) (Filed on 12/16/2016) (Entered: 12/16/2016)	
513	12/16/2016	Supplemental Brief re 333 Reply to Opposition/Response, Supplemental Brief ISO Apple's Daubert filed byApple Inc. (Attachments: # 1 Declaration of B. Wallace, # 2 Exhibit A, # 3 Exhibit B, # 4 Exhibit C, # 5 Exhibit D, # 6 Exhibit E, # 7 Exhibit F, # 8 Exhibit G, # 9 Exhibit H)(Related document(s) 333) (Wallace, Brooke) (Filed on 12/16/2016) (Entered: 12/16/2016)	
514	12/22/2016	TRANSCRIPT OF PROCEEDINGS OF THE OFFICIAL ELECTRONIC SOUND RECORDING - FTR Time 9:35-11:03, 11:16-12:19, 1:17-2:28, 2:40-3:28 held on 12/07/2016, before Judge Vince Chhabria. Transcriber Kelly L. Polvi, telephone number 503.779.7406; kpolvi@comcast.net. Tape Number: FTR Time 9:35-11:03, 11:16-12:19, 1:17-2:28, 2:40-3:28. Per General Order No. 59 and Judicial Conference policy, this transcript may be viewed only at the Clerk's Office public terminal or may be purchased through the Court Reporter/Transcriber until the deadline for the Release of Transcript Restriction. After that date it may be obtained through PACER. Any Notice of Intent to Request	

#	Date	Proceeding Text	Source
		Redaction, if required, is due no later than 5 business days from date of this filing. (Re 510 Transcript Order, 508 Transcript Order) Release of Transcript Restriction set for 3/22/2017. (Related documents(s) 510 , 508) (Polvi, Kelly) (Filed on 12/22/2016) (Entered: 12/22/2016)	
515	12/22/2016	TRANSCRIPT OF PROCEEDINGS OF THE OFFICIAL ELECTRONIC SOUND RECORDING FTR Time 10:05-11:34 and 11:49-12:45 held on 12/08/2016, before Judge Vince Chhabria. Transcriber Kelly L. Polvi, telephone number 503.779.7406; kpolvi@comcast.net. Tape Number: FTR Time 10:05-11:34 and 11:49-12:45. Per General Order No. 59 and Judicial Conference policy, this transcript may be viewed only at the Clerk's Office public terminal or may be purchased through the Court Reporter/Transcriber until the deadline for the Release of Transcript Restriction. After that date it may be obtained through PACER. Any Notice of Intent to Request Redaction, if required, is due no later than 5 business days from date of this filing. (Re 510 Transcript Order, 508 Transcript Order) Release of Transcript Restriction set for 3/22/2017. (Related documents(s) 510 , 508) (Polvi, Kelly) (Filed on 12/22/2016) (Entered: 12/22/2016)	
516	12/23/2016	ORDER re 512 Administrative Motion to File Under Seal Apple's Supplemental Briefing ISO Apple's Daubert Motion filed by Apple Inc. Signed by Judge Vince Chhabria on 12/23/2016. (knm, COURT STAFF) (Filed on 12/23/2016) (Entered: 12/23/2016)	
517	12/23/2016	CERTIFICATE OF SERVICE by Apple Inc pursuant to Order at D.I. 516 (Wallace, Brooke) (Filed on 12/23/2016) (Entered: 12/23/2016)	
518	12/23/2016	Administrative Motion to File Under Seal Unwired Planet's Supplemental Survey Briefing in Support of Opposition to Apple's Daubert Motion (DI 357-4) filed by Unwired Planet, LLC. (Attachments: # 1 Declaration of Kathy Li, # 2 Proposed Order, # 3 Redacted Version of Unwired Planet's Supplemental Survey Briefing in Support of Opposition to Apple's Daubert Motion (DI 357-4), # 4 Confidential Version of Unwired Planet's Supplemental Survey Briefing in Support of Opposition to Apple's Daubert Motion (DI 357-4))(Campbell, John) (Filed on 12/23/2016) (Entered: 12/23/2016)	
519	12/23/2016	Supplemental Brief in Support of Unwired Planet's Opposition to Apple's Daubert Motion [DI 357-4] filed byUnwired Planet, LLC. (Attachments: # 1 Declaration of Kathy Li, # 2 Exhibit 1, # 3 Exhibit 2, # 4 Exhibit 3, # 5 Exhibit 4)(Campbell, John) (Filed on 12/23/2016) (Entered: 12/23/2016)	
520	12/23/2016	Declaration of Kathy Li in Support of 512 Administrative Motion to File Under Seal Apple's Supplemental Briefing ISO Apple's Daubert Motion filed byUnwired Planet, LLC. (Related document(s) 512) (Li, Kathy) (Filed on 12/23/2016) (Entered: 12/23/2016)	
521	01/05/2017	CLERK'S NOTICE RESCHEDULING THE PRETRIAL CONFERENCE. Pretrial Conference set for 3/22/2017 10:30 AM in Courtroom 4, 17th Floor, San Francisco before Hon. Vince Chhabria. (This is a text-only entry generated by the court. There is no document associated with this entry.) (knm, COURT STAFF) (Filed on 1/5/2017) (Entered: 01/05/2017)	
522	01/18/2017	Order by Hon. Vince Chhabria granting 518 Administrative Motion to File Under Seal.(knm, COURT STAFF) (Filed on 1/18/2017) (Entered: 01/18/2017)	
523	01/18/2017	Order by Hon. Vince Chhabria granting in part and denying in part 512 Administrative Motion to File Under Seal.(knm, COURT STAFF) (Filed on 1/18/2017) (Entered: 01/18/2017)	

#	Date	Proceeding Text	Source
524	01/18/2017	Supplemental Brief in Support of Apple's Daubert Motion filed byApple Inc. (Attachments: # 1 Declaration in Support, # 2 Exhibit A, # 3 Exhibit B, # 4 Exhibit C, # 5 Exhibit D, # 6 Exhibit E, # 7 Exhibit F, # 8 Exhibit G, # 9 Exhibit H, # 10 Certificate/Proof of Service of re-filed brief pursuant to Order at D.I. 523)(Wallace, Brooke) (Filed on 1/18/2017) (Entered: 01/18/2017)	
525	01/23/2017	STIPULATION WITH PROPOSED ORDER Joint Stipulation to Amend Scheduling Order filed by Apple Inc. (Wallace, Brooke) (Filed on 1/23/2017) (Entered: 01/23/2017)	
526	01/24/2017	Order by Hon. Vince Chhabria granting 525 Joint Stipulation to Amend Scheduling Order.(knm, COURT STAFF) (Filed on 1/24/2017) (Entered: 01/24/2017)	
527	02/02/2017	Order Denying 395 Apple's Motion in Limine No. 2. Signed by Judge Chhabria on 2/2/2017. (vclc3S, COURT STAFF) (Filed on 2/2/2017) (Entered: 02/02/2017)	
528	02/14/2017	STIPULATION WITH PROPOSED ORDER Joint Stipulation to Amend Scheduling Order filed by Unwired Planet, LLC. (Li, Kathy) (Filed on 2/14/2017) (Entered: 02/14/2017)	
529	02/14/2017	Summary Judgment Order. Signed by Judge Chhabria on 2/14/2017. (vclc3S, COURT STAFF) (Filed on 2/14/2017) (Entered: 02/14/2017)	
530	02/14/2017	Order Granting in Part and Denying in Part Apple's Motion to Exclude. Signed by Judge Chhabria on 2/14/2017. (vclc3S, COURT STAFF) (Filed on 2/14/2017) (Entered: 02/14/2017)	
531	02/15/2017	Order Amending Scheduling Order by Hon. Vince Chhabria.(knm, COURT STAFF) (Filed on 2/15/2017) (Entered: 02/15/2017)	
532	02/22/2017	MOTION for Leave to File New Motions in Limine filed by Unwired Planet, LLC. (Attachments: # 1 Proposed Order)(Li, Kathy) (Filed on 2/22/2017) (Entered: 02/22/2017)	
533	02/22/2017	MOTION for Leave to File Additional Motions in Limine filed by Apple Inc. (Attachments: # 1 Proposed Order)(Kogan, Christina) (Filed on 2/22/2017) (Entered: 02/22/2017)	
534	02/24/2017	Order by Hon. Vince Chhabria granting 532 Motion for Leave to File New Motions in Limine.(knm, COURT STAFF) (Filed on 2/24/2017) (Entered: 02/24/2017)	
535	02/24/2017	Order by Hon. Vince Chhabria granting 533 Motion for Leave to File Additional Motions in Limine.(knm, COURT STAFF) (Filed on 2/24/2017) (Entered: 02/24/2017)	
536	02/24/2017	MOTION in Limine #6 to Preclude Reference to the Court's Summary Judgment or Daubert Rulings or Related Motions Practice filed by Unwired Planet, LLC. Motion Hearing set for 3/22/2017 10:30 AM in Courtroom 4, 17th Floor, San Francisco before Hon. Vince Chhabria. Responses due by 3/10/2017. Replies due by 3/17/2017. (Li, Kathy) (Filed on 2/24/2017) (Entered: 02/24/2017)	
537	02/24/2017	MOTION in Limine #7 to Preclude Reference to the Aggregate Purchase Price of Unwired Planet's Outstanding Common Shares filed by Unwired Planet, LLC. Motion Hearing set for 3/22/2017 10:30 AM in Courtroom 4, 17th Floor, San Francisco before Hon. Vince Chhabria. Responses due by 3/10/2017. Replies due by 3/17/2017. (Li, Kathy) (Filed on 2/24/2017) (Entered: 02/24/2017)	
538	02/24/2017	MOTION in Limine #6 to Exclude Improper Evidence re Apple's Alleged Intent to Infringe filed by Apple Inc. Motion Hearing set for 3/22/2017 10:30 AM in Courtroom 4, 17th Floor, San Francisco before Hon. Vince Chhabria. Responses due by 3/10/2017. Replies due by 3/17/2017. (Attachments: # 1 Proposed Order)(Kogan, Christina) (Filed on 2/24/2017) (Entered: 02/24/2017)	

#	Date	Proceeding Text	Source
539	02/24/2017	Administrative Motion to File Under Seal Apple's MIL #7 filed by Apple Inc. (Attachments: # 1 Declaration, # 2 Proposed Order, # 3 Redacted Version of MIL #7, # 4 Unredacted Version of MIL #7)(Kogan, Christina) (Filed on 2/24/2017) (Entered: 02/24/2017)	
540	02/24/2017	MOTION in Limine #7 to Exclude Evidence of Damages Related to Unaccused Products filed by Apple Inc. Motion Hearing set for 3/22/2017 10:30 AM in Courtroom 4, 17th Floor, San Francisco before Hon. Vince Chhabria. Responses due by 3/10/2017. Replies due by 3/17/2017. (Attachments: # 1 Proposed Order)(Kogan, Christina) (Filed on 2/24/2017) (Entered: 02/24/2017)	
541	02/24/2017	Administrative Motion to File Under Seal Apple's MIL #8 filed by Apple Inc. (Attachments: # 1 Declaration, # 2 Proposed Order, # 3 Redacted Version of MIL #8, # 4 Unredacted Version of MIL #8)(Kogan, Christina) (Filed on 2/24/2017) (Entered: 02/24/2017)	
542	02/24/2017	MOTION in Limine #8 to Exclude New Damages Theories filed by Apple Inc. Motion Hearing set for 3/22/2017 10:30 AM in Courtroom 4, 17th Floor, San Francisco before Hon. Vince Chhabria. Responses due by 3/10/2017. Replies due by 3/17/2017. (Attachments: # 1 Proposed Order)(Kogan, Christina) (Filed on 2/24/2017) (Entered: 02/24/2017)	
543	02/24/2017	Proposed Order re 541 Administrative Motion to File Under Seal Apple's MIL #8 by Apple Inc. (Kogan, Christina) (Filed on 2/24/2017) (Entered: 02/24/2017)	
544	02/27/2017	MOTION for Leave to File Apple's Motion for Reconsideration filed by Apple Inc. (Attachments: # 1 Apple's Motion for Reconsideration, # 2 Declaration of Christina Kogan, # 3 Exhibit 1, # 4 Proposed Order)(Kogan, Christina) (Filed on 2/27/2017) (Entered: 02/27/2017)	
545	02/28/2017	Notice of Withdrawal of Motion Apple's Notice Withdrawing Administrative Motions to File Documents Under Seal (Kogan, Christina) (Filed on 2/28/2017) (Entered: 02/28/2017)	
546	02/28/2017	MOTION in Limine Apple's Motion In Limine No. 7 to Exclude Evidence of Damages Relating to Unaccused Products filed by Apple Inc. Motion Hearing set for 3/22/2017 10:30 AM in Courtroom 4, 17th Floor, San Francisco before Hon. Vince Chhabria. Responses due by 3/10/2017. Replies due by 3/17/2017. (Attachments: # 1 Proposed Order)(Kogan, Christina) (Filed on 2/28/2017) (Entered: 02/28/2017)	
547	02/28/2017	MOTION in Limine Apple's Motion In Limine No. 8 to Exclude Unwired Planet's New Damages Theories Profferred Upon Exclusion of EPP filed by Apple Inc. Motion Hearing set for 3/22/2017 10:30 AM in Courtroom 4, 17th Floor, San Francisco before Hon. Vince Chhabria. Responses due by 3/10/2017. Replies due by 3/17/2017. (Attachments: # 1 Proposed Order)(Kogan, Christina) (Filed on 2/28/2017) (Entered: 02/28/2017)	
548	03/07/2017	Order by Hon. Vince Chhabria denying 544 Motion for Reconsideration.(knm, COURT STAFF) (Filed on 3/7/2017) (Entered: 03/07/2017)	
549	03/08/2017	JOINT STATEMENT of the Case by Unwired Planet LLC and Apple Inc. by Unwired Planet, LLC. (Stevenson, Theodore) (Filed on 3/8/2017) Modified on 3/8/2017 (farS, COURT STAFF). (Entered: 03/08/2017)	
550	03/08/2017	Proposed Voir Dire by Unwired Planet, LLC and Apple Inc. (Stevenson, Theodore) (Filed on 3/8/2017) (Entered: 03/08/2017)	
551	03/08/2017	Proposed Form of Verdict by Unwired Planet, LLC and Apple Inc. (Stevenson, Theodore) (Filed on 3/8/2017) (Entered: 03/08/2017)	

#	Date	Proceeding Text	Source
552	03/08/2017	Proposed Pretrial Order by Unwired Planet, LLC. (Attachments: # 1 Joint Trial Exhibit List)(Stevenson, Theodore) (Filed on 3/8/2017) (Entered: 03/08/2017)	
553	03/08/2017	Proposed Jury Instructions by Unwired Planet, LLC and Apple Inc. (Stevenson, Theodore) (Filed on 3/8/2017) (Entered: 03/08/2017)	
554	03/08/2017	TRIAL BRIEF by Unwired Planet, LLC. (Campbell, John) (Filed on 3/8/2017) (Entered: 03/08/2017)	
555	03/08/2017	TRIAL BRIEF by Apple Inc. (Wallace, Brooke) (Filed on 3/8/2017) (Entered: 03/08/2017)	
556	03/10/2017	OPPOSITION/RESPONSE (re 538 MOTION in Limine #6 to Exclude Improper Evidence re Apple's Alleged Intent to Infringe) filed byUnwired Planet, LLC. (Attachments: # 1 Proposed Order)(Campbell, John) (Filed on 3/10/2017) (Entered: 03/10/2017)	
557	03/10/2017	Administrative Motion to File Under Seal Unwired Planet's Response to Apple's MIL #7 filed by Unwired Planet, LLC. (Attachments: # 1 Declaration, # 2 Proposed Order, # 3 Redacted Version of Response to MIL #7, # 4 Unredacted Version of Response to MIL #7, # 5 Redacted Exhibit 1, # 6 Unredacted Exhibit 1, # 7 Redacted Exhibit 2, # 8 Unredacted Exhibit 2)(Campbell, John) (Filed on 3/10/2017) (Entered: 03/10/2017)	
558	03/10/2017	Proposed Order re 557 Administrative Motion to File Under Seal Unwired Planet's Response to Apple's MIL #7 by Unwired Planet, LLC. (Campbell, John) (Filed on 3/10/2017) (Entered: 03/10/2017)	
559	03/10/2017	OPPOSITION/RESPONSE (re 546 MOTION in Limine Apple's Motion In Limine No. 7 to Exclude Evidence of Damages Relating to Unaccused Products) filed byUnwired Planet, LLC. (Attachments: # 1 Exhibit 1, # 2 Exhibit 2, # 3 Proposed Order)(Campbell, John) (Filed on 3/10/2017) (Entered: 03/10/2017)	
560	03/10/2017	Administrative Motion to File Under Seal Unwired Planet's Response to Apple's MIL #8 filed by Unwired Planet, LLC. (Attachments: # 1 Declaration, # 2 Proposed Order, # 3 Redacted Response to MIL #8, # 4 Unredacted Response to MIL #8, # 5 Redacted Exhibit 1, # 6 Unredacted Exhibit 1)(Campbell, John) (Filed on 3/10/2017) (Entered: 03/10/2017)	
561	03/10/2017	OPPOSITION/RESPONSE (re 547 MOTION in Limine Apple's Motion In Limine No. 8 to Exclude Unwired Planet's New Damages Theories Profferred Upon Exclusion of EPP) filed byUnwired Planet, LLC. (Attachments: # 1 Exhibit 1, # 2 Proposed Order)(Campbell, John) (Filed on 3/10/2017) (Entered: 03/10/2017)	
562	03/10/2017	OPPOSITION/RESPONSE (re 536 MOTION in Limine #6 to Preclude Reference to the Court's Summary Judgment or Daubert Rulings or Related Motions Practice) filed byApple Inc. (Wallace, Brooke) (Filed on 3/10/2017) (Entered: 03/10/2017)	
563	03/10/2017	Administrative Motion to File Under Seal Apple's Opposition to MIL #7 filed by Apple Inc. (Attachments: # 1 Declaration, # 2 Proposed Order, # 3 Redacted version of Opposition to MIL #7, # 4 Unredacted version of Opposition to MIL #7, # 5 Redacted Exhibit A, # 6 Unredacted Exhibit A, # 7 Redacted Exhibit B, # 8 Unredacted Exhibit B, # 9 Redacted Exhibit C, # 10 Unredacted Exhibit C)(Wallace, Brooke) (Filed on 3/10/2017) (Entered: 03/10/2017)	
564	03/10/2017	OPPOSITION/RESPONSE (re 537 MOTION in Limine #7 to Preclude Reference to the Aggregate Purchase Price of Unwired Planet's Outstanding Common Shares) filed byApple Inc. (Attachments: # 1 Declaration of Brooke Wallace, # 2 Exhibit A, # 3 Exhibit B, # 4 Exhibit C)(Wallace, Brooke) (Filed on 3/10/2017)	

#	Date	Proceeding Text	Source
		(Entered: 03/10/2017)	
565	03/11/2017	Declaration of Mitchell Sibley in Support of 559 Opposition/Response to Motion, in Limine #7 to Exclude Evidence of Damages Related to Unaccused Products filed byUnwired Planet, LLC. (Related document(s) 559) (Sibley, Mitchell) (Filed on 3/11/2017) (Entered: 03/11/2017)	
566	03/11/2017	Declaration of Mitchell Sibley in Support of 561 Opposition/Response to Motion, In Limine No. 8 to Exclude Unwired Planet's New Damages Theories Profferred Upon Exclusion of EPP filed byUnwired Planet, LLC. (Related document(s) 561) (Sibley, Mitchell) (Filed on 3/11/2017) (Entered: 03/11/2017)	
567	03/14/2017	NOTICE by Unwired Planet, LLC of Objection to Apple Inc.'s 35 U.S.C. § 101 Defense (Campbell, John) (Filed on 3/14/2017) (Entered: 03/14/2017)	
568	03/15/2017	NOTICE by Apple Inc Pursuant to 35 U.S.C. § 282 (Kogan, Christina) (Filed on 3/15/2017) (Entered: 03/15/2017)	
569	03/16/2017	ADMINISTRATIVE MOTION Unopposed Motion for Leave to Substitute Expert Witness filed by Apple Inc. Responses due by 3/20/2017. (Attachments: # 1 Proposed Order)(Kogan, Christina) (Filed on 3/16/2017) (Entered: 03/16/2017)	
570	03/17/2017	CLERK'S NOTICE RESCHEDULING THE PRETRIAL CONFERENCE AND HEARING RE MOTIONS IN LIMINE. Final Pretrial Conference and Motions in Limine Hearing set for 4/5/2017 10:00 AM in Courtroom 4, 17th Floor, San Francisco before Hon. Vince Chhabria. (This is a text-only entry generated by the court. There is no document associated with this entry.) (knm, COURT STAFF) (Filed on 3/17/2017) (Entered: 03/17/2017)	
571	03/20/2017	MOTION for leave to appear in Pro Hac Vice (Filing fee $ 310, receipt number 0971-11244538.) filed by Unwired Planet, LLC. (Lipschitz, Warren) (Filed on 3/20/2017) (Entered: 03/20/2017)	
572	03/20/2017	Order by Hon. Vince Chhabria granting 569 Unopposed Motion for Leave to Substitute Expert Witness.(knm, COURT STAFF) (Filed on 3/20/2017) (Entered: 03/20/2017)	
573	03/20/2017	Order by Hon. Vince Chhabria granting 571 Motion for Pro Hac Vice - Lipschitz.(knm, COURT STAFF) (Filed on 3/20/2017) (Entered: 03/20/2017)	
574	03/20/2017	MOTION for Leave to File Motion to Compel filed by Apple Inc. (Attachments: # 1 Motion to Compel, # 2 Declaration of Christina Kogan, # 3 Proposed Order, # 4 Exhibit 1, # 5 Exhibit 2, # 6 Exhibit 3, # 7 Exhibit 4, # 8 Exhibit 5, # 9 Exhibit 6, # 10 Exhibit 7, # 11 Exhibit 8, # 12 Exhibit 9, # 13 Exhibit 10, # 14 Exhibit 11)(Kogan, Christina) (Filed on 3/20/2017) (Entered: 03/20/2017)	
575	03/22/2017	Order by Hon. Vince Chhabria granting 574 Apple's Motion for Leave to File Motion to Compel and Shorten Time Pursuant to Civil Local Rule 6-3.(knm, COURT STAFF) (Filed on 3/22/2017) (Entered: 03/22/2017)	
576	03/23/2017	Witness List by Unwired Planet, LLC - Amended. (Campbell, John) (Filed on 3/23/2017) (Entered: 03/23/2017)	
577	03/27/2017	Administrative Motion to File Under Seal Unwired Planet's Response in Opposition to Motion to Compel Discovery filed by Unwired Planet, LLC. (Attachments: # 1 Declaration of Mitchell Sibley, # 2 Proposed Order, # 3 Redacted Version of Response in Opposition to Motion to Compel Discovery, # 4 Unredacted Version of Response in Opposition to Motion to Compel Discovery, # 5 Redacted Exhibit 3, # 6 Unredacted Exhibit 3, # 7 Redacted Exhibit 4, # 8 Unredacted Exhibit 4)(Campbell, John) (Filed on 3/27/2017) (Entered: 03/27/2017)	

#	Date	Proceeding Text	Source
578	03/27/2017	RESPONSE to re 575 Order on Motion for Leave to File Unwired Planet's Response in Opposition to Motion to Compel Discovery by Unwired Planet, LLC. (Attachments: # 1 Declaration of Warren Lipschitz, # 2 Exhibit 1, # 3 Exhibit 2, # 4 Exhibit 3, # 5 Exhibit 4, # 6 Declaration of Timothy Elliss, # 7 Proposed Order)(Campbell, John) (Filed on 3/27/2017) (Entered: 03/27/2017)	
579	03/28/2017	NOTICE of Appearance by Blaine H. Evanson (Evanson, Blaine) (Filed on 3/28/2017) (Entered: 03/28/2017)	
580	03/28/2017	NOTICE of Appearance by Lauren E Lennon (Lennon, Lauren) (Filed on 3/28/2017) (Entered: 03/28/2017)	
581	03/28/2017	ORDER RE MOTION TO COMPEL DISCOVERY re 578 and 574 . Signed by Judge Vince Chhabria on 3/28/2017. Apple's reply brief due no later than 3/29/2017, along with a proposed order. A hearing on the motion to compel will not be necessary.(afmS, COURT STAFF) (Filed on 3/28/2017) (Entered: 03/28/2017)	
582	03/29/2017	Administrative Motion to File Under Seal Apple's Reply to Apple's Motion to Compel filed by Apple Inc. (Attachments: # 1 Declaration ISO Motion to File Under Seal, # 2 Proposed Order ISO Motion to File Under Seal, # 3 Redacted Reply ISO Apple's Motion to Compel, # 4 Confidential Reply ISO Apple's Motion to Compel, # 5 Declaration Redacted Decl. ISO Reply to Apple's Motion to Compel, # 6 Declaration Confidential Decl. ISO Reply to Apple's Motion to Compel, # 7 Exhibit Confidential Ex. A, # 8 Exhibit Confidential Ex. B, # 9 Exhibit Confidential Ex. C, # 10 Exhibit Confidential Ex. D)(Lennon, Lauren) (Filed on 3/29/2017) (Entered: 03/29/2017)	
583	03/29/2017	REPLY (re 582 Administrative Motion to File Under Seal Apple's Reply to Apple's Motion to Compel) filed byApple Inc. (Attachments: # 1 Declaration Redacted Declaration ISO Apple's Reply to Apple's Motion to Compel, # 2 Proposed Order ISO Apple's Motion to Compel, # 3 Exhibit A - Slipsheet, # 4 Exhibit B - Slipsheet, # 5 Exhibit C - Slipsheet, # 6 Exhibit D - slipsheet)(Lennon, Lauren) (Filed on 3/29/2017) (Entered: 03/29/2017)	
584	03/29/2017	Administrative Motion to File Under Seal Apple's Motion to Exclude Miller Testimony filed by Apple Inc. (Attachments: # 1 Declaration ISO Motion to Seal, # 2 Proposed Order ISO Motion to Seal, # 3 Redacted Version of Brief ISO Apple's Motion to Exclude, # 4 Confidential Version of Brief ISO Motion to Exclude, # 5 Exhibit 1, # 6 Exhibit 4, # 7 Exhibit 6, # 8 Exhibit 7, # 9 Exhibit 8, # 10 Exhibit 9)(Lennon, Lauren) (Filed on 3/29/2017) (Entered: 03/29/2017)	
585	03/29/2017	MOTION for Leave to File Motion to Exclude Miller Testimony filed by Apple Inc. (Attachments: # 1 Proposed Order ISO Motion for Leave to File Motion to Exclude Miller Testimony, # 2 Motion and MPA ISO Motion to Exclude Miller Testimony, # 3 Declaration ISO Motion for Leave and Motion to Exclude Miller Testimony, # 4 Proposed Order ISO Motion to Exclude Miller Testimony, # 5 Exhibit 1 - slipsheet, # 6 Exhibit 2, # 7 Exhibit 3, # 8 Exhibit 4 - slipsheet, # 9 Exhibit 5, # 10 Exhibit 6 - slipsheet, # 11 Exhibit 7 - slipsheet, # 12 Exhibit 8 - slipsheet, # 13 Exhibit 9 - slipsheet)(Lennon, Lauren) (Filed on 3/29/2017) (Entered: 03/29/2017)	
586	03/30/2017	NOTICE by Apple Inc of Service of Motion to Exclude Testimony of Tom Miller, Reply in Support of Its Motion to Compel Discovery and Declaration of Lauren E. Lennon in Support of Apple Reply in Support of Its Motion to Compel (Wallace, Brooke) (Filed on 3/30/2017) (Entered: 03/30/2017)	
587	03/31/2017	Order by Hon. Vince Chhabria granting 585 Motion for Leave to	

#	Date	Proceeding Text	Source
		File Motion to Exclude and Shorten Time. Unwired's response due 4/3/2017; reply brief waived and Apple's Motion to Exclude to be heard on 4/5/2017.(afmS, COURT STAFF) (Filed on 3/31/2017) (Entered: 03/31/2017)	
588	03/31/2017	ORDER GRANTING APPLE'S 574 MOTION TO COMPEL DISCOVERY re 583 . Signed by Judge Vince Chhabria on 3/31/2017. (afmS, COURT STAFF) (Filed on 3/31/2017) (Entered: 03/31/2017)	
589	03/31/2017	TRANSCRIPT ORDER for Future Trial with Daily Transcripts by Unwired Planet, LLC. (Li, Kathy) (Filed on 3/31/2017) (Entered: 03/31/2017)	
590	04/03/2017	TRANSCRIPT ORDER for Future Trial with Daily Transcripts by Apple Inc. (Kogan, Christina) (Filed on 4/3/2017) (Entered: 04/03/2017)	
591	04/03/2017	RESPONSE to re 587 Order on Motion for Leave to File, Unwired Planet's Response in Opposition to Apple Inc.'s Motion to Exclude Testimony of Tom Miller by Unwired Planet, LLC. (Attachments: # 1 Declaration of Kathy Li, # 2 Exhibit 1, # 3 Exhibit 2, # 4 Exhibit 3, # 5 Exhibit 4, # 6 Proposed Order)(Campbell, John) (Filed on 4/3/2017) (Entered: 04/03/2017)	
592	04/03/2017	TRANSCRIPT ORDER for Future Trial with Daily Transcripts by Unwired Planet, LLC. (Li, Kathy) (Filed on 4/3/2017) (Entered: 04/03/2017)	
593	04/03/2017	Administrative Motion to File Under Seal Apple's Motion for Sanctions filed by Apple Inc. (Attachments: # 1 Declaration, # 2 Redacted version of Motion for Sanctions, # 3 Unredacted version of Motion for Sanctions, # 4 Declaration Redacted Davies Declaration, # 5 Declaration Unredacted Davies Declaration, # 6 Redacted Ex. 2, # 7 Unredacted Ex. 2, # 8 Redacted Ex. 3, # 9 Unredacted Ex. 3, # 10 Redacted Ex. 6, # 11 Unredacted Ex. 6, # 12 Redacted Ex. 7, # 13 Unredacted Ex. 7, # 14 Redacted Ex. 8, # 15 Unredacted Ex. 8, # 16 Redacted Ex. 9, # 17 Unredacted Ex. 9, # 18 Redacted Ex. 10, # 19 Unredacted Ex. 10, # 20 Redacted Ex. 11, # 21 Unredacted Ex. 11, # 22 Proposed Order)(Kogan, Christina) (Filed on 4/3/2017) (Entered: 04/03/2017)	
594	04/03/2017	MOTION for Sanctions filed by Apple Inc. Motion Hearing set for 5/11/2017 10:00 AM in Courtroom 4, 17th Floor, San Francisco before Hon. Vince Chhabria. Responses due by 4/17/2017. Replies due by 4/24/2017. (Attachments: # 1 Declaration, # 2 Exhibit 1, # 3 Exhibit 2, # 4 Exhibit 3, # 5 Exhibit 4, # 6 Exhibit 5, # 7 Exhibit 6, # 8 Exhibit 7, # 9 Exhibit 8, # 10 Exhibit 9, # 11 Exhibit 10, # 12 Exhibit 11, # 13 Proposed Order)(Kogan, Christina) (Filed on 4/3/2017) (Entered: 04/03/2017)	
595	04/03/2017	MOTION to Shorten Time for Apple's Motion for Sanctions filed by Apple Inc. (Attachments: # 1 Declaration, # 2 Proposed Order)(Kogan, Christina) (Filed on 4/3/2017) (Entered: 04/03/2017)	
596	04/04/2017	PROOF OF SERVICE of Motion for Sanctions for Violations of Rule 26(e) and Declaration of Tracey Davies in Support of Apple's Motion for Sanctions by Apple Inc (Kogan, Christina) (Filed on 4/4/2017) Modified on 4/5/2017 (farS, COURT STAFF). (Entered: 04/04/2017)	
597	04/04/2017	Emergency MOTION to Compel Reciprocal License Discovery From Apple filed by Unwired Planet, LLC. Responses due by 4/18/2017. Replies due by 4/25/2017. (Attachments: # 1 Declaration of Kathy Li, # 2 Exhibit 1, # 3 Exhibit 2, # 4 Exhibit 3, # 5 Exhibit 4, # 6 Exhibit 5, # 7 Exhibit 6, # 8 Exhibit 7, # 9 Exhibit 8, # 10 Exhibit 9, # 11 Proposed Order)(Campbell, John) (Filed on 4/4/2017) (Entered: 04/04/2017)	

#	Date	Proceeding Text	Source
598	04/04/2017	CERTIFICATE OF COMPLIANCE by Unwired Planet, LLC re 588 Order (Campbell, John) (Filed on 4/4/2017) Modified on 4/5/2017 (farS, COURT STAFF). (Entered: 04/04/2017)	
599	04/05/2017	ORDER DENYING 597 EMERGENCY MOTION TO COMPEL DISCOVERY. Signed by Judge Chhabria on 4/5/2017.(vclc3S, COURT STAFF) (Filed on 4/5/2017) (Entered: 04/05/2017)	
600	04/05/2017	Minute Entry for proceedings held before Hon. Vince Chhabria: Final Pretrial Conference held on 4/5/2017. The parties will set up technology on 4/14/2017 at 10:00 a.m. The parties will be allowed twelve hours per side for time limits. The time limit will also include opening and closing arguments. The revised proposed jury instructions should be submitted by 4/14/2017. Motions Hearing held on 4/5/2017 re: 536 , 537 , 538 , 540 , 542 , 546 , 547 . Written order to issue. Total Time in Court 3 Hours; 26 Minutes. Court Reporter: Lydia Zinn. Plaintiff Attorneys: Ted Stevenson, John Campbell, Mitchell Reed Sibley, Kat Li, Stephanie Adams Ryan, Warren Lipschitz. Defendant Attorneys: Yu-Chieh Ernest Hsin, H. Mark Lyon, Stuart M. Rosenberg, Brooke Myers Wallace, Tracey Davies, Marc Breverman. This is a text-only Minute Entry. There is no pdf image associated with this entry. (afmS, COURT STAFF) (Date Filed: 4/5/2017) (Entered: 04/05/2017)	
601	04/05/2017	TRANSCRIPT ORDER for proceedings held on April 5, 2017 before Hon. Vince Chhabria by Unwired Planet, LLC, for Court Reporter Lydia Zinn. (Li, Kathy) (Filed on 4/5/2017) (Entered: 04/05/2017)	
602	04/05/2017	TRANSCRIPT ORDER for proceedings held on 04/05/2017 before Hon. Vince Chhabria by Apple Inc, for Court Reporter Lydia Zinn. (Wallace, Brooke) (Filed on 4/5/2017) (Entered: 04/05/2017)	
603	04/06/2017	Transcript of Proceedings, Pretrial Conference, held on 4/5/2017, before Judge Vince Chhabria. Court Reporter/Transcriber Lydia Zinn, telephone number (415) 531-6587. Per General Order No. 59 and Judicial Conference policy, this transcript may be viewed only at the Clerk's Office public terminal or may be purchased through the Court Reporter/Transcriber until the deadline for the Release of Transcript Restriction. After that date it may be obtained through PACER. Any Notice of Intent to Request Redaction, if required, is due no later than 5 business days from date of this filing. (Re 602 Transcript Order, 601 Transcript Order) Redacted Transcript Deadline set for 5/8/2017. Release of Transcript Restriction set for 7/5/2017. (Related documents(s) 602 , 601) (Zinn, Lydia) (Filed on 4/6/2017) (Entered: 04/06/2017)	
604	04/06/2017	MOTION for leave to appear in Pro Hac Vice (Filing fee $ 310, receipt number 0971-11294200.) filed by Apple Inc. (Rosenthal, Brett) (Filed on 4/6/2017) (Entered: 04/06/2017)	
605	04/06/2017	ORDER RE MOTIONS IN LIMINE. Signed by Judge Vince Chhabria on 4/6/2017. (knm, COURT STAFF) (Filed on 4/6/2017) (Entered: 04/06/2017)	
606	04/07/2017	STIPULATION WITH PROPOSED ORDER Regarding Equipment and Materials for Jury Selection and Trial filed by Unwired Planet, LLC. (Li, Kathy) (Filed on 4/7/2017) (Entered: 04/07/2017)	
607	04/07/2017	Order by Hon. Vince Chhabria granting 606 Motion re Equipment and Materials for Trial.(knm, COURT STAFF) (Filed on 4/7/2017) (Entered: 04/07/2017)	
608	04/08/2017	MOTION for leave to appear in Pro Hac Vice (Filing fee $ 310, receipt number 0971-11300297.) filed by Unwired Planet, LLC. (Fountain, Erik) (Filed on 4/8/2017) (Entered: 04/08/2017)	
609	04/08/2017	Administrative Motion to File Under Seal Unwired Planet's Response in Opposition to Apple's Motion for Sanctions filed by Unwired Planet, LLC. (Attachments: # 1 Declaration of Mitchell	

#	Date	Proceeding Text	Source
		Sibley, # 2 Proposed Order, # 3 Redacted Version of Unwired Planet's Response to Apple's Motion for Sanctions, # 4 Unredacted Version of Unwired Planet's Response to Apple's Motion for Sanctions, # 5 Exhibit 1 Redacted, # 6 Exhibit 1 Unredacted)(Campbell, John) (Filed on 4/8/2017) (Entered: 04/08/2017)	
610	04/08/2017	OPPOSITION/RESPONSE (re 594 MOTION for Sanctions) filed byUnwired Planet, LLC. (Attachments: # 1 Declaration of Kathy Li, # 2 Exhibit 1 Redacted, # 3 Exhibit 2, # 4 Exhibit 3, # 5 Proposed Order)(Campbell, John) (Filed on 4/8/2017) (Entered: 04/08/2017)	
611	04/10/2017	Administrative Motion to File Under Seal Apple's Reply ISO Its Motion for Sanctions filed by Apple Inc. (Attachments: # 1 Declaration of Christina Kogan, # 2 Redacted Version of Apple's Reply ISO Motion for Sanctions, # 3 Unredacted Version of Apple's Reply ISO Motion for Sanctions, # 4 Redacted Declaration of Brooke Wallace, # 5 Unredacted Declaration of Brooke Wallace, # 6 Proposed Order)(Kogan, Christina) (Filed on 4/10/2017) (Entered: 04/10/2017)	
612	04/10/2017	REPLY (re 594 MOTION for Sanctions) filed byApple Inc. (Attachments: # 1 Declaration of Brooke Wallace)(Kogan, Christina) (Filed on 4/10/2017) (Entered: 04/10/2017)	
613	04/11/2017	Order by Hon. Vince Chhabria granting 604 Motion for Pro Hac Vice - Rosenthal.(knm, COURT STAFF) (Filed on 4/11/2017) (Entered: 04/11/2017)	
614	04/11/2017	Order by Hon. Vince Chhabria granting 608 Motion for Pro Hac Vice - Fountain.(knm, COURT STAFF) (Filed on 4/11/2017) (Entered: 04/11/2017)	
615	04/11/2017	PROOF OF SERVICE re Reply ISO Motion for Sanctions by Apple Inc (Kogan, Christina) (Filed on 4/11/2017) Modified on 4/12/2017 (farS, COURT STAFF). (Entered: 04/11/2017)	
616	04/12/2017	ORDER RE JURY REFRESHMENTS. Signed by Judge Vince Chhabria on 4/12/2017. (knmS, COURT STAFF) (Filed on 4/12/2017) (Entered: 04/12/2017)	
	04/12/2017	Set Hearing: Jury Trial set for 4/18/2017 08:30 AM in Courtroom 4, 17th Floor, San Francisco before Hon. Vince Chhabria. Jury Trial set for 4/19/2017 08:30 AM in Courtroom 4, 17th Floor, San Francisco before Hon. Vince Chhabria. Jury Trial set for 4/21/2017 08:30 AM in Courtroom 4, 17th Floor, San Francisco before Hon. Vince Chhabria. Jury Trial set for 4/24/2017 08:30 AM in Courtroom 4, 17th Floor, San Francisco before Hon. Vince Chhabria. Jury Trial set for 4/25/2017 08:30 AM in Courtroom 4, 17th Floor, San Francisco before Hon. Vince Chhabria. Jury Trial set for 4/26/2017 08:30 AM in Courtroom 4, 17th Floor, San Francisco before Hon. Vince Chhabria. (knm, COURT STAFF) (Filed on 4/12/2017) (Entered: 04/12/2017)	
617	04/12/2017	Minute Entry for proceedings held before Hon. Vince Chhabria: Jury Selection held on 4/12/2017.Total Time in Court 3 hours and 40 minutes. Court Reporter Name: Lydia Zinn. Attachment: Minute Order. (Attachments: # 1 Trial Log - Jury Selection)(knm, COURT STAFF) (Date Filed: 4/12/2017) (Entered: 04/12/2017)	
618	04/12/2017	*** SEE CORRECTED TRANSCRIPT AT 621 . *** Transcript of Proceedings, Trial Transcript Volume 1, held on 4/12/2017, before Judge Vince Chhabria. Court Reporter/Transcriber Lydia Zinn and Pamela Batalo, telephone number (415) 531-6587. Per General Order No. 59 and Judicial Conference policy, this transcript may be viewed only at the Clerk's Office public terminal or may be purchased through the Court Reporter/Transcriber until the deadline for the Release of Transcript Restriction. After that date it may be obtained through PACER. Any Notice of Intent to Request	

#	Date	Proceeding Text	Source
		Redaction, if required, is due no later than 5 business days from date of this filing. (Re 590 Transcript Order - Future Trial with Daily Transcripts, 592 Transcript Order - Future Trial with Daily Transcripts) Redacted Transcript Deadline set for 5/15/2017. Release of Transcript Restriction set for 7/11/2017. (Related documents(s) 590 , 592) (Zinn, Lydia) (Filed on 4/12/2017) Modified on 4/13/2017 (fff, COURT STAFF). (Entered: 04/12/2017)	
619	04/12/2017	NOTICE by Apple Inc Joint Discovery and Deposition Designations (Kogan, Christina) (Filed on 4/12/2017) (Entered: 04/12/2017)	
620	04/12/2017	NOTICE by Unwired Planet, LLC of Joint Notice of Lodging Discovery Responses and Deposition Excerpts (Adams Ryan, Stephanie) (Filed on 4/12/2017) (Entered: 04/12/2017)	
621	04/13/2017	Amended Transcript of Proceedings, Trial Transcript Volume 1, held on 4/12/2017, before Judge Vince Chhabria. Court Reporter/Transcriber Lydia Zinn, telephone number (415) 531-6587. Per General Order No. 59 and Judicial Conference policy, this transcript may be viewed only at the Clerk's Office public terminal or may be purchased through the Court Reporter/Transcriber until the deadline for the Release of Transcript Restriction. After that date it may be obtained through PACER. Any Notice of Intent to Request Redaction, if required, is due no later than 5 business days from date of this filing. (Re 590 Transcript Order - Future Trial with Daily Transcripts, 592 Transcript Order - Future Trial with Daily Transcripts) Redacted Transcript Deadline set for 5/15/2017. Release of Transcript Restriction set for 7/12/2017. (Related documents(s) 590 , 592) (Zinn, Lydia) (Filed on 4/13/2017) (Entered: 04/13/2017)	
622	04/14/2017	Supplemental Brief re 612 Reply to Opposition/Response Supplemental Reply to Apple's Motion for Sanctions filed byApple Inc. (Related document(s) 612) (Lennon, Lauren) (Filed on 4/14/2017) (Entered: 04/14/2017)	
623	04/14/2017	STIPULATION WITH PROPOSED ORDER for Extension of Time to Submit Revised Jury Instructions filed by Apple Inc. (Attachments: # 1 Declaration, # 2 Proposed Order)(Wallace, Brooke) (Filed on 4/14/2017) (Entered: 04/14/2017)	
624	04/14/2017	Administrative Motion to File Under Seal filed by Apple Inc. (Attachments: # 1 Declaration of Lauren Lennon, # 2 Redacted version of Exhibit A, # 3 Unredacted version of Exhibit A, # 4 Proposed Order)(Lennon, Lauren) (Filed on 4/14/2017) (Entered: 04/14/2017)	
625	04/14/2017	Declaration of Lauren Lennon in Support of 622 Apple's Supplemental Reply to Apple's Motion for Sanctions filed byApple Inc. (Attachments: # 1 Redacted Version of Exhibit A)(Lennon, Lauren) (Filed on 4/14/2017) (Entered: 04/14/2017)	
626	04/14/2017	Exhibit List (supplemental) by Apple Inc.. (Kogan, Christina) (Filed on 4/14/2017) (Entered: 04/14/2017)	
627	04/15/2017	ORDER GRANTING 594 MOTION FOR SANCTIONS. Signed by Judge Vince Chhabria 4/15/2017. (vclc3S, COURT STAFF) (Filed on 4/15/2017) (Entered: 04/15/2017)	
628	04/15/2017	ORDER GRANTING 623 STIPULATION TO EXTEND TIME. Signed by Judge Vince Chhabria on 4/15/2017. (vclc3S, COURT STAFF) (Filed on 4/15/2017) (Entered: 04/15/2017)	
629	04/16/2017	STIPULATION WITH PROPOSED ORDER regarding Authenticity of Documents filed by Apple Inc. (Kogan, Christina) (Filed on 4/16/2017) (Entered: 04/16/2017)	
630	04/16/2017	Administrative Motion to File Under Seal Unwired Planet's Response in Opposition to Apple's Supplemental Reply to Motion	

#	Date	Proceeding Text	Source
		for Sanctions filed by Unwired Planet, LLC. (Attachments: # 1 Declaration of Mitchell Sibley, # 2 Proposed Order, # 3 Redacted Version of Unwired Planet's Response in Opposition to Apple's Supplemental Reply to Motion for Sanctions, # 4 Unredacted Version of Unwired Planet's Response in Opposition to Apple's Supplemental Reply to Motion for Sanctions, # 5 Redacted Exhibit 1, # 6 Unredacted Exhibit 1)(Campbell, John) (Filed on 4/16/2017) (Entered: 04/16/2017)	
631	04/16/2017	OPPOSITION/RESPONSE (re 593 Administrative Motion to File Under Seal Apple's Motion for Sanctions) Unwired Planet's Response in Opposition to Apple's Supplemental Reply to Motion for Sanctions filed byUnwired Planet, LLC. (Attachments: # 1 Declaration of Mitchell Sibley, # 2 Exhibit 1)(Campbell, John) (Filed on 4/16/2017) (Entered: 04/16/2017)	
632	04/16/2017	ORDER GRANTING 629 STIPULATION RE AUTHENTICITY OF DOCUMENTS. Signed by Judge Vince Chhabria on 4/16/2017. (vclc3S, COURT STAFF) (Filed on 4/16/2017) (Entered: 04/16/2017)	
633	04/16/2017	Proposed Jury Instructions by Unwired Planet, LLC Revised Joint Proposed Jury Instructions. (Adams Ryan, Stephanie) (Filed on 4/16/2017) (Entered: 04/16/2017)	
	04/17/2017	*trial dates vacated. (tfS, COURT STAFF) (Filed on 4/17/2017) (Entered: 04/17/2017)	
634	04/17/2017	Minute Entry for proceedings held before Hon. Vince Chhabria: The parties reached a settlement and will be filing a stipulation of dismissal. Jury panel excused. Status Conference held on 4/17/2017.Total Time in Court 08 minutes. Court Reporter Name Pam Batalo. (Attachments: # 1 Appendix Clerk's Trial Worksheet)(tfS, COURT STAFF) (Date Filed: 4/17/2017) (Entered: 04/17/2017)	
635	04/17/2017	Joint MOTION to Dismiss filed by Unwired Planet, LLC. Responses due by 5/1/2017. Replies due by 5/8/2017. (Attachments: # 1 Proposed Order)(Stevenson, Theodore) (Filed on 4/17/2017) (Entered: 04/17/2017)	
636	04/18/2017	ORDER RE PENDING MOTIONS TO FILE UNDER SEAL, by Judge Vince Chhabria. (knm, COURT STAFF) (Filed on 4/18/2017) (Entered: 04/18/2017)	
637	04/20/2017	Declaration of Kathy Li in Support of 563 Administrative Motion to File Under Seal Apple's Opposition to MIL #7 filed byUnwired Planet, LLC. (Related document(s) 563) (Li, Kathy) (Filed on 4/20/2017) (Entered: 04/20/2017)	
638	04/21/2017	ORDER GRANTING IN PART MOTION TO FILE UNDER SEAL. Signed by Judge Chhabria on 4/21/2017. (vclc3S, COURT STAFF) (Filed on 4/21/2017) (Entered: 04/21/2017)	
639	04/24/2017	OPPOSITION/RESPONSE (re 563 Administrative Motion to File Under Seal Apple's Opposition to MIL #7) Apple's Opposition to UP's MIL #7, re-filed pursuant to Order Dkt. No. 638 filed byApple Inc. (Attachments: # 1 Exhibit A, # 2 Exhibit B, # 3 Exhibit C)(Kogan, Christina) (Filed on 4/24/2017) (Entered: 04/24/2017)	
640	04/25/2017	Order by Hon. Vince Chhabria granting 635 Joint Motion to Dismiss.(knm, COURT STAFF) (Filed on 4/25/2017) (Entered: 04/25/2017)	
	04/27/2017	Report on the determination of action mailed to Patent Office. (farS, COURT STAFF) (Filed on 4/27/2017) (Entered: 04/27/2017)	
641	05/08/2017	Administrative Motion to File Under Seal filed by Unwired Planet, LLC. (Attachments: # 1 Declaration of Mitchell Sibley, # 2 Proposed Order Granting Unwired Plantet's Motion to File Documents Under Seal, # 3 REDACTED Version of Transcript, # 4 UNREDACTED Version of Trascript)(Campbell, John) (Filed on	

#	Date	Proceeding Text	Source
		5/8/2017) (Entered: 05/08/2017)	
642	05/08/2017	ADMINISTRATIVE MOTION re 603 Transcript,,, filed by Unwired Planet, LLC. Responses due by 5/12/2017. (Attachments: # 1 Proposed Order Granting Unwired Planet's Administrative Motion Requesting Redaction of Pretrial Conference Transcript)(Campbell, John) (Filed on 5/8/2017) (Entered: 05/08/2017)	
643	05/31/2017	Order by Hon. Vince Chhabria granting 641 Administrative Motion to File Under Seal Portions of the Pretrial Conference Transcript.(knm, COURT STAFF) (Filed on 5/31/2017) (Entered: 05/31/2017)	
644	05/31/2017	***PLEASE DISREGARD; SEE DKT. NO. 645 FOR SIGNED ORDER. Order by Hon. Vince Chhabria granting 642 Administrative Motion Requesting Redaction of Pretrial Conference Transcript.(knm, COURT STAFF) (Filed on 5/31/2017) Modified on 5/31/2017 (knm, COURT STAFF). (Entered: 05/31/2017)	
645	05/31/2017	ORDER correcting order re 644 Order on Administrative Motion per Civil Local Rule 7-11. Signed by Judge Vince Chhabria on 5/31/2017. (knm, COURT STAFF) (Filed on 5/31/2017) (Entered: 05/31/2017)	
646	06/09/2017	Redaction of 603 Transcript,,, (Related documents(s) 603) (Zinn, Lydia) (Filed on 6/9/2017) (Entered: 06/09/2017)	

Patents

Number	Title	Issued	Class	Subclass
6,317,594	System and method for providing data to a wireless device upon detection of activity of the device on a wireless network	11/13/2001	455	414.1
6,317,831	Method and apparatus for establishing a secure connection over a one-way data path	11/13/2001	713	171
6,321,092	Multiple input data management for wireless location-based applications	11/20/2001	455	456.5
6,532,446	Server based speech recognition user interface for wireless devices	03/11/2003	704	270.1
6,647,260	Method and system facilitating web based provisioning of two-way mobile communications devices	11/11/2003	455	419
6,813,491	Method and apparatus for adapting settings of wireless communication devices in accordance with user proximity	11/02/2004	455	414.1
7,020,685	Method and apparatus for providing internet content to SMS-based wireless devices	03/28/2006	709	204
7,233,790	Device capability based discovery, packaging and provisioning of content for wireless mobile devices	06/19/2007	455	419
7,299,033	Domain-based management of distribution of digital content from multiple suppliers to multiple wireless services subscribers	11/20/2007	455	414.1
7,522,927	Interface for wireless location information	04/21/2009	455	456.2

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End of Document

Litigation Search Report CRU 3999

Reexamination Control No. 90/015,063

To: Examiner	From: Renee Preston
Location: CRU	Location: CRU 3999 / REM 4C75
Art Unit: 3992	Phone: (571) 272-1607
Date: 06/23/2022	E-mail: renee.preston@uspto.gov

Search Notes

U.S. Patent No. 7,233,790

1. Performed a KeyCite Search in Westlaw, which retrieves all history on the patent including any litigation.
2. Performed a search on the patent in Lexis CourtLink for any open dockets or closed cases.
3. Performed a search in Lexis in the Federal Courts and Administrative Materials databases for any cases found.
4. Performed a search in Lexis in the IP Journal and Periodicals database for any articles on the patent.
5. Performed a search in Lexis in the news databases for any articles about the patent or any articles about litigation on this patent.

Litigation: Cases Found

Status	Docket	Description
Open	1:21cv1448	Starz Entertainment, Llc V. Vl Collective Ip, Llc Et Al
Open	1:22cv229	Videolabs, Inc. Et Al V. Netflix Inc.
Closed	3:12cv505	Unwired Planet, Llc V. Apple, Inc.
Closed	3:13cv4134	Unwired Planet, Llc V. Apple, Inc.
Closed	4:13cv4134	Unwired Planet, Llc V. Apple, Inc. – 04/17/2014 CASE REASSIGNED
Closed	15-1795	Unwired Planet, LLC v. Apple Inc.
Closed	15-1725	Unwired Planet, LLC v. Apple Inc.

Paper No. 06/23/2022

Citing References (95)

Treatment	Title	Date	Type	Depth	Headnote(s)
Examined by	**1.** Answer to First Amended Complaint for Patent Infringement, Affirmative and Other Defenses, and Counterclaim UNWIRED PLANET LLC, a Nevada limited liability company, Plaintiff, v. APPLE INC., a California corporation, Defendant. 2013 WL 8350132, *1+ , N.D.Cal. (Trial Pleading)	July 15, 2013	Petition		—
Examined by	**2.** Answer to Complaint for Patent Infringement, Affirmative and Other Defenses, and Counterclaim UNWIRED PLANET LLC, a Nevada limited liability company, Plaintiff, v. APPLE INC., a California corporation, Defendant. 2012 WL 10796858, *1+ , N.D.Cal. (Trial Pleading)	Nov. 29, 2012	Petition		—
Examined by	**3.** Plaintiff's Reply to Apple Inc.'s Answer to First Amended Complaint for Patent Infringement, Affirmative and Other Defenses, and Counterclaim; (Jury D... UNWIRED PLANET LLC, a Nevada limited liability company, Plaintiff, v. APPLE INC., a California corporation, Defendant. 2013 WL 9553877, *1+ , D.Nev. (Trial Pleading)	Aug. 08, 2013	Petition		—
Examined by	**4.** Answer to First Amended Complaint for Patent Infringement, Affirmative and Other Defenses, and Counterclaim; (Jury Demand) UNWIRED PLANET LLC, a Nevada limited liability company, Plaintiff, v. APPLE INC., a California corporation, Defendant. 2013 WL 9553876, *1+ , D.Nev. (Trial Pleading)	July 15, 2013	Petition		—
Examined by	**5.** Plaintiff's Reply to Apple Inc.'s Answer to Complaint for Patent Infringement, Affirmative and Other Defenses, and Counterclaim UNWIRED PLANET LLC, a Nevada limited liability company, Plaintiff, v. APPLE INC., a California corporation, Defendant. 2012 WL 10647569, *1+ , D.Nev. (Trial Pleading)	Dec. 21, 2012	Petition		—
Examined by	**6.** Answer to Complaint for Patent Infringement, Affirmative and Other Defenses, and Counterclaim UNWIRED PLANET LLC, a Nevada limited liability company, Plaintiff, v. APPLE INC., a California corporation, Defendant. 2012 WL 10647568, *1+ , D.Nev. (Trial Pleading)	Nov. 29, 2012	Petition		—
Discussed by	**7.** Complaint for Patent Infringement UNWIRED PLANET LLC, a Nevada limited liability company, Plaintiff, v. APPLE INC., a California corporation, Defendant. 2013 WL 5352408, *1+ , N.D.Cal. (Trial Pleading)	Sep. 19, 2013	Petition		—
Discussed by	**8.** First Amended Complaint for Patent Infringement UNWIRED PLANET LLC, a Nevada limited liability company, Plaintiff, v. APPLE INC., a California corporation, Defendant. 2013 WL 8345394, *1+ , N.D.Cal. (Trial Pleading)	May 10, 2013	Petition		—

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Treatment	Title	Date	Type	Depth	Headnote(s)
Discussed by	**9.** First Amended Complaint for Patent Infringement; (Jury Demand) UNWIRED PLANET LLC, a Nevada limited liability company, Plaintiff, v. APPLE INC., a California corporation, Defendant. 2013 WL 9553874, *1+ , D.Nev. (Trial Pleading)	May 10, 2013	Petition		—
Discussed by	**10.** Complaint for Patent Infringement UNWIRED PLANET LLC, a Nevada limited liability company, Plaintiff, v. APPLE INC., a California corporation, Defendant. 2012 WL 4485293, *1+ , D.Nev. (Trial Pleading)	Sep. 19, 2012	Petition		—
Discussed by	**11.** Joint Case Management Statement & (Proposed) Order UNWIRED PLANET LLC, a Nevada Limited Liability Company, Plaintiff, v. APPLE INC., a California Corporation, Defendant. 2013 WL 8642565, *1+ , N.D.Cal. (Trial Filing)	Dec. 30, 2013	Filing		—
Cited by	**12.** Device capability based discovery, packaging and provisioning of content for wireless mobile devices LitAlert P2021-43-02	Oct. 13, 2021	Lit Alert		—
Cited by	**13.** Petition for Inter Partes Review of U.S. Patent No. 9,386,433 GOOGLE LLC, Petitioner, v. SEVEN NETWORKS, LLC, Patent Owner. 2018 WL 2282560, *1 , Patent Tr. & App. Bd. (Administrative Filing)	May 17, 2018	Administrative Filing		—
Cited by	**14.** Joint Case Management Statement & (Proposed) Order UNWIRED PLANET LLC, a Nevada Limited Liability Company, Plaintiff, v. APPLE INC., a California Corporation, Defendant. 2014 WL 3558412, *1+ , N.D.Cal. (Trial Filing)	May 01, 2014	Filing		—
Cited by	**15.** Joint Case Management Report UNWIRED PLANET LLC, a Nevada limited liability company, Plaintiff, v. APPLE INC., a California corporation, Defendant. 2013 WL 8350143, *1+ , N.D.Cal. (Trial Filing)	Jan. 24, 2013	Filing		—
Cited by	**16.** Joint Case Management Report UNWIRED PLANET LLC, a Nevada limited liability company, Plaintiff, v. APPLE INC., a California corporation, Defendant. 2013 WL 7964142, *1+ , D.Nev. (Trial Filing)	Jan. 24, 2013	Filing		—
Mentioned by	**17.** Picture coding method and picture decoding method LitAlert P2022-09-54	Feb. 23, 2022	Lit Alert		—
Mentioned by	**18.** System and method for providing data to a wireless device upon detection of activity of the device on a wireless network LitAlert P2013-39-88	Sep. 06, 2013	Lit Alert		—
Mentioned by	**19.** System and method for providing data to a wireless device upon detection of activity of the device on a wireless network LitAlert P2014-17-05	Sep. 06, 2013	Lit Alert		—

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Treatment	Title	Date	Type	Depth	Headnote(s)
Mentioned by	**20.** Unwired Planet LLC's Opening Claim Construction Brief UNWIRED PLANET, LLC, v. APPLE, INC. 2014 WL 2530699, *1 , N.D.Cal. (Trial Motion, Memorandum and Affidavit)	Apr. 07, 2014	Motion		—
Mentioned by	**21.** Defendant Apple Inc.'s Motion to Transfer Venue Pursuant to 28 U.S.C. § 1404(a) UNWIRED PLANET LLC, a Nevada limited liability company, Plaintiff, v. APPLE INC., a California corporation, Defendant. 2013 WL 8350131, *1 , N.D.Cal. (Trial Motion, Memorandum and Affidavit)	Feb. 01, 2013	Motion		—
Mentioned by	**22.** Joint Claim Construction Statement Pursuant to Patent Local Rule 4-3 UNWIRED PLANET LLC, a Nevada limited liability company, Plaintiff, v. APPLE INC., a California corporation, Defendant. 2014 WL 1666012, *1 , N.D.Cal. (Trial Filing)	Mar. 10, 2014	Filing		—
—	**23.** SYSTEMS AND METHODS OF DETECTING LANGUAGE AND NATURAL LANGUAGE STRINGS FOR TEXT TO SPEECH SYNTHESIS Out Of Plan US PAT 8583418 , U.S. PTO Utility	Nov. 12, 2013	Patents	—	—
—	**24.** TECHNIQUES FOR CORRELATION OF CHARGES IN MULTIPLE LAYERS FOR CONTENT AND SERVICE DELIVERY Out Of Plan US PAT 8560463 , U.S. PTO Utility	Oct. 15, 2013	Patents	—	—
—	**25.** SPEECH INTERFACE SYSTEM AND METHOD FOR CONTROL AND INTERACTION WITH APPLICATIONS ON A COMPUTING SYSTEM Out Of Plan US PAT 8543407 , U.S. PTO Utility	Sep. 24, 2013	Patents	—	—
—	**26.** METHODS AND APPARATUSES FOR DISPLAY AND TRAVERSING OF LINKS IN PAGE CHARACTER ARRAY Out Of Plan US PAT 8527861 , U.S. PTO Utility	Sep. 03, 2013	Patents	—	—
—	**27.** REGISTRATION, VERIFICATION AND NOTIFICATION SYSTEM Out Of Plan US PAT 8462920 , U.S. PTO Utility	June 11, 2013	Patents	—	—
—	**28.** METHOD AND APPARATUS FOR DISPLAYING INFORMATION DURING AN INSTANT MESSAGING SESSION Out Of Plan US PAT 8458278 , U.S. PTO Utility	June 04, 2013	Patents	—	—
—	**29.** DIGITAL CONTENT ACCESS PROVISION METHOD E.G. FOR GAMES IN CELLULAR TELEPHONE, INVOLVES ASSOCIATING RECEIVED DIGITAL CONTENTS WITH DIFFERENT PROVISIONING PROTOCOLS CORRESPONDING TO SET OF DEVICE CAPABILITIES Out Of Plan DWPI 2004-111338	June 28, 2002	DWPI	—	—

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Treatment	Title	Date	Type	Depth	Headnote(s)
—	**30.** RF 054727/0726 Out Of Plan	Dec. 22, 2020	Assignments	—	—
—	**31.** RF 030585/0969 Out Of Plan	May 08, 2013	Assignments	—	—
—	**32.** RF 028447/0940 Out Of Plan	June 26, 2012	Assignments	—	—
—	**33.** RF 013985/0220 Out Of Plan	Sep. 16, 2003	Assignments	—	—
—	**34.** PatStat 7233790	2021	Patent Status Files	—	—
—	**40.** VIRTUAL ASSISTANT ACTIVATION Out Of Plan US PAT 11087759 , U.S. PTO Utility	Aug. 10, 2021	Patents	—	—
—	**41.** INTERFACE FOR A VIRTUAL DIGITAL ASSISTANT Out Of Plan US PAT 11080012 , U.S. PTO Utility	Aug. 03, 2021	Patents	—	—
—	**42.** METHOD AND APPARATUS FOR SEARCHING USING AN ACTIVE ONTOLOGY Out Of Plan US PAT 11023513 , U.S. PTO Utility	June 01, 2021	Patents	—	—
—	**43.** PERSONALIZED PREDICTION OF RESPONSES FOR INSTANT MESSAGING Out Of Plan US PAT 11025565 , U.S. PTO Utility	June 01, 2021	Patents	—	—
—	**44.** UNIFIED LANGUAGE MODELING FRAMEWORK FOR WORD PREDICTION, AUTO-COMPLETION AND AUTO-CORRECTION Out Of Plan US PAT 11010550 , U.S. PTO Utility	May 18, 2021	Patents	—	—
—	**45.** APPARATUSES, METHODS AND SYSTEMS FOR A DIGITAL CONVERSATION MANAGEMENT PLATFORM Out Of Plan US PAT 10984326 , U.S. PTO Utility	Apr. 20, 2021	Patents	—	—
—	**46.** APPARATUSES, METHODS AND SYSTEMS FOR A DIGITAL CONVERSATION MANAGEMENT PLATFORM Out Of Plan US PAT 10984327 , U.S. PTO Utility	Apr. 20, 2021	Patents	—	—
—	**47.** VOICE TRIGGER FOR A DIGITAL ASSISTANT Out Of Plan US PAT 10978090 , U.S. PTO Utility	Apr. 13, 2021	Patents	—	—
—	**48.** INTELLIGENT AUTOMATED ASSISTANT FOR TV USER INTERACTIONS Out Of Plan US PAT 10904611 , U.S. PTO Utility	Jan. 26, 2021	Patents	—	—
—	**49.** OPTIMIZING DIALOGUE POLICY DECISIONS FOR DIGITAL ASSISTANTS USING IMPLICIT FEEDBACK Out Of Plan US PAT 10810274 , U.S. PTO Utility	Oct. 20, 2020	Patents	—	—

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Treatment	Title	Date	Type	Depth	Headnote(s)
—	**50.** SYSTEM AND METHOD FOR PROVIDING A NETWORK SERVICE IN A DISTRIBUTED FASHION TO A MOBILE DEVICE Out Of Plan US PAT 10805474 , U.S. PTO Utility	Oct. 13, 2020	Patents	—	—
—	**51.** INTELLIGENT ORGANIZATION OF TASKS ITEMS Out Of Plan US PAT 10795541 , U.S. PTO Utility	Oct. 06, 2020	Patents	—	—
—	**52.** DYNAMIC THRESHOLDS FOR ALWAYS LISTENING SPEECH TRIGGER Out Of Plan US PAT 10789041 , U.S. PTO Utility	Sep. 29, 2020	Patents	—	—
—	**53.** LOW-LATENCY INTELLIGENT AUTOMATED ASSISTANT Out Of Plan US PAT 10789945 , U.S. PTO Utility	Sep. 29, 2020	Patents	—	—
—	**54.** AUTO-ACTIVATING SMART RESPONSES BASED ON ACTIVITIES FROM REMOTE DEVICES Out Of Plan US PAT 10791216 , U.S. PTO Utility	Sep. 29, 2020	Patents	—	—
—	**55.** VOICE ACTIVATED DEVICE FOR USE WITH A VOICE-BASED DIGITAL ASSISTANT Out Of Plan US PAT 10748529 , U.S. PTO Utility	Aug. 18, 2020	Patents	—	—
—	**56.** INTELLIGENT DIGITAL ASSISTANT IN A MULTI-TASKING ENVIRONMENT Out Of Plan US PAT 10733993 , U.S. PTO Utility	Aug. 04, 2020	Patents	—	—
—	**57.** AUTOMATICALLY ADAPTING USER INTERFACES FOR HANDS-FREE INTERACTION Out Of Plan US PAT 10705794 , U.S. PTO Utility	July 07, 2020	Patents	—	—
—	**58.** PERFORMING ACTIONS ASSOCIATED WITH TASK ITEMS THAT REPRESENT TASKS TO PERFORM Out Of Plan US PAT 10706373 , U.S. PTO Utility	July 07, 2020	Patents	—	—
—	**59.** TASK FLOW IDENTIFICATION BASED ON USER INTENT Out Of Plan US PAT 10706841 , U.S. PTO Utility	July 07, 2020	Patents	—	—
—	**60.** INTELLIGENT AUTOMATED ASSISTANT IN A MESSAGING ENVIRONMENT Out Of Plan US PAT 10691473 , U.S. PTO Utility	June 23, 2020	Patents	—	—
—	**61.** HANDS-FREE LIST-READING BY INTELLIGENT AUTOMATED ASSISTANT Out Of Plan US PAT 10679605 , U.S. PTO Utility	June 09, 2020	Patents	—	—
—	**62.** DISTRIBUTED PERSONAL ASSISTANT Out Of Plan US PAT 10671428 , U.S. PTO Utility	June 02, 2020	Patents	—	—

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Treatment	Title	Date	Type	Depth	Headnote(s)
—	**63.** SWITCHING BETWEEN TEXT DATA AND AUDIO DATA BASED ON A MAPPING Out Of Plan US PAT 10672399 , U.S. PTO Utility	June 02, 2020	Patents	—	—
—	**64.** INTERPRETING AND ACTING UPON COMMANDS THAT INVOLVE SHARING INFORMATION WITH REMOTE DEVICES Out Of Plan US PAT 10657961 , U.S. PTO Utility	May 19, 2020	Patents	—	—
—	**65.** REAL-TIME DIGITAL ASSISTANT KNOWLEDGE UPDATES Out Of Plan US PAT 10659851 , U.S. PTO Utility	May 19, 2020	Patents	—	—
—	**66.** SYSTEM AND METHOD FOR PROCESSING VOICEMAIL Out Of Plan US PAT 10652394 , U.S. PTO Utility	May 12, 2020	Patents	—	—
—	**67.** SYSTEM AND METHOD FOR PROVIDING A NETWORK SERVICE IN A DISTRIBUTED FASHION TO A MOBILE DEVICE Out Of Plan US PAT 10652399 , U.S. PTO Utility	May 12, 2020	Patents	—	—
—	**68.** METHOD AND APPARATUS FOR DISPLAYING INFORMATION DURING AN INSTANT MESSAGING SESSION Out Of Plan US PAT 10623347 , U.S. PTO Utility	Apr. 14, 2020	Patents	—	—
—	**69.** APPARATUSES, METHODS AND SYSTEMS FOR A DIGITAL CONVERSATION MANAGEMENT PLATFORM Out Of Plan US PAT 10607141 , U.S. PTO Utility	Mar. 31, 2020	Patents	—	—
—	**70.** INSTANTANEOUS SPEAKING OF CONTENT ON TOUCH DEVICES Out Of Plan US PAT 10592095 , U.S. PTO Utility	Mar. 17, 2020	Patents	—	—
—	**71.** CONTENT ENGINE FOR MOBILE COMMUNICATIONS SYSTEMS Out Of Plan US PAT 10574772 , U.S. PTO Utility	Feb. 25, 2020	Patents	—	—
—	**72.** VIRTUAL ASSISTANT CONTINUITY Out Of Plan US PAT 10567477 , U.S. PTO Utility	Feb. 18, 2020	Patents	—	—
—	**73.** METHOD AND SYSTEM FOR OPERATING A MULTI-FUNCTION PORTABLE ELECTRONIC DEVICE USING VOICE-ACTIVATION Out Of Plan US PAT 10568032 , U.S. PTO Utility	Feb. 18, 2020	Patents	—	—
—	**74.** DATA DETECTION Out Of Plan US PAT 10552013 , U.S. PTO Utility	Feb. 04, 2020	Patents	—	—
—	**75.** SYSTEMS AND METHODS FOR HANDS-FREE NOTIFICATION SUMMARIES Out Of Plan US PAT 10553209 , U.S. PTO Utility	Feb. 04, 2020	Patents	—	—
—	**76.** INTELLIGENT AUTOMATED ASSISTANT Out Of Plan US PAT 10553215 , U.S. PTO Utility	Feb. 04, 2020	Patents	—	—

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—	**77.** CONTEXTUAL VOICE COMMANDS Out Of Plan US PAT 10540976 , U.S. PTO Utility	Jan. 21, 2020	Patents	—	—
—	**78.** DATA DRIVEN NATURAL LANGUAGE EVENT DETECTION AND CLASSIFICATION Out Of Plan US PAT 10521466 , U.S. PTO Utility	Dec. 31, 2019	Patents	—	—
—	**79.** SYSTEM AND METHOD FOR PROVIDING DIGITAL CONTENT FROM A PLURALITY OF CONTENT PROVIDERS Out Of Plan US PAT 10523824+ , U.S. PTO Utility	Dec. 31, 2019	Patents	—	—
—	**80.** USING STATISTICAL LANGUAGE MODELS FOR CONTEXTUAL LOOKUP Out Of Plan US PAT 10515147 , U.S. PTO Utility	Dec. 24, 2019	Patents	—	—
—	**81.** DYNAMIC PHRASE EXPANSION OF LANGUAGE INPUT Out Of Plan US PAT 10509862 , U.S. PTO Utility	Dec. 17, 2019	Patents	—	—
—	**82.** SERVERS AND MOBILE DEVICES FOR AUTOMATIC CONTENT DISTRIBUTION OVER A WIRELESS NETWORK Out Of Plan US PAT 10511721 , U.S. PTO Utility	Dec. 17, 2019	Patents	—	—
—	**83.** PORTABLE MULTIFUNCTION DEVICE, METHOD, AND GRAPHICAL USER INTERFACE FOR VIEWING AND MANAGING ELECTRONIC CALENDARS Out Of Plan US PAT 10503366 , U.S. PTO Utility	Dec. 10, 2019	Patents	—	—
—	**84.** AUTOMATICALLY ADAPTING USER INTERFACES FOR HANDS-FREE INTERACTION Out Of Plan US PAT 10496753 , U.S. PTO Utility	Dec. 03, 2019	Patents	—	—
—	**85.** MULTI-COMMAND SINGLE UTTERANCE INPUT METHOD Out Of Plan US PAT 10497365 , U.S. PTO Utility	Dec. 03, 2019	Patents	—	—
—	**86.** DIGITAL ASSISTANT PROVIDING AUTOMATED STATUS REPORT Out Of Plan US PAT 10490187 , U.S. PTO Utility	Nov. 26, 2019	Patents	—	—
—	**87.** HIERARCHICAL BELIEF STATES FOR DIGITAL ASSISTANTS Out Of Plan US PAT 10482874 , U.S. PTO Utility	Nov. 19, 2019	Patents	—	—
—	**88.** USING CONTEXT INFORMATION TO FACILITATE PROCESSING OF COMMANDS IN A VIRTUAL ASSISTANT Out Of Plan US PAT 10475446 , U.S. PTO Utility	Nov. 12, 2019	Patents	—	—
—	**89.** AUTOMATIC SPEECH RECOGNITION BASED ON USER FEEDBACK Out Of Plan US PAT 10446141 , U.S. PTO Utility	Oct. 15, 2019	Patents	—	—

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—	**90.** IDENTIFICATION OF VOICE INPUTS PROVIDING CREDENTIALS Out Of Pat. US PAT 10446143 , U.S. PTO Utility	Oct. 15, 2019	Patents	—	—
—	**91.** USER-SPECIFIC NOISE SUPPRESSION FOR VOICE QUALITY IMPROVEMENTS Out Of Pat. US PAT 10446167 , U.S. PTO Utility	Oct. 15, 2019	Patents	—	—
—	**92.** METHOD AND APPARATUS FOR DISCOVERING TRENDING TERMS IN SPEECH REQUESTS Out Of Pat. US PAT 10431204 , U.S. PTO Utility	Oct. 01, 2019	Patents	—	—
—	**93.** SYSTEMS AND METHODS FOR INTEGRATING THIRD PARTY SERVICES WITH A DIGITAL ASSISTANT Out Of Pat. US PAT 10417037 , U.S. PTO Utility	Sep. 17, 2019	Patents	—	—
—	**94.** USER-SPECIFIC ACOUSTIC MODELS Out Of Pat. US PAT 10410637 , U.S. PTO Utility	Sep. 10, 2019	Patents	—	—
—	**95.** METHODS AND APPARATUS FOR ALTERING AUDIO OUTPUT SIGNALS Out Of Pat. US PAT 10381016 , U.S. PTO Utility	Aug. 13, 2019	Patents	—	—
—	**96.** EFFICIENT WORD ENCODING FOR RECURRENT NEURAL NETWORK LANGUAGE MODELS Out Of Pat. US PAT 10366158 , U.S. PTO Utility	July 30, 2019	Patents	—	—
—	**97.** INTELLIGENT AUTOMATED ASSISTANT IN A HOME ENVIRONMENT Out Of Pat. US PAT 10354011 , U.S. PTO Utility	July 16, 2019	Patents	—	—
—	**98.** VIRTUAL ASSISTANT AIDED COMMUNICATION WITH 3RD PARTY SERVICE IN A COMMUNICATION SESSION Out Of Pat. US PAT 10356243 , U.S. PTO Utility	July 16, 2019	Patents	—	—
—	**99.** METHOD AND APPARATUS FOR DISPLAYING INFORMATION DURING AN INSTANT MESSAGING SESSION Out Of Pat. US PAT 10348654 , U.S. PTO Utility	July 09, 2019	Patents	—	—
—	**100.** USER INTERFACE FOR CORRECTING RECOGNITION ERRORS Out Of Pat. US PAT 10332518 , U.S. PTO Utility	June 25, 2019	Patents	—	—

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Citing References (98)

Treatment	Title	Date	Type	Depth	Headnote(s)
—	**101.** METHOD AND APPARATUS FOR BUILDING AN INTELLIGENT AUTOMATED ASSISTANT Out Of Plan US PAT 10318871 , U.S. PTO Utility	June 11, 2019	Patents	—	—
—	**102.** COMPETING DEVICES RESPONDING TO VOICE TRIGGERS Out Of Plan US PAT 10311871 , U.S. PTO Utility	June 04, 2019	Patents	—	—
—	**103.** METHOD FOR EXTRACTING SALIENT DIALOG USAGE FROM LIVE DATA Out Of Plan US PAT 10296160 , U.S. PTO Utility	May 21, 2019	Patents	—	—
—	**104.** APPLICATION INTEGRATION WITH A DIGITAL ASSISTANT Out Of Plan US PAT 10297253 , U.S. PTO Utility	May 21, 2019	Patents	—	—
—	**105.** DOMAIN SPECIFIC LANGUAGE FOR ENCODING ASSISTANT DIALOG Out Of Plan US PAT 10289433 , U.S. PTO Utility	May 14, 2019	Patents	—	—
—	**106.** METHODS AND APPARATUSES FOR AUTOMATIC SPEECH RECOGNITION Out Of Plan US PAT 10283110 , U.S. PTO Utility	May 07, 2019	Patents	—	—
—	**107.** INTELLIGENT AUTOMATED ASSISTANT Out Of Plan US PAT 10276170 , U.S. PTO Utility	Apr. 30, 2019	Patents	—	—
—	**108.** INTELLIGENT TASK DISCOVERY Out Of Plan US PAT 10269345 , U.S. PTO Utility	Apr. 23, 2019	Patents	—	—
—	**109.** GENERATING AND PROCESSING TASK ITEMS THAT REPRESENT TASKS TO PERFORM Out Of Plan US PAT 10255566 , U.S. PTO Utility	Apr. 09, 2019	Patents	—	—
—	**110.** AUTOMATIC ACCENT DETECTION USING ACOUSTIC MODELS Out Of Plan US PAT 10255907 , U.S. PTO Utility	Apr. 09, 2019	Patents	—	—
—	**111.** INTELLIGENT LIST READING Out Of Plan US PAT 10249300 , U.S. PTO Utility	Apr. 02, 2019	Patents	—	—
—	**112.** ACTIONABLE REMINDER ENTRIES Out Of Plan US PAT 10241644 , U.S. PTO Utility	Mar. 26, 2019	Patents	—	—
—	**113.** INTERFACE FOR A VIRTUAL DIGITAL ASSISTANT Out Of Plan US PAT 10241752 , U.S. PTO Utility	Mar. 26, 2019	Patents	—	—
—	**114.** PROACTIVE ASSISTANCE BASED ON DIALOG COMMUNICATION BETWEEN DEVICES Out Of Plan US PAT 10223066 , U.S. PTO Utility	Mar. 05, 2019	Patents	—	—

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Treatment	Title	Date	Type	Depth	Headnote(s)
—	**115.** VOICE TRIGGER FOR A DIGITAL ASSISTANT Out Of Plan US PAT 10199051 , U.S. PTO Utility	Feb. 05, 2019	Patents	—	—
—	**116.** DIGITAL ASSISTANT PROVIDING WHISPERED SPEECH Out Of Plan US PAT 10192552 , U.S. PTO Utility	Jan. 29, 2019	Patents	—	—
—	**117.** DEVICE, METHOD, AND GRAPHICAL USER INTERFACE FOR ENABLING CONVERSATION PERSISTENCE ACROSS TWO OR MORE INSTANCES OF A DIGITAL ASSISTANT Out Of Plan US PAT 10185542 , U.S. PTO Utility	Jan. 22, 2019	Patents	—	—
—	**118.** CONTEXT-BASED ENDPOINT DETECTION Out Of Plan US PAT 10186254 , U.S. PTO Utility	Jan. 22, 2019	Patents	—	—
—	**119.** SYSTEM AND METHOD FOR INFERRING USER INTENT FROM SPEECH INPUTS Out Of Plan US PAT 10176167 , U.S. PTO Utility	Jan. 08, 2019	Patents	—	—
—	**120.** EXEMPLAR-BASED NATURAL LANGUAGE PROCESSING Out Of Plan US PAT 10169329 , U.S. PTO Utility	2019	Patents	—	—
—	**121.** INTELLIGENT ASSISTANT FOR HOME AUTOMATION Out Of Plan US PAT 10170123 , U.S. PTO Utility	2019	Patents	—	—
—	**122.** SYSTEMS AND METHODS FOR NAME PRONUNCIATION Out Of Plan US PAT 10134385 , U.S. PTO Utility	Nov. 20, 2018	Patents	—	—
—	**123.** LANGUAGE IDENTIFICATION FROM SHORT STRINGS Out Of Plan US PAT 10127220 , U.S. PTO Utility	Nov. 13, 2018	Patents	—	—
—	**124.** SPEAKER IDENTIFICATION AND UNSUPERVISED SPEAKER ADAPTATION TECHNIQUES Out Of Plan US PAT 10127911 , U.S. PTO Utility	Nov. 13, 2018	Patents	—	—
—	**125.** MOBILE DEVICE HAVING HUMAN LANGUAGE TRANSLATION CAPABILITY WITH POSITIONAL FEEDBACK Out Of Plan US PAT 10108612 , U.S. PTO Utility	Oct. 23, 2018	Patents	—	—
—	**126.** LANGUAGE INPUT CORRECTION Out Of Plan US PAT 10101822 , U.S. PTO Utility	Oct. 16, 2018	Patents	—	—
—	**127.** DEVICE ACCESS USING VOICE AUTHENTICATION Out Of Plan US PAT 10102359 , U.S. PTO Utility	Oct. 16, 2018	Patents	—	—
—	**128.** INTELLIGENT DEVICE ARBITRATION AND CONTROL Out Of Plan US PAT 10089072 , U.S. PTO Utility	Oct. 02, 2018	Patents	—	—

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—	**129.** DEVICE VOICE CONTROL FOR SELECTING A DISPLAYED AFFORDANCE Out Of Plan US PAT 10083688 , U.S. PTO Utility	Sep. 25, 2018	Patents	—	—
—	**130.** BETTER RESOLUTION WHEN REFERENCING TO CONCEPTS Out Of Plan US PAT 10083690 , U.S. PTO Utility	Sep. 25, 2018	Patents	—	—
—	**131.** CONTEXT-SENSITIVE HANDLING OF INTERRUPTIONS Out Of Plan US PAT 10078487 , U.S. PTO Utility	Sep. 18, 2018	Patents	—	—
—	**132.** ENTROPY-GUIDED TEXT PREDICTION USING COMBINED WORD AND CHARACTER N-GRAM LANGUAGE MODELS Out Of Plan US PAT 10078631 , U.S. PTO Utility	Sep. 18, 2018	Patents	—	—
—	**133.** NAME RECOGNITION SYSTEM Out Of Plan US PAT 10079014 , U.S. PTO Utility	Sep. 18, 2018	Patents	—	—
—	**134.** PROVIDING AN INDICATION OF THE SUITABILITY OF SPEECH RECOGNITION Out Of Plan US PAT 10074360 , U.S. PTO Utility	Sep. 11, 2018	Patents	—	—
—	**135.** MULTILINGUAL WORD PREDICTION Out Of Plan US PAT 10067938 , U.S. PTO Utility	Sep. 04, 2018	Patents	—	—
—	**136.** ACTIVE TRANSPORT BASED NOTIFICATIONS Out Of Plan US PAT 10057736 , U.S. PTO Utility	Aug. 21, 2018	Patents	—	—
—	**137.** INTELLIGENT AUTOMATED ASSISTANT FOR MEDIA EXPLORATION Out Of Plan US PAT 10049663 , U.S. PTO Utility	Aug. 14, 2018	Patents	—	—
—	**138.** APPLYING NEURAL NETWORK LANGUAGE MODELS TO WEIGHTED FINITE STATE TRANSDUCERS FOR AUTOMATIC SPEECH RECOGNITION Out Of Plan US PAT 10049668 , U.S. PTO Utility	Aug. 14, 2018	Patents	—	—
—	**139.** USER PROFILING FOR VOICE INPUT PROCESSING Out Of Plan US PAT 10049675 , U.S. PTO Utility	Aug. 14, 2018	Patents	—	—
—	**140.** APPLICATION-BASED VALUE BILLING IN A WIRELESS SUBSCRIBER NETWORK Out Of Plan US PAT 10043170 , U.S. PTO Utility	Aug. 07, 2018	Patents	—	—
—	**141.** INTELLIGENT AUTOMATED ASSISTANT Out Of Plan US PAT 10043516 , U.S. PTO Utility	Aug. 07, 2018	Patents	—	—

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Treatment	Title	Date	Type	Depth	Headnote(s)
—	**142.** SYSTEMS AND METHODS FOR RECOGNIZING TEXTUAL IDENTIFIERS WITHIN A PLURALITY OF WORDS Out Of Plan US PAT 10019994 , U.S. PTO Utility	July 10, 2018	Patents	—	—
—	**143.** SYSTEM AND METHOD FOR PROVIDING SUBSCRIBED APPLICATIONS ON WIRELESS DEVICES OVER A WIRELESS NETWORK Out Of Plan US PAT 10009743 , U.S. PTO Utility	June 26, 2018	Patents	—	—
—	**144.** METHOD AND APPARATUS FOR SEARCHING USING AN ACTIVE ONTOLOGY Out Of Plan US PAT 10002189 , U.S. PTO Utility	June 19, 2018	Patents	—	—
—	**145.** CONTENT ENGINE FOR MOBILE COMMUNICATIONS SYSTEMS Out Of Plan US PAT 9986059 , U.S. PTO Utility	May 29, 2018	Patents	—	—
—	**146.** SOCIAL REMINDERS Out Of Plan US PAT 9986419 , U.S. PTO Utility	May 29, 2018	Patents	—	—
—	**147.** AUTOMATIC SUPPLEMENTATION OF WORD CORRECTION DICTIONARIES Out Of Plan US PAT 9977779 , U.S. PTO Utility	May 22, 2018	Patents	—	—
—	**148.** VOICE-BASED MEDIA SEARCHING Out Of Plan US PAT 9971774 , U.S. PTO Utility	May 15, 2018	Patents	—	—
—	**149.** PRIVACY PRESERVING DISTRIBUTED EVALUATION FRAMEWORK FOR EMBEDDED PERSONALIZED SYSTEMS Out Of Plan US PAT 9972304 , U.S. PTO Utility	May 15, 2018	Patents	—	—
—	**150.** SYSTEM AND METHOD FOR USER-SPECIFIED PRONUNCIATION OF WORDS FOR SPEECH SYNTHESIS AND RECOGNITION Out Of Plan US PAT 9966060 , U.S. PTO Utility	May 08, 2018	Patents	—	—
—	**151.** MULTI-COMMAND SINGLE UTTERANCE INPUT METHOD Out Of Plan US PAT 9966065 , U.S. PTO Utility	May 08, 2018	Patents	—	—
—	**152.** INTERPRETING AND ACTING UPON COMMANDS THAT INVOLVE SHARING INFORMATION WITH REMOTE DEVICES Out Of Plan US PAT 9966068 , U.S. PTO Utility	May 08, 2018	Patents	—	—
—	**153.** AUTOMATED RESPONSE TO AND SENSING OF USER ACTIVITY IN PORTABLE DEVICES Out Of Plan US PAT 9958987 , U.S. PTO Utility	May 01, 2018	Patents	—	—

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—	**154.** SPEECH RECOGNITION INVOLVING A MOBILE DEVICE Out Of Plan US PAT 9959870 , U.S. PTO Utility	May 01, 2018	Patents	—	—
—	**155.** DEPENDENCY-AWARE TRANSFORMATION OF MULTI-FUNCTION APPLICATIONS FOR ON-DEMAND EXECUTION Out Of Plan US PAT 9952848 , U.S. PTO Utility	Apr. 24, 2018	Patents	—	—
—	**156.** CROWD SOURCING INFORMATION TO FULFILL USER REQUESTS Out Of Plan US PAT 9953088 , U.S. PTO Utility	Apr. 24, 2018	Patents	—	—
—	**157.** AUTOMATIC LANGUAGE IDENTIFICATION FOR DYNAMIC TEXT PROCESSING Out Of Plan US PAT 9946706 , U.S. PTO Utility	Apr. 17, 2018	Patents	—	—
—	**158.** UNIT-SELECTION TEXT-TO-SPEECH SYNTHESIS BASED ON PREDICTED CONCATENATION PARAMETERS Out Of Plan US PAT 9934775 , U.S. PTO Utility	Apr. 03, 2018	Patents	—	—
—	**159.** TRAINING AN AT LEAST PARTIAL VOICE COMMAND SYSTEM Out Of Plan US PAT 9922642 , U.S. PTO Utility	Mar. 20, 2018	Patents	—	—
—	**160.** SYSTEMS AND METHODS FOR STRUCTURED STEM AND SUFFIX LANGUAGE MODELS Out Of Plan US PAT 9899019 , U.S. PTO Utility	Feb. 20, 2018	Patents	—	—
—	**161.** PARSIMONIOUS HANDLING OF WORD INFLECTION VIA CATEGORICAL STEM + SUFFIX N-GRAM LANGUAGE MODELS Out Of Plan US PAT 9886432 , U.S. PTO Utility	Feb. 06, 2018	Patents	—	—
—	**162.** VIRTUAL ASSISTANT ACTIVATION Out Of Plan US PAT 9886953 , U.S. PTO Utility	Feb. 06, 2018	Patents	—	—
—	**163.** INTELLIGENT TEXT-TO-SPEECH CONVERSION Out Of Plan US PAT 9865248 , U.S. PTO Utility	Jan. 09, 2018	Patents	—	—
—	**164.** STRUCTURED DICTATION USING INTELLIGENT AUTOMATED ASSISTANTS Out Of Plan US PAT 9865280 , U.S. PTO Utility	Jan. 09, 2018	Patents	—	—
—	**165.** USING CONTEXT INFORMATION TO FACILITATE PROCESSING OF COMMANDS IN A VIRTUAL ASSISTANT Out Of Plan US PAT 9858925 , U.S. PTO Utility	Jan. 02, 2018	Patents	—	—
—	**166.** PREDICTIVE CONVERSION OF LANGUAGE INPUT Out Of Plan US PAT 9842101 , U.S. PTO Utility	Dec. 12, 2017	Patents	—	—

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Treatment	Title	Date	Type	Depth	Headnote(s)
—	**167.** PARSIMONIOUS CONTINUOUS-SPACE PHRASE REPRESENTATIONS FOR NATURAL LANGUAGE PROCESSING Out Of Plan US PAT 9842105 , U.S. PTO Utility	Dec. 12, 2017	Patents	—	—
—	**168.** METHOD AND APPARATUS FOR DISCOVERING TRENDING TERMS IN SPEECH REQUESTS Out Of Plan US PAT 9818400 , U.S. PTO Utility	Nov. 14, 2017	Patents	—	—
—	**169.** DEPENDENCY-AWARE TRANSFORMATION OF MULTI-FUNCTION APPLICATIONS FOR ON-DEMAND EXECUTION Out Of Plan US PAT 9811327 , U.S. PTO Utility	Nov. 07, 2017	Patents	—	—
—	**170.** TEXT CORRECTION PROCESSING Out Of Plan US PAT 9798393 , U.S. PTO Utility	Oct. 24, 2017	Patents	—	—
—	**171.** DEPENDENCY-AWARE TRANSFORMATION OF MULTI-FUNCTION APPLICATIONS FOR ON-DEMAND EXECUTION Out Of Plan US PAT 9798531 , U.S. PTO Utility	Oct. 24, 2017	Patents	—	—
—	**172.** TEXT PREDICTION USING COMBINED WORD N-GRAM AND UNIGRAM LANGUAGE MODELS Out Of Plan US PAT 9785630 , U.S. PTO Utility	Oct. 10, 2017	Patents	—	—
—	**173.** PREDICTIVE TEXT INPUT Out Of Plan US PAT 9760559 , U.S. PTO Utility	Sep. 12, 2017	Patents	—	—
—	**174.** VOICE CONTROL TO DIAGNOSE INADVERTENT ACTIVATION OF ACCESSIBILITY FEATURES Out Of Plan US PAT 9733821 , U.S. PTO Utility	Aug. 15, 2017	Patents	—	—
—	**175.** DETERMINING DOMAIN SALIENCE RANKING FROM AMBIGUOUS WORDS IN NATURAL SPEECH Out Of Plan US PAT 9734193 , U.S. PTO Utility	Aug. 15, 2017	Patents	—	—
—	**176.** NAME RECOGNITION SYSTEM Out Of Plan US PAT 9721563 , U.S. PTO Utility	Aug. 01, 2017	Patents	—	—
—	**177.** COMPETING DEVICES RESPONDING TO VOICE TRIGGERS Out Of Plan US PAT 9721566 , U.S. PTO Utility	Aug. 01, 2017	Patents	—	—
—	**178.** REDUCING THE NEED FOR MANUAL START/END-POINTING AND TRIGGER PHRASES Out Of Plan US PAT 9715875 , U.S. PTO Utility	July 25, 2017	Patents	—	—
—	**180.** DISAMBIGUATING HETERONYMS IN SPEECH SYNTHESIS Out Of Plan US PAT 9711141 , U.S. PTO Utility	July 18, 2017	Patents	—	—

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—	**182.** UNIT-SELECTION TEXT-TO-SPEECH SYNTHESIS USING CONCATENATION-SENSITIVE NEURAL NETWORKS Out Of Plan US PAT 9697820 , U.S. PTO Utility	July 04, 2017	Patents	—	—
—	**183.** SYSTEM AND METHOD FOR UPDATING AN ADAPTIVE SPEECH RECOGNITION MODEL Out Of Plan US PAT 9697822 , U.S. PTO Utility	July 04, 2017	Patents	—	—
—	**184.** MULTI-TIERED VOICE FEEDBACK IN AN ELECTRONIC DEVICE Out Of Plan US PAT 9691383 , U.S. PTO Utility	June 27, 2017	Patents	—	—
—	**185.** INTELLIGENT AUTOMATED ASSISTANT FOR TV USER INTERACTIONS Out Of Plan US PAT 9668024 , U.S. PTO Utility	May 30, 2017	Patents	—	—
—	**186.** SOCIAL REMINDERS Out Of Plan US PAT 9668121 , U.S. PTO Utility	May 30, 2017	Patents	—	—
—	**187.** CACHING APPARATUS FOR SERVING PHONETIC PRONUNCIATIONS Out Of Plan US PAT 9646609 , U.S. PTO Utility	May 09, 2017	Patents	—	—
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—	**193.** AUTOMATED RESPONSE TO AND SENSING OF USER ACTIVITY IN PORTABLE DEVICES Out Of Plan US PAT 9619079 , U.S. PTO Utility	Apr. 11, 2017	Patents	—	—
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—	**195.** ANALYZING AUDIO INPUT FOR EFFICIENT SPEECH AND MUSIC RECOGNITION Out Of Plan US PAT 9620105 , U.S. PTO Utility	Apr. 11, 2017	Patents	—	—
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—	**198.** DUAL CODE AUTHENTICATION SYSTEM Out Of Plan US PAT 9553864 , U.S. PTO Utility	Jan. 24, 2017	Patents	—	—
—	**199.** VOICE-BASED MEDIA SEARCHING Out Of Plan US PAT 9547647 , U.S. PTO Utility	Jan. 17, 2017	Patents	—	—
—	**200.** INTELLIGENT AUTOMATED ASSISTANT Out Of Plan US PAT 9548050 , U.S. PTO Utility	Jan. 17, 2017	Patents	—	—

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—	**201.** MOBILE DEVICE HAVING HUMAN LANGUAGE TRANSLATION CAPABILITY WITH POSITIONAL FEEDBACK Out Of Plan US PAT 9535906 , U.S. PTO Utility	Jan. 03, 2017	Patents	—	—
—	**202.** METHOD AND APPARATUS FOR BUILDING AN INTELLIGENT AUTOMATED ASSISTANT Out Of Plan US PAT 9501741 , U.S. PTO Utility	Nov. 22, 2016	Patents	—	—
—	**203.** METHOD FOR SUPPORTING DYNAMIC GRAMMARS IN WFST-BASED ASR Out Of Plan US PAT 9502031 , U.S. PTO Utility	Nov. 22, 2016	Patents	—	—
—	**204.** DEVICE, METHOD, AND USER INTERFACE FOR VOICE-ACTIVATED NAVIGATION AND BROWSING OF A DOCUMENT Out Of Plan US PAT 9495129 , U.S. PTO Utility	Nov. 15, 2016	Patents	—	—
—	**205.** HANDLING SPEECH SYNTHESIS OF CONTENT FOR MULTIPLE LANGUAGES Out Of Plan US PAT 9483461 , U.S. PTO Utility	Nov. 01, 2016	Patents	—	—
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—	**207.** METHODS AND APPARATUSES FOR AUTOMATIC SPEECH RECOGNITION Out Of Plan US PAT 9431006 , U.S. PTO Utility	Aug. 30, 2016	Patents	—	—
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—	**211.** CONTEXT-SENSITIVE HANDLING OF INTERRUPTIONS Out Of Plan US PAT 9368114 , U.S. PTO Utility	June 14, 2016	Patents	—	—
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Treatment	Title	Date	Type	Depth	Headnote(s)
—	**213.** WIRELESS SUBSCRIBER BILLING AND DISTRIBUTION Out Of Plan US PAT 9350875 , U.S. PTO Utility	May 24, 2016	Patents	—	—
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—	**217.** INTELLIGENT AUTOMATED ASSISTANT Out Of Plan US PAT 9318108 , U.S. PTO Utility	Apr. 19, 2016	Patents	—	—
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—	**219.** SYSTEM AND METHOD FOR EMERGENCY CALLS INITIATED BY VOICE COMMAND Out Of Plan US PAT 9300784 , U.S. PTO Utility	Mar. 29, 2016	Patents	—	—
—	**220.** REGISTRATION, VERIFICATION AND NOTIFICATION SYSTEM Out Of Plan US PAT 9300792 , U.S. PTO Utility	Mar. 29, 2016	Patents	—	—
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—	**222.** SYSTEM AND METHOD FOR UTILIZING BEHAVIORAL CHARACTERISTICS IN AUTHENTICATION AND FRAUD PREVENTION Out Of Plan US PAT 9275211 , U.S. PTO Utility	Mar. 01, 2016	Patents	—	—
—	**223.** DEMAND BASED ENCRYPTION AND KEY GENERATION AND DISTRIBUTION SYSTEMS AND METHODS Out Of Plan US PAT 9270447 , U.S. PTO Utility	Feb. 23, 2016	Patents	—	—
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—	**225.** DEVICE ACCESS USING VOICE AUTHENTICATION Out Of Plan US PAT 9262612 , U.S. PTO Utility	Feb. 16, 2016	Patents	—	—

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—	**226.** DATA SYNCHRONIZATION INTERFACE Out Of Plan US PAT 9203923 , U.S. PTO Utility	Dec. 01, 2015	Patents	—	—
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—	**231.** USING EVENT ALERT TEXT AS INPUT TO AN AUTOMATED ASSISTANT Out Of Plan US PAT 9117447 , U.S. PTO Utility	Aug. 25, 2015	Patents	—	—
—	**232.** REGISTRATION, VERIFICATION AND NOTIFICATION SYSTEM Out Of Plan US PAT 9106738 , U.S. PTO Utility	Aug. 11, 2015	Patents	—	—
—	**233.** FEDERATED DOWNLOAD OF DIGITAL CONTENT TO WIRELESS DEVICES Out Of Plan US PAT 9100814 , U.S. PTO Utility	Aug. 04, 2015	Patents	—	—
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—	**239.** DUAL CODE AUTHENTICATION SYSTEM Out Of Plan US PAT 8973109 , U.S. PTO Utility	Mar. 03, 2015	Patents	—	—
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—	**245.** SERVICE ORCHESTRATION FOR INTELLIGENT AUTOMATED ASSISTANT Out Of Plan US PAT 8892446 , U.S. PTO Utility	Nov. 18, 2014	Patents	—	—
—	**246.** AUTOMATED ACQUISITION OF DISCOVERED CONTENT Out Of Plan US PAT 8869186 , U.S. PTO Utility	Oct. 21, 2014	Patents	—	—
—	**247.** MANAGEMENT OF MOBILE APPLICATIONS Out Of Plan US PAT 8862105 , U.S. PTO Utility	Oct. 14, 2014	Patents	—	—
—	**248.** TRANSLATING PHRASES FROM ONE LANGUAGE INTO ANOTHER USING AN ORDER-BASED SET OF DECLARATIVE RULES Out Of Plan US PAT 8812294 , U.S. PTO Utility	Aug. 19, 2014	Patents	—	—
—	**249.** DISAMBIGUATION BASED ON ACTIVE INPUT ELICITATION BY INTELLIGENT AUTOMATED ASSISTANT Out Of Plan US PAT 8799000 , U.S. PTO Utility	Aug. 05, 2014	Patents	—	—
—	**250.** HEARING ASSISTANCE SYSTEM FOR PROVIDING CONSISTENT HUMAN SPEECH Out Of Plan US PAT 8781836 , U.S. PTO Utility	July 15, 2014	Patents	—	—
—	**251.** SEMANTIC SEARCH USING A SINGLE-SOURCE SEMANTIC MODEL Out Of Plan US PAT 8775442 , U.S. PTO Utility	July 08, 2014	Patents	—	—

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—	**252.** MULTI-TIERED VOICE FEEDBACK IN AN ELECTRONIC DEVICE Out Of Plan US PAT 8768702 , U.S. PTO Utility	July 01, 2014	Patents	—	—
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—	**258.** TEXT TO SPEECH CONVERSION OF TEXT MESSAGES FROM MOBILE COMMUNICATION DEVICES Out Of Plan US PAT 8718047 , U.S. PTO Utility	May 06, 2014	Patents	—	—
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—	**261.** SYSTEMS AND METHODS FOR SELECTIVE TEXT TO SPEECH SYNTHESIS Out Of Plan US PAT 8712776 , U.S. PTO Utility	Apr. 29, 2014	Patents	—	—
—	**262.** UNSUPERVISED DOCUMENT CLUSTERING USING LATENT SEMANTIC DENSITY ANALYSIS Out Of Plan US PAT 8713021 , U.S. PTO Utility	Apr. 29, 2014	Patents	—	—
—	**263.** NETWORK BASED JIT ON A PRIORI KNOWLEDGE OF A SET OF DISPARATE CLIENTS Out Of Plan US PAT 8713091 , U.S. PTO Utility	Apr. 29, 2014	Patents	—	—

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—	**271.** ELECTRONIC DEVICES WITH VOICE COMMAND AND CONTEXTUAL DATA PROCESSING CAPABILITIES Out Of Plan US PAT 8676904 , U.S. PTO Utility	Mar. 18, 2014	Patents	—	—
—	**272.** METHOD AND APPARATUS FOR BUILDING AN INTELLIGENT AUTOMATED ASSISTANT Out Of Plan US PAT 8677377 , U.S. PTO Utility	Mar. 18, 2014	Patents	—	—
—	**273.** ACTIVE INPUT ELICITATION BY INTELLIGENT AUTOMATED ASSISTANT Out Of Plan US PAT 8670979 , U.S. PTO Utility	Mar. 11, 2014	Patents	—	—
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—	**276.** CONTEXTUAL COMPUTING SYSTEM Out Of Plan US PAT 8655738 , U.S. PTO Utility	Feb. 18, 2014	Patents	—	—
—	**277.** FAST, LANGUAGE-INDEPENDENT METHOD FOR USER AUTHENTICATION BY VOICE Out Of Plan US PAT 8645137 , U.S. PTO Utility	Feb. 04, 2014	Patents	—	—
—	**278.** USER-SPECIFIC NOISE SUPPRESSION FOR VOICE QUALITY IMPROVEMENTS Out Of Plan US PAT 8639516 , U.S. PTO Utility	Jan. 28, 2014	Patents	—	—
—	**279.** CONTEXT-AWARE UNIT SELECTION Out Of Plan US PAT 8620662 , U.S. PTO Utility	Dec. 31, 2013	Patents	—	—
—	**280.** AUTOMATED RESPONSE TO AND SENSING OF USER ACTIVITY IN PORTABLE DEVICES Out Of Plan US PAT 8614431 , U.S. PTO Utility	Dec. 24, 2013	Patents	—	—
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—	**282.** SYSTEMS AND METHODS FOR CONCATENATION OF WORDS IN TEXT TO SPEECH SYNTHESIS Out Of Plan US PAT 8396714 , U.S. PTO Utility	Mar. 12, 2013	Patents	—	—
—	**283.** DOWNLOAD DISCOVERY FOR WEB SERVERS Out Of Plan US PAT 8392911 , U.S. PTO Utility	Mar. 05, 2013	Patents	—	—
—	**284.** SYSTEMS AND METHODS FOR DETERMINING THE LANGUAGE TO USE FOR SPEECH GENERATED BY A TEXT TO SPEECH ENGINE Out Of Plan US PAT 8380507 , U.S. PTO Utility	Feb. 19, 2013	Patents	—	—
—	**285.** PLATFORM AND SERVICE FOR MANAGEMENT AND MULTI-CHANNEL DELIVERY OF MULTI-TYPES OF CONTENTS Out Of Plan US PAT 8365306 , U.S. PTO Utility	Jan. 29, 2013	Patents	—	—
—	**286.** SYSTEMS AND METHODS FOR SELECTIVE RATE OF SPEECH AND SPEECH PREFERENCES FOR TEXT TO SPEECH SYNTHESIS Out Of Plan US PAT 8352268 , U.S. PTO Utility	Jan. 08, 2013	Patents	—	—
—	**287.** SYSTEMS AND METHODS FOR TEXT TO SPEECH SYNTHESIS Out Of Plan US PAT 8352272 , U.S. PTO Utility	Jan. 08, 2013	Patents	—	—

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Treatment	Title	Date	Type	Depth	Headnote(s)
—	**288.** METHOD, SYSTEM AND TERMINAL FOR MAINTAINING CAPABILITY MANAGEMENT OBJECT AND FOR MANAGING CAPABILITY Out Of Plan US PAT 7991878 , U.S. PTO Utility	Aug. 02, 2011	Patents	—	—
—	**289.** TECHNIQUES FOR ANALYZING COMMANDS DURING STREAMING MEDIA TO CONFIRM DELIVERY Out Of Plan US PAT 7917612 , U.S. PTO Utility	Mar. 29, 2011	Patents	—	—
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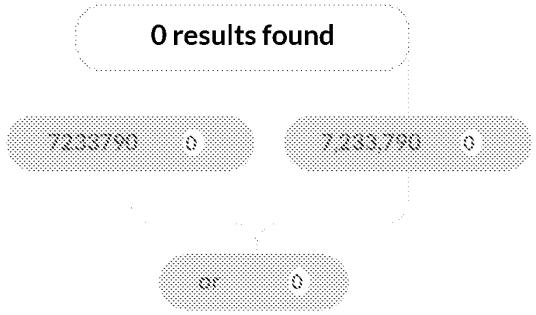

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☐ US7233790B2 - Device capability based discovery, packaging and provisioning of content for wireless mobile devices

Original

Bibliographic information & Images

Publication number and date
US7233790B2
2007-06-19

Granted

Application number and date
US10600746 {/api/control?query=AN:{"US10600746"}&autosearch=true}
2003-06-19

Priority number and date
US10600746 {/api/control?query=PRN:{"US10600746"}&autosearch=true}
2003-06-19

Ultimate owner
VIDEOLABS INC {/api/control?query=uo:{"VIDEOLABS%20INC"}&autosearch=true}

Original assignee
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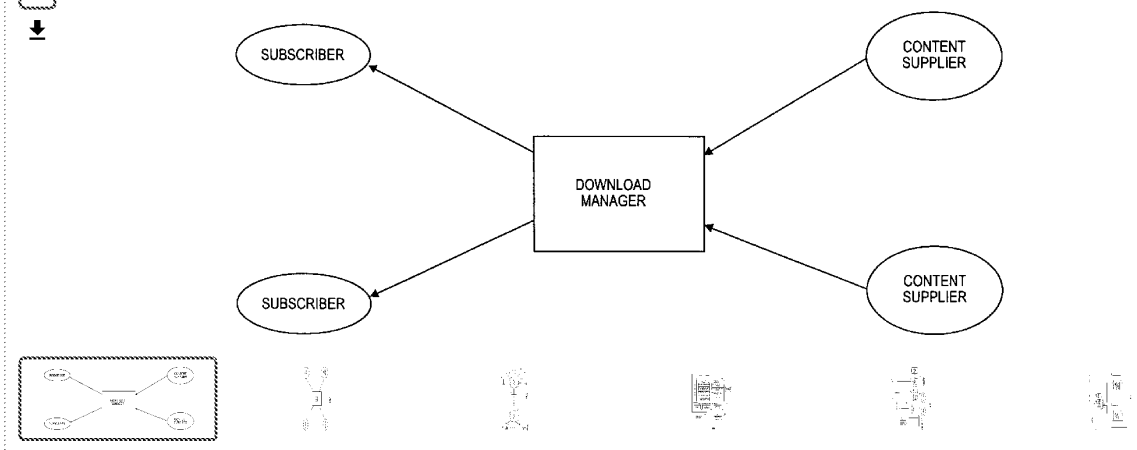

Abstract

A network server system includes a download manager that manages the publication, purchase and delivery of digital products from multiple suppliers to wireless services subscribers in multiple domains. Product suppliers can publish and manage their products on the server system via a computer network and make their products available to the subscribers for purchase or licensing. The subscribers in each domain can access the server remotely to purchase rights to download and use the products on associated wireless communication devices. Multiple different implementations of any product can be maintained, where each implementation corresponds to a different set of device capabilities. Each product can also be associated with multiple different provisioning models, each corresponding to a different set of device capabilities.

Original

Claims

1. A method of providing access to content for use on wireless communication devices, the method comprising: receiving and storing a plurality of items of content to be made available for use in wireless communication devices used by a plurality of wireless services subscribers, including receiving a plurality of different implementations of at least one of the items of content, where each implementation of any given item of content corresponds to a different set of device capabilities; and maintaining a product catalog containing a description of the items of content, the product catalog including, in association with each item of content, a reference to each implementation of said item of content.

2. A method of providing access to digital content for use on wireless communication devices, the method comprising: receiving and storing in a server system a plurality of items of digital content to be made available for use in wireless communication devices used by a plurality of wireless services subscribers, including receiving and storing a plurality of different implementations of at least one of the items of digital content, where each implementation of any given item of digital content corresponds to a different set of device capabilities; operating the server system to maintain a product catalog containing a description of the items of digital

content, wherein the product catalog includes, in association with each item of digital content, a reference to each implementation of said item of digital content; receiving a request from a wireless device used by one of the subscribers; in response to the request, selecting a portion of the product catalog to be presented to the subscriber, based on device capabilities of the wireless device used by the subscriber; and presenting the selected portion of the product catalog to the subscriber via a wireless network, such that the selected portion, as presented to the subscriber, provides only a single description of each item of digital content in said portion, regardless of the number of implementations of each said item.

3. A method as recited in claim 2 , wherein said selecting a portion of the product catalog comprises: in response to the request, determining the identity of the wireless device used by the subscriber, wherein each implementation of the plurality of items of digital content has been previously associated in the server system with at least one device identity, according to corresponding device capabilities supported by the implementation; and selecting the portion of the product catalog to be presented to the subscriber based on the identity of the wireless device used by the subscriber.

4. A method as recited in claim 2 , further comprising: receiving from the subscriber a request for one of the items of digital content in said portion of the product catalog; selecting an implementation of the requested item of digital content, based on device capabilities of the wireless device used by the subscriber; and downloading the selected implementation of the item of digital content to the wireless device used by the subscriber.

5. A method as recited in claim 4 , further comprising associating each of the items of digital content in the server system with a plurality of different provisioning models, each of the provisioning models corresponding to a different set of device capabilities, each provisioning model including a provisioning protocol and a corresponding set of provisioning attributes and descriptors for provisioning digital content in wireless devices.

6. A method as recited in claim 5 , further comprising: receiving from the subscriber a request for one of the items of digital content in said portion of the product catalog; identifying device capabilities of the wireless device used by the subscriber; selecting one of a plurality of provisioning models associated with the requested item in the server system, based on the device capabilities of the wireless device used by the subscriber; packaging the requested item according to the selected provisioning model; and provisioning the requested item in the wireless device used by the subscriber according to the selected provisioning model.

7. A method as recited in claim 6 , wherein: said packaging the requested item comprises creating a provisioning descriptor for the requested item according to the selected provisioning model, and associating the provisioning descriptor with the requested item; and said provisioning the requested item in the wireless device comprises sending the packaged requested item to the wireless device used by the subscriber according to a provisioning protocol associated with the selected provisioning model.

8. A system comprising: a network interface through which to communicate over a communication network; and a download manager to receive and store a plurality of items of content to be made available for use in wireless communication devices used by a plurality of wireless telecommunications subscribers, including receiving a plurality of different implementations of at least one of the items of content, where each implementation of any given item of content corresponds to a different set of device capabilities; and maintain a product catalog containing a description of the items of content, the product catalog including, in association with each item of content, a reference to each implementation of said item of content.

9. A system comprising: a processor; and a storage facility accessible to the processor and containing code which, when executed by the processor, causes the processing system to receive and store a plurality of items of digital content to be made available for use in wireless communication devices used by a plurality of wireless telecommunications subscribers, including receiving and storing a plurality of different implementations of at least one of the items of digital content, where each implementation of any given item of digital content corresponds to a different set of device capabilities; maintain a product catalog containing a description of the items of digital content, wherein the product catalog includes, in association with each item of digital content, a reference to each implementation of said item of digital content; receive a request from a wireless device used by one of the subscribers; in response to the request, select a portion of the product catalog to be presented to the subscriber, based on device capabilities of the wireless device used by the subscriber; and cause the selected portion of the product catalog to be presented to the subscriber via a wireless telecommunications network, such that the selected portion, as presented to the subscriber, provides only a single description of each item of digital content in said portion, regardless of the number of implementations of each said item.

10. A system as recited in claim 9 , wherein selection of said portion of the product catalog comprises: in response to the request, determining the identity of the wireless device used by the subscriber, wherein each implementation of the plurality of items of digital content has been previously associated in the server system with at least one device identity, according to corresponding device capabilities supported by the implementation; and selecting the portion of the product catalog to be presented to the subscriber based on the identity of the wireless device used by the subscriber.

11. A system as recited in claim 10 , wherein said storage facility further contains code which, when executed by the processor, causes the processing system to: receive from the subscriber a request for one of the items of digital content in said portion of the product catalog; select an implementation of the requested item of digital content, based on device capabilities of the wireless device used by the subscriber; and download the selected implementation of the item of digital content to the wireless device used by the subscriber.

12. A system as recited in claim 11 , wherein said storage facility further contains code which, when executed by the processor, causes the processing system to: associate each of the items of digital content in the server system with a plurality of different provisioning models, each of the provisioning models corresponding to a different set of device capabilities, each of the provisioning models including a provisioning protocol and a corresponding set of provisioning attributes and descriptors for provisioning digital content in wireless devices.

13. A system as recited in claim 12 , wherein said storage facility further contains code which, when executed by the processor, causes the processing system to: receive from the subscriber a request for one of the items of digital content in said portion of the product catalog; identify device capabilities of the wireless device used by the subscriber; select one of a plurality of provisioning models associated with the requested item in the server system, based on the device capabilities of the wireless device used by the subscriber; package the requested item according to the selected provisioning model; and provision the requested item in the wireless device used by the subscriber according to the selected provisioning model.

14. A system as recited in claim 13 , wherein packaging the requested item comprises creating a provisioning descriptor for the requested item according to the selected provisioning model, and associating the provisioning descriptor with the requested item; and wherein provisioning the requested item in the wireless device comprises sending the packaged requested item to the wireless device used by the subscriber according to a provisioning protocol associated with the selected provisioning model.

Original

Families

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This section contains all family relations of this particular document. For more information about the different families, refer to the User Manual (Glossary/Families).

Extended (15) Priority date/claims	Complete (14) Priority date/claims	Main (2) Priority date/claims	Domestic (2) Priority date/claims	Publication number	Application number	Title	Status
2002-06-28 US10282557 US10600746 US10601022 US12622322 US60392383 US60392999 US60393024 US60393041	2009-11-19 US10601022 US12622322 US60392383 US60392999 US60393024 US60393041	2009-11-19 US10601022 US12622322 US60392383 US60392999 US60393024 US60393041	2009-11-19	USRE043113E	US12622322	Domain-based management of distribution of digital content from multiple suppliers to multiple wireless services subscribers	Granted

2002-06-28 US10282557 US10600746 US10601022 US60392383 US60392999 US60393024 US60393041	2003-06-19 US10600746 US60392383 US60392999 US60393024 US60393041	2003-06-19	☐ US7233790B2	US10600746	Device capability based discovery, packaging and provisioning of content for wireless mobile devices	Granted	
			☐ US20040054786A1	US10600746	Device capability based discovery, packaging and provisioning of content for wireless mobile devices	Granted	
	2003-06-19 US10601022 US60392383 US60392999 US60393024 US60393041	2003-06-19	☐ US7299033B2	US10601022	Domain-based management of distribution of digital content from multiple suppliers to multiple wireless services subscribers	Granted	
			☐ US20040054787A1	US10601022	Domain-based management of distribution of digital content from multiple suppliers to multiple wireless services subscribers	Granted	
	2002-10-28 US10282557 US60392383	2002-10-28	☐ US20040024867A1	US10282557	Method and apparatus for determination of device capabilities on a network	Filed	
	2002-06-28 US10282557 US60392383	2002-06-28	☐ EP1376989A3	EP03254133	Method and apparatus for determination of device capabilities on a network	Ceased	
			☐ EP1376989A2	EP03254133	Method and apparatus for determination of device capabilities on a network	Ceased	
	2002-06-28 US10600746 US60392383 US60392999 US60393024 US60393041	2002-06-28	☐ EP1376990A3	EP03254137	Device capability based discovery, packaging and provisioning of content for wireless mobile devices	Ceased	
			☐ EP1376990A2	EP03254137	Device capability based discovery, packaging and provisioning of content for wireless mobile devices	Ceased	
	2002-06-28 US10601022 US60392383 US60392999 US60393024 US60393041	2002-06-28	☐ EP1376438B1	EP03254159	Domain-based management of distribution of digital content from multiple suppliers to multiple wireless services suscribers	Granted	
			☐ EP1376438A1	EP03254159	Domain-based management of distribution of digital content from multiple suppliers to multiple wireless services suscribers	Granted	
		2002-06-28	☐ AT350725T	AT2541592003	WAS BASED ADMINISTRATION FOR THE DISTRIBUTION OF DIGITAL CONTENTS OF SEVERAL SUPPLIERS AT SEVERAL WIRELESS SERVICE CUSTOMERS	Ceased	
		2002-06-28	☐ DE60310812T2	DE60310812	Was based administration for the distribution of digital contents of several suppliers at several wireless service customers	Granted	
			☐ DE60310812D1	DE60310812	Was based administration for the distribution of digital contents of several suppliers at several wireless service customers	Granted	

Description

[0001] This application claims the benefit of U.S. provisional patent applications Nos.: 60/393,024; 60/392,383; 60/393,041; and 60/392,999, each of which was filed on Jun. 28, 2002, and each of which is incorporated herein by reference.

FIELD OF THE INVENTION

[0002] At least one embodiment of the present invention pertains to systems and methods for providing digital content to wireless services subscribers, and more particularly, to facilitating management and delivery of digital content from multiple content suppliers to multiple wireless services subscribers in multiple domains.

BACKGROUND

[0003] Personal mobile communication/computing devices, such as cellular telephones, personal digital assistants (PDAs) and two-way pagers, have become commonplace in many countries. These devices are referred to collectively herein as “mobile devices” or “wireless devices”. The current state-of-the-art of mobile devices has advanced far beyond that of their predecessors. For example, early cellular telephones were used analog signals to communicate over wireless telecommunications networks (or simply “wireless networks”) and were nothing more than mobile telephones. Today's cellular telephones typically are all digital and provide many other functions in addition to telephony capability. For example, many of the latest generation of mobile telephones (and other mobile devices) allow their users to play games, access World Wide Web pages, exchange email, exchange and download files, exchange short messaging service (SMS) messages, and send and receive video.

[0004] With new mobile devices providing a wider range of capabilities, there is increasing demand among the users of these devices (i.e., wireless services subscribers) for new and interesting types of digital content that can be used on these mobile devices, such as games and other applications, images, ring tones, screensavers, wallpapers, etc. Although newer mobile devices often come pre-provisioned with certain digital products when first acquired by the subscriber, it is desirable to allow subscribers to acquire additional digital products for use in their mobile devices as such products become available. While this capability already

exists, currently subscribers acquire digital content directly from the content suppliers (typically via the wireless network and the Internet). This process is inconvenient if a subscriber wishes to acquire various different items of digital content from different suppliers, since the subscriber must navigate to the web sites of different suppliers. Therefore, it is further desirable to make many different types of digital content available to subscribers at one time through a centralized "store".

[0005] From the content supplier's perspective, another impediment to the efficient distribution of digital content is the fact that different mobile devices often require different content packaging formats and provisioning protocols. In order to make a given item of digital content available to multiple mobile devices supporting different provisioning models, a digital content supplier will normally deploy that item of content multiple times, packaging it differently for each of the provisioning models. For example, an image to be delivered to Nokia-COD phones and Sprint-GCD OTA phones would be deployed twice, custom-packaged for each of those two delivery modes. It is very burdensome for digital content suppliers to have to package and provision the digital content they produce in a manner that is suitable for all of the devices in the marketplace. Moreover, it is difficult for content suppliers to keep up with the constant changes in device capabilities for the many mobile devices in the marketplace. Consequently, there is often a gap between the interoperability of a given digital product and how effective it can be used on a device. Therefore, the problem exists of how to efficiently allow many digital content providers to distribute many different types of digital content to subscribers using many different types of mobile devices.

[0006] A related problem is how to charge subscribers for the digital content they acquire. In one known system. The wireless carrier's system is capable of connecting to an external billing system and provides billing events to that system when a subscriber performs a chargeable action. However, this scenario assumes that all subscribers belong to a single organization that also owns the billing system. Furthermore, it assumes that a single currency is used. Yet many multi-national organizations have a parent company with subsidiaries in many countries. Different countries have different currencies, taxes and other charges. Each subsidiary may implement its own support/business infrastructure to deal with local regulations and customs, particularly with respect to the billing process. Consequently, the carrier's system must be able to generate billing events and direct them to the appropriate external billing system. Furthermore, it must be able to present the customer with a charge for each service, in the applicable currency and expressed in a way that is appropriate considering local taxes, fees and other regulations.

[0007] One way to address this problem, which only partially solves it, is to use credit card systems. In this scenario, the credit card company acts as an intermediary in the billing process. This approach consolidates all billing at one point. Settlement is done between the product/service provider and the subscriber provider (e.g., the wireless carrier) for a fee. This approach, however, does not handle the currency, taxes, fees and regulations issues mentioned above.

SUMMARY OF THE INVENTION

[0008] One aspect of the invention is a method and apparatus for providing access to content for use on wireless communication devices. Multiple items of content are stored in a server system, to be made available for use in wireless communication devices used by multiple wireless services subscribers. Each of the items of content is associated in the server system with multiple different provisioning models for provisioning the content in wireless communication devices. Each of the provisioning models corresponds to a different set of device capabilities.

[0009] In another aspect of the invention, multiple different implementations of at least one of the items of content are received, where each implementation corresponds to a different set of device capabilities. A product catalog containing a description of the items of content is also maintained. The product catalog includes, in association with each item of content, a reference to each implementation of the item of content.

[0010] Other features of the present invention will be apparent from the accompanying drawings and from the detailed description which follows.

BRIEF DESCRIPTION OF THE DRAWINGS

[0011] One or more embodiments of the present invention are illustrated by way of example and not limitation in the figures of the accompanying drawings, in which like references indicate similar elements and in which:

[0012] FIG. 1 illustrates the relationship between the download manager, content suppliers, and subscribers;

[0013] FIG. 2 shows a network architecture in which a download manager in accordance with the invention can be deployed;

[0014] FIG. 3 schematically shows the components of the download manager;

[0015] FIG. 4 shows the components of the device capability manager;

[0016] FIG. 5 shows the relationship between a product entry and implementations of the product in the product catalog;

[0017] FIG. 6 shows the relationship between a product and its implementations;

[0018] FIG. 7 shows how various data elements are used in the billing process;

[0019] FIG. 8 illustrates a simplified process by which a product can be listed in the product catalog in a way that facilitates device-tailored product discovery and provisioning;

[0020] FIG. 9 shows a process by which the product catalog is displayed to a subscriber;

[0021] FIG. 10 shows a process by which a purchase of a product can be made using the download manager;

[0022] FIG. 11 illustrates the separation, within the download manager, of content from how the content is provisioned;

[0023] FIG. 12 illustrates a process by which a product is provisioned in a client device using the appropriate one of various provisioning protocols;

[0024] FIG. 13 shows an example of the software deployment architecture of the download manager; and

[0025] FIG. 14 illustrates the hardware architecture of a computer system in which the download manager can be implemented.

DETAILED DESCRIPTION

[0026] A system and method for efficiently managing the publication, purchase and delivery of digital content from multiple content suppliers to multiple wireless services subscribers in multiple domains are described below. As used in this description, the terms "digital content", "digital product", "content", and "product" are used interchangeably and mean software and/or data embodying things such as games and other applications, applets or the like; images; screensavers; wallpaper; ring tones; etc., particularly (but not necessarily exclusively) those designed for use in mobile devices such as cellular telephones, personal digital assistants (PDAs), and other small-footprint wireless/mobile devices. For convenience the terms "purchase" or "buy" are used to mean either actual purchase or any other conventional way in which a subscriber can acquire rights to use digital content (e.g., by acquiring a license).

Overview

[0027] As described in greater detail below, a system which manages publication, purchase and delivery of digital content is implemented in a network server system that includes one or more server computer systems on a network. The server system includes an application server referred to herein as the "download manager". Digital content suppliers can publish and manage their products using the download manager via a computer network, such as the Internet, and can make their products available to wireless services subscribers through the download manager for purchase or licensing. Subscribers can access the server system via wireless networks to purchase rights to download and use the digital content on their wireless communication devices.

[0028] FIG. 1 illustrates the relationship between the download manager, content suppliers, and wireless services subscribers (users of mobile devices). The download manager **1** acts as an intermediary between multiple content suppliers **2** (e.g., **2**A, **2**B, etc.) and multiple customers (e.g., **3**A, **3**B, etc.), e.g., wireless services subscribers, belonging to multiple "domains". In the supply chain process for distribution of digital content, a content supplier **2** adds a digital product to the set of products managed by the download manager **1** (i.e., products "in the store"). The supplier **2** then associates various attributes with the product. Once the product has been submitted to the product store, a product administrator associated with the download manager **1** verifies its quality and determines whether it should be made available to the customers **2** or if it should be rejected. Once the product is approved, customers **2** can buy the product by accessing the download manager **1** from their client devices.

[0029] To facilitate description, it is henceforth assumed herein that the customers are users of mobile devices and, therefore, are subscribers of warless services (although that need not be the case); thus, customers are henceforth called "subscribers" herein. Note, however, that the techniques described herein need not be limited to wireless services subscribers or mobile client devices.

Domains and Partner Management

[0030] Among other advantageous features, the download manager **1** facilitates partner management. A "partner", as the term is used herein, is an entity that holds a relationship to a subscriber for purposes of delivery of digital products, billing, returns, etc. For example, a partner can be an Internet portal, an Internet Service Provider (ISP), a wireless carrier, an application service provider (ASP), etc. A partner also appoints a number of content suppliers to supply products to the product store. Partner management is the concept of being able to assign responsibility for various parts of the digital product supply chain to different categories of users.

[0031] The entities "within the store" (managed by the download manager **1**) belonging to a partner are partitioned into entities called "domains". A "domain", as the term is used herein, is an entity, defined in the download manager **1**, that describes the billing relationship between a partner and a set of subscribers, as well as describing a partitioning of product space and administrative responsibilities. As such, a domain can represent a grouping of wireless services subscribers, such as a wireless carrier or a subsidiary of a wireless carrier, a business enterprise, or any other defined group of wireless services subscribers. The domain manager maintains a database of data defining the associations between domains and partners, administrators, subscribers and products.

[0032] Domains facilitate the proper billing of subscribers from multiple organizations and/or with multiple wireless carriers (or other subscriber providers), and facilitate presentation of product descriptions to subscribers in the languages and currencies appropriate for their local countries or regions.

[0033] The domain entity is also used in the download manager **1** to classify other entities as belonging to a domain **1**-to-**1**, belonging to a domain **1**-to-many, many-to-many, or not belonging to a domain. In general, a domain captures the following relationships to the subscribers:

- 1) how subscribers are charged for the products they purchase and in which currency;
- 2) to which user groups the subscribers can belong;
- 3) from which product categories the subscribers can select products; and
- 4) which products are accessible to the subscribers.

[0038] In certain embodiments of the invention, a domain has the following properties:

- a name (localized)
- a description (localized)
- a uniform resource locator (URL) to a web site giving further description of the domain
- a contact address including contact person, contact telephone numbers, fax numbers and postal address
- the currency to use for billing and display purposes
- reference to handlers for various different payment models (e.g., online payment, pre-payment and post-payment)
- a set of references to rating handlers used for adjustment of product prices

[0046] The name and the descriptions have localized values for the set of languages registered in the system.

[0047] The distinction between domain entities and non-domain entities also forms the basis for delegated administration. More specifically, for each domain, the responsibility for supplying products, approving or rejecting products, etc. can be delegated to different suppliers and administrators. Thus, each domain is associated with a set of administrators that handle the products in the store. In certain embodiments of the invention, these administrators include a system administrator, a domain administrator, a product administrator, and a customer care administrator.

[0048] The system administrator is the overall administrator for the download manager **1**, who can create new domains and their respective domain administrators to help regulate it. He also maintains the ability to control non-domain entities such as devices, content types, etc. The domain administrator is the overall administrator for a given domain. He has the ability to manage all of the suppliers and subscribers for his domain as well as create product and customer care administrators for the domain. The product administrator is responsible for managing the entire product lifecycle for the content submitted by the domain's suppliers. The customer care administrator is responsible for managing subscribers belonging to the domain. Each subscriber belongs to only one domain and can only see products for the domain to which he belongs.

[0049] A partner appoints a number of content suppliers who provide products to the product store. A supplier can only submit products to the domain(s) to which he belongs. The relationship between suppliers and domains is many-to-many. Products are approved and deployed separately for each domain.

[0050] From the content supplier's perspective, all entities in the download manager **1** that are domain-related are only selectable based on the domains to which the supplier can provide products. For example, a supplier can only choose from among the product categories and license models that belong to the domains to which the supplier has the right to supply products.

Network Environment

[0051] FIG. 2 shows a network architecture in which a download manager in accordance with the invention can be advantageously deployed. One or more wireless networks **22** are connected to a computer network **24** through corresponding gateways **23**. The computer network **24** may be the Internet, although alternatively, it could be essentially any other type of computer network, such as a corporate intranet, a local area network (LAN), etc., or a combination of such networks.

[0052] A number of mobile client devices **21** (e.g., **21**A, **21** B, etc.) operate on each wireless network **22**. A number of servers **25** (e.g., **5**A, **5**B, etc.) operate on the computer network **24** to provide a variety of services for the mobile devices **21** and/or to one or more non-mobile client devices **29** coupled to the computer network **24**. For example, the servers **25** may include World Wide Web servers, file servers, application servers, etc.

[0053] Each gateway **23** is operated by the wireless carrier of the wireless network to which it is directly connected. Each gateway **23** provides an interface between a particular wireless network **22** and the computer network **24** (e.g., the Internet), providing routing and, if necessary, appropriate protocol translation and/or content transcoding. In some cases, the gateway **23** may be a standalone device or system. In other cases, the gateway **3** may be part of a more-capable server system that provides additional value-added services to users of client devices **21**; such as a proxy service **27**, a provisioning manager **28**, etc.

[0054] A download manager **1** in accordance with the present invention is connected to the computer network **24**, either directly (as shown) or indirectly. The download manager **1** can be, but does not have to be, operated by a wireless carrier.

Download Manager

[0055] FIG. 3 schematically shows the download manager in greater detail, according to certain embodiments of the invention. In the illustrated embodiment, the major components of the download manager include a delivery manager **3**l, a product manager **32**, a business & operations manager **33**, and multiple protocol handlers **34**. Each of these components is preferably implemented as software, data, or a combination of software and data. However, in other embodiments, some or all of these components could be implemented in hardwired circuitry. The download manager **1** may also include a database **35** of published content, as shown, although at least some of the published content may instead be stored remotely.

[0056] The product manager **32** is the download manager's interface to the various content suppliers and provides centralized product cataloging (including enabling qualified content suppliers to register content for analysis and publication) and complete product life cycle support (i.e., management of content submission, analysis, approval, publication, use, maintenance, and eventual deactivation). The term "publication", as used herein, means making a product available on the download manager to wireless services subscribers for downloading to their client devices. The delivery manager **31** is the download manager's interface to the various subscribers and is responsible for delivering purchased digital content to subscribers, including invoking a protocol handler appropriate for communicating with each requesting mobile device. The protocol handlers **34** support multiple product discovery protocols and multiple product delivery protocols simultaneously. Hence, the protocol handlers **34** include product discovery handlers (e.g., a WAP handler, a Web handler, a Motorola Discovery handler) and product delivery handlers (e.g., a MIDP OTA handler, a Motorola OTA handler, a Nokia COD OTA handler). The business & operations manager **33** is mainly responsible for managing domain information and processes for charging subscribers for purchases of content. These components are described further below.

[0057] As shown in FIG. 3, the delivery manager **31** in certain embodiments includes a security manager **36**, a device capability manager **37**, a personal vault **38**, a storefront **39**, and a notification manager **40**. The storefront **39** is a conventional graphical user interface for allowing subscribers to make online purchases. It can be branded to a particular wireless carrier, for example, or other business entity. The security manager **36** is responsible for authentication of subscribers and client devices for purposes of purchasing content and preferably can support multiple authentication schemes, such as HTTP-based authentication, MSISDN/NIA based authentication, etc. The personal vault **38** stores, on a subscriber-by-subscriber basis, information to facilitate digital rights management (DRM), such as product licenses and/or other "purchase" information of the products purchased by each subscriber. This allows a subscriber to remove downloaded content from a mobile device without losing rights to the product, or to recover products on a device in cases of device hard reset, loss, etc.

[0058] The notification manager **40** can provide various types of notifications to subscribers using various communication channels, such as email, SMS, and WAP Push. The notification manager **40** can generate notifications automatically, such as notifications of new products or product upgrades, or in response to commands from a system administrator, such as account notifications, notifications of special promotions, etc.

[0059] The device capability manager **37** is responsible for device recognition (e.g., supporting device recognition through UAProf using Profile headers and Profile-Diff headers), device capability determination (e.g., retrieving device descriptors using best efforts and appending device capabilities to the session context), and device capability management (e.g., automated management of UAProf capable devices and quarantine of undefined or partially defined devices). As described further below, recognition of devices and their capabilities is used for a variety of purposes, such as to filter the set of available products that a subscriber can discover when connecting to the download manager **1**, to select the appropriate implementations of products that are purchased, and to select the appropriate provisioning model for provisioning a purchased product in a client device.

[0060] FIG. 4 shows the components of the device capability manager **37** according to an embodiment of the invention. The device capability manager **37** includes a device manager **41**, a device handler manager **42**, a delivery context cache **43**, a set of device recognition handlers **44**, a device data access object (DAO) **45**, a device information database **46**, a UAProf parser **47**, a UAProf resolver **48**, a dm-config.xml file **49**, and a DeviceVocabulary file **50**. The device information database **46** stores information identifying mobile devices and their corresponding capabilities. The device manager **41** contains all of the business logic that supports the user interface and the rest of the download manager **1**. The device DAO **45** contains all data logic and scripted query language necessary to communicate with the device information database **46**.

[0061] The device handler manager **42** is responsible for discovering and determining the types of devices accessing the download manager **1**. Upon startup of the download manager **1**, the device handler manager **42** loads the device recognition handlers **44** ordered by the dm-config.xml file **49**. This order is then used to determine which headers are to be processed first. The delivery context cache **43** is used to help improve performance on subsequent look-ups. If no device capabilities can be found or processed by the chain of handlers **44**, the device handler manager **42** then uses a default delivery context as defined by an administrative user interface.

[0062] The illustrated embodiment includes three device recognition handlers **44**: an XwapProfile handler, a UserAgent handler, and a quarantine handler. The XwapProfile handler is responsible for processing the "x-wap-profile" and "x-wap-profil-diff" request headers in requests from mobile (client) devices. It makes use of the UAProf parser **47** to parse RDF-compliant files and the UAProf resolver **48** to resolve the differences of the headers. The UAProf parser **47** parses RDF-compliant files. The UAProf resolver **48** reads resolution rules from the device-vocabulary.xml configuration file **50** and uses these rules to help merge x-wap-profile and x-wap-profile-diff headers.

[0063] The UserAgent handler is responsible for processing the "user-agent" request headers. It uses regular expression matching to best match the capabilities with the incoming "user-agent" header. If no user-agent header can be found or one is found but does not match to any existing capabilities, the request header is passed to the next handler in the chain.

[0064] The quarantine handler is responsible for processing any "accept" request headers. If the quarantine handler finds a user-agent header, it will add a new record in a device match table. Otherwise, it will simply return a delivery context with a set of capabilities determined by the "accept" headers and capabilities already defined by the default device profile.

[0065] The device capability manager **37** is capable of managing client devices in either of two categories: actual devices and generic devices. In response to client device requests, the device capability manager **37** uses actual device information from the request and any applicable stored generic device definitions to recognize the accessing client device and its capabilities. The system administrator can define devices (or device capabilities) in either category. An actual device is a particular make and model of client device, such as "Nokia 6310". Actual devices are identified solely from incoming requests, based on the UserAgent and x-wap-profile headers in the requests, for example. A generic device is a predefined device or set of device capabilities. Examples of some generic device definitions are: all Nokia devices (e.g., "vendorname=nokia"), all devices with display size >40, and all devices which support SMS. In response to client device requests, the device capability manager **37** uses the UserAgent or x-wap-profile header to identify the actual device accessing the system and to look up its corresponding capabilities in the device information database **46**, which are combined with any applicable generic device definitions to determine the capabilities of the client device. The use of this information is described further below.

[0066] It is useful now to define two types of device capabilities which the device capability manager is able to resolve: static capabilities and active capabilities. As defined in the download manager, "static" capabilities are the well-known set of attributes for a given device which are defined during pre-processing, not on-the-fly. These are associated with a client device as identified in the UserAgent or x-wap-profile headers. Generic devices, as defined above, only have static capabilities. "Active" capabilities represent a dynamic collection of attributes extracted during an interaction between the client device and the download manager, typically from the Accept headers. These two types of device capabilities are stored separately in the device information database **46**.

[0067] The ability for a user to discover content based on the static (well-known) capabilities of his device is valuable. With the number of device manufacturers and content providers in the market, there is often a gap between the interoperability of a given content and how effective it can be run on a device. By using the system's unique ability to capture the capabilities of a device and for content suppliers to select compatible devices for their content, the download manager **1** is capable of targeting supported products to their respective devices for a subscriber. In addition, the download manager **1** is able to easily adapt to the ever-changing modifications to capabilities and requirements and is highly scalable as more devices and content are pushed into the system, without a substantial decrease in performance.

[0068] Referring again to FIG. 3, the product manager **32** in certain embodiments includes a product workflow manager **51**, a content analysis manager **52**, a pricing manager **53**, and a product catalog **54**. The product workflow manager **51** allows the system administrator to define and modify details of the product workflow for processing content submitted by content providers. An example of a product workflow is (n chronological order): 1) submission, 2) content analysis, 3) listing of content in the product catalog, 4) usage of the content, 5) maintenance of content, and 6) content retirement (i.e., cancellation or deletion).

[0069] The content analysis manager **52** manages the process of verifying content quality and compliance with various requirements when the content is initially submitted by the content supplier (e.g., compliance with its declared type, content structure resource utilization, etc.). Content must pass the content analysis process satisfactorily before being listed in the product catalog **54** (i.e., published).

[0070] The pricing manager **53** allows administrators to add, modify and delete license for products in the store. The pricing manager **53** also includes and invokes a set of rating handlers at the time of purchase, which can adjust the price of the product based on various factors (e.g., promotions, applicable rebates, etc.), as described further below.

[0071] The product catalog **54** contains descriptions of all published items of content (products). Referring to FIG. 5, the catalog **54** includes, for each product entry **56**, a reference **58** to at least one implementation **57** of that product. An implementation **57** can be simply a binary file (a "binary") representing the product. In some cases, however, an implementation **57** may represent two or more binaries **61**, as shown in FIG. 6. Also as represented in FIG. 5 and FIG. 6, any particular product may have multiple implementations published on the download manager, each of which may be designed for a different specific client device or set of client devices.

[0072] Hence, any particular product entry in the catalog **54** can include references to multiple implementations of the product. However, the products shown to any particular subscriber when the subscriber views the catalog are filtered according to the device capabilities of the subscriber's device. More specifically, only those products that have at least one implementation compatible with the subscriber's device are shown to the subscriber. As shown in FIG. 5, each implementation entry **57** also includes a list (**59**A or **59**B) of devices supported by that implementation. Each product entry **56** in the catalog **54** includes a list **59** of the devices that are supported by that product. Which represents the aggregation of all of the devices supported by all of the implementations **57** of that product.

[0073] In addition, for any particular product, the catalog may include a description **60** of the product in multiple different languages, to accommodate subscribers in different countries. Product descriptions **60** are shown to each subscriber in the appropriate language, and the prices of products are shown in the appropriate currency, according to the domain of which the subscriber is a member. The domain of the subscriber is identified by the domain manager **62**, as described below.

[0074] Referring again to FIG. 3, the business & operations manager **33** in certain embodiments includes an operation administration and management (OA&M) module **61**, a domain manager **62**, and a payment manager **63**. The OA&M module **61** provides a Web based user interface for administering the download manager **1**. It supports role-based delegation of administration duties (e.g., system administrator, domain administrator, product administrator, customer care administrator, etc.) and interfaces with the provisioning manager to provide logging and reporting of key events and transactions.

[0075] The payment manager **63** is responsible for the process of charging subscribers when they purchase content and supports multiple different languages and currencies, partitioned by domain. The approach to billing and payment assumes that there are local billing mechanisms in place, each of which has an established relationship to the subscriber already. The local billing mechanism operates in the local currency using the local taxes, fees and other applicable charges for the subscriber's region. It also invoices at intervals that are customary for the region.

[0076] In certain embodiments of the invention, a subscriber can select the preferred payment model to use of three available payment models:

- Online payment—payment is performed 'just-in-time'. A typical implementation performs the payment transaction at the time of the purchase.
- Pre-paid payments—payment is performed before purchase and the purchase is deducted from the pre-paid amount.
- Post payments—payment is performed after the purchase by invoice.

[0080] A separate payment handler of a set of payment handlers **64** is accessible to the payment manager **63** for each of these payment models (see FIG. 3), and the payment manager is responsible for invoking the appropriate payment handler **64** at the time of purchase.

[0081] Referring now to FIG. 7, anytime a subscriber logs in to the download manager, a session **71** is created. The session **71** holds a reference to a unique subscriber profile **72** associated with the subscriber. Each subscriber has such a subscriber profile, which points to the organization that holds the billing relationship with the subscriber (i.e., the partner responsible for invoicing the subscriber) and an indication of the subscriber's selected payment model (i.e., post-paid, pre-paid, or online).

[0082] The download manager **1** also maintains a subscriber provider profile **73** for each subscriber provider (e.g., wireless carrier, etc.). Each subscriber provider profile **73** holds a reference to each of the payment handlers **64**, an indication of the local currency, and an indication of any value added tax and/or other charges that normally apply to the offered services in the region.

[0083] The product catalog **54**, as described above, holds the name, description and price of each product, as well as information indicating the supported devices. There is a separate entry for each supported local currency. There are no dependencies between the prices in various currencies for the same product.

[0084] This approach allows a product (or service) to have many different prices, on in each supported currency. There are no dependencies between prices other than that they all apply to one product. This approach, therefore, supports localized pricing policies and local taxes, etc.

[0085] The payment manager **63** includes a set of rating handlers (not shown), which are responsible for adjusting the price of products based on various factors, such as promotional offers, applying rebates, etc. Prices of content may change from time to time, subject to factors such as rebates, promotions, etc. At the time of purchase, the price of the product is determined by invoking the rating handlers. Each rating handler is called by the payment manager **63** with a reference to the corresponding product license and a reference to the subscriber. The rating handler is responsible for adjusting the price, if appropriate, and returning a new price.

[0086] Each of the payment handlers includes a charge method. During purchase the charge method of the registered payment handler for the payment model selected by the subscriber is called. The argument to the charge method is a data structure, ChargeDetailRecord, generated by the payment manager **63**, which holds information about the subscriber, the product, the product license with the price, and the domain of the subscriber. The charge method can either approve the charge and, thus, allow the purchase, or it can deny the purchase.

[0087] Referring again to FIG. 3, the domain manager **62** manages the associations between domains and partners, subscribers, suppliers, and products, and stores all of the domain information. As noted above, each domain can have the following properties:

- a name (localized)
- a description (localized)
- a uniform resource locator (URL) to a web site giving further description of the domain
- a contact address including contact person, contact telephone numbers, fax numbers and postal address
- the currency to use for billing and display purposes
- reference to handlers for online payment, pre-payment and post-payment
- a set of references to rating handlers

[0095] The domain manager **62** enables flexible business models to be implemented via revenue sharing between, and charging by, different stakeholders (partners).

[0096] Various aspects of the operation of the download manager **1** will now be described further with reference to FIGS. 8 through 13. FIG. 8 illustrates a simplified process by which a product can be listed in the product catalog in a way that facilitates device-tailored product discovery and provisioning, according to an embodiment of the invention. Certain operations in the product workflow are not shown in FIG. 8 to facilitate explanation, such as content analysis and approval. Initially, at block **801** the download manager **1** receives inputs from a product supplier defining a product and one or more implementations of that product. At block **802**, the download manager receives inputs from the supplier specifying one or more devices (actual or generic) which support each implementation and one or more provisioning protocols to be used for each implementation. At block **803** the download manager **1** stores the product definition, the implementations, and a list of all of the supported devices and provisioning protocols. Finally, at block **804** the download manager **1** determines the set of all possible devices which support the product and stores this information in association with the product information in the product catalog **54**.

[0097] FIG. 9 shows a process by which the catalog is displayed to a subscriber, according to an embodiment of the invention. At block **901** a client device operated by the subscriber connects to the download manager **1**. The domain manager **62** then identifies the domain of the subscriber at bock **902** based on its stored domain and subscriber associations. At block **903**, the product manager **32** selects the language and currency to be used based on the domain of the subscriber (each domain has one language and currency). At block **904**, the device capability manager **37** identifies the client device (e.g., from the UserAgent or x-wap-profile header) and its corresponding set of static (well-known) device capabilities. When a request to view available products is received from the client device (block **905**), at block **906** the product manager **32** determines from the product catalog **54** which products are supported by the client device, based on the (static) capabilities of the client device. The download manager **1** then sends a response to the client at block **907**, to cause the client device to display product information relating to only those products supported by the client device, in the appropriate currency and language for the subscriber's domain.

[0098] FIG. 10 shows a process by which a purchase of a product can be made, according to an embodiment of the invention. After displaying the product catalog **54** to the subscriber, the download manager **1** receives the subscriber's selection of the product to purchase at block **1001**. At block **1002** the pricing manager **53** calls all of the registered rating adapters. The rating adapters then adjust the price of the selected product, if appropriate, at block **1003**. At block **1004** the pricing manager **53** then presents a license object indicating the price to the subscriber. If the subscriber confirms the purchase (block **1005**), then at block **1006** the provisioning manager requests the payment manager **63** to charge the applicable price for the product. The payment manager **63** responds at block **1007** by selecting the applicable payment handler **44** based on the domain to which the subscriber belongs and the subscriber's preferred payment model (prepaid, post-paid, or online). Finally, at block **1008** the selected payment handler **44** performs the charge method to complete the transaction.

Multiple Provisioning Models

[0099] Different client devices often require different content provisioning protocols and packaging formats. In order to make a given item of digital content available to multiple mobile devices supporting different provisioning models, a digital content supplier would normally have to deploy that item of content multiple times, packaging it differently for each of the provisioning models. The download manager **1**, however, separates content from how it is provisioned to a device. As described above and as illustrated conceptually in FIG. 11, in the download manager **1** the product information is separated from the content itself, the content is separated from how it is packaged for delivery, the packaged content is separated from the delivery mechanism, and the delivery mechanism is separated from the discovery mechanism (the mechanism by which the subscriber discovers a product). By virtue of this separation, a content supplier is able to deploy content only once, targeting a wide range of devices, and the download manager **1** will deliver the content to those devices over a wide range of provisioning protocols.

[0100] When a product is submitted to the download manager **1** by a supplier, the supplier specifies which devices are supported by each implementation of the product. This information is then stored by the download manager **1** and used to select the proper packaging and provisioning protocol when the product is subsequently purchased.

[0101] The provisioning model used to provision a particular product in a particular client device is based on the device capabilities of the client device as well as the content type of the best-fit implementation. A provisioning "model", in this context, includes a particular provisioning protocol and a content packaging format. The ability to deliver the "best-fit" content based on "active" (dynamic) capabilities of a device is advantageous. Content provisioning provides the second part of targeting products to a given subscriber based on his device's capabilities. Whereas product discovery as described above relies on the "static" capabilities, provisioning relies on the "active" capabilities to determine the exact and often new enhancements of the client device. Given that a device can be fitted or enhanced with new features not described by the default set of capabilities originally intended for the device, the download manager **1** can use these active capabilities to find the best match content to provision to the device.

[0102] FIG. 12 illustrates a process by which a product is provisioned in a client device using the appropriate one of various provisioning protocols. At block **1201**, in response to a subscriber purchasing a product, the delivery manager **31** selects the best implementation of the product based on the device capabilities (static and active) of the client device. At block **1202** the download manager retrieves the content type of the selected implementation (e.g., MIDlet, EXE file, applet, iAppli, etc.). At block **1203** the download manager **1** selects the appropriate provisioning model available for that implementation, based on the device capabilities of the client device and the content type of the selected implementation. The provisioning manager **28** then creates a content descriptor for the implementation at block **1204**, based on the selected provisioning model. The content descriptor specifies the name of the content to be provisioned, the size of the content, a location (e.g., a URL) at which the content is stored, and the content type of the content. The content descriptor is unique to the provisioning handler (protocol) of the selected provisioning model.

[0103] The provisioning manager **28** then downloads the content descriptor to the client device at block **1205**. The client device parses the descriptor and then requests the content. When the provisioning manager **28** receives the request for the content from the client device at block **1206**, the provisioning manager **28** responds at block **1207** by downloading the content using the provisioning protocol of the selected provisioning model (e.g., COD OTA, Openwave Download Fun, MIDP OTA, etc.)

Download Manager Deployment Architecture

[0104] FIG. 13 shows an example of the software deployment architecture of the download manager **1** at a high level, according to an embodiment of the invention. Each instance of the download manager **1** resides on a host **131** that has access to a database **140**. The host **131** is a server-class computer system including an operating system (e.g., Solaris). The database **140** may represent multiple physical databases, which in aggregate store all of the data used by the download manager **1** (i.e., product information, subscriber information, partner information, domain information, etc.). In the illustrated embodiment, each host **131** includes a Java Virtual Machine (JVM) **132** which runs on top of the operating system and which hosts an application server **133**. On top of the application server **133** is a Web container **134** that contains Java Server Pages (JSPs) **135** and servlets **136** as well as application components **137** including the business logic and data access layer **138** of the download manager **1**.

[0105] The download manager **1** is formed by the Web container **134** and its contents, the application components **137**, and at least a portion of the database **140**. Horizontal scaling can be achieved by adding more hosts**131** hosting instances of the download manager **1**. In that case, an Internet Protocol (IP) load balancer **139** provides sticky load balancing, i.e., directing all session-specific traffic to the same host.

[0106] The above-described software architecture (i.e., the download manager) can be implemented in one or more conventional server-class computer systems. FIG. 14 illustrates the hardware architecture of such a computer system at a high-level. Note that this architecture is also representative of at least some client devices that access the download manager **1**. Note also that FIG. 14 is a conceptual representation which represents any of numerous possible specific physical arrangements of hardware components; however, the details of such arrangements are not germane to the present invention and are well within the knowledge of those skilled in the art.

[0107] The processing system shown in FIG. 14 includes one or more processors **140**, i.e. a central processing unit (CPU), read-only memory (ROM) **141**, and random access memory (RAM) **142**, each connected to a bus system **146**. Also coupled to the bus system **146** are a mass storage device **143**, a data communication device **144**, and in some embodiments, one or more additional input/output (I/O) devices **145**.

[0108] The processor(s) **140** may be, or may include, one or more programmable general-purpose or special-purpose microprocessors or digital signal processors (DSPs), microcontrollers, application specific integrated circuits (ASICs), programmable logic devices (PLDs), or a combination of such devices. The bus system **146** includes one or more buses or other physical connections, which may be connected to each other through various bridges, bus controllers and/or adapters such as are well-known in the art. For example, the bus system **146** may include a "system bus", which may be connected through one or more adapters to one or more expansion buses, such as a Peripheral Component Interconnect (PCI) bus, HyperTransport or industry standard architecture (ISA) bus, small computer system interface (SCSI) bus, universal serial bus (USB), or Institute of Electrical and Electronics Engineers (IEEE) standard 1394 bus (sometimes referred to as "Firewire"). In alternative embodiments, some or all of the aforementioned components may be connected to each other directly, rather than through a bus system.

[0109] The mass storage device **143** may be, or may include, any one or more devices suitable for storing large volumes of data in a non-volatile manner, such as a magnetic disk or tape, magneto-optical (MO) storage device, or any of various types of Digital Versatile Disk (DVD) or Compact Disk (CD) based storage, or a combination of such devices.

[0110] The data communication device **144** is a device suitable for enabling the processing system to communicate data with a remote processing system over a data communication link **148**, and may be, for example, a conventional telephone modem, a wireless modem, an Integrated Services Digital Network (ISDN) adapter, a Digital Subscriber Line (DSL) modem, a cable modem, a radio transceiver, a satellite transceiver, an Ethernet adapter, or the like.

[0111] The I/O devices **145** (which may be omitted in a system that operates exclusively as a server and provides no direct local user interface) may include, for example, one or more devices such as: a pointing device such as a mouse, trackball, touchpad, or the like; a keyboard; audio speakers; and/or a display device such as a cathode ray tube (CRT), a liquid crystal display (LCD), or the like. Other variations upon the illustrated set of components can be implemented in a manner consistent with the invention.

[0112] Software (including instructions and data) **147** to implement the techniques described above may be stored in one or more of ROM **141**, RAM **142**, and mass storage device **143**. In certain embodiments, the software **147** may be initially loaded into the processing system by downloading it from a remote system through the communication device **144**.

[0113] Thus, a system and method for managing the publication, purchase and delivery of digital content from multiple content suppliers to multiple wireless services subscribers in multiple domains have been described. Although the present invention has been described with reference to specific exemplary embodiments, it will be recognized that the invention is not limited to the embodiments described, but can be practiced with modification and alteration within the spirit and scope of the appended claims. Accordingly, the specification and drawings are to be regarded in an illustrative sense rather than a restrictive sense.

Original

Classifications

IPC	CPC	US Class	ECLA	ICO
H04M3/00	G06Q20/12	455/419	H04W28/06	T04L29:08A7
G06F17/30	G06Q20/123	455/414.1	G06F17/30W9V	T04L463:102
G06Q20/12	G06Q20/1235	455/418	G06Q20/12	T04W8:24N
G06Q20/32	G06Q20/322	707/E17.121	G06Q20/123	
G07F17/16	H04L63/104		G06Q20/1235	
H04L12/28	H04L2463/102		G06Q20/322	
H04L12/56	H04M3/42178		H04L29/06	
H04L29/06	H04W8/245		H04L29/06S10C	
H04L29/08	H04W28/06		H04L29/08N3	
H04M3/42	H04L67/303		H04L29/08N27E	
	H04L67/04		H04L29/08N27S	
	H04L69/329		H04L29/08N29T	
	G06F16/9577		H04L63/10C	
	H04L67/564		H04M3/42E5	
	H04L67/568			
	H04L9/40			

Persons

Ultimate Owner

Original
VIDEOLABS INC (/api/control?query=uo:("VIDEOLABS%20INC")&autosearch=true)

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Legal information

Standardized Post issuance INPADOC

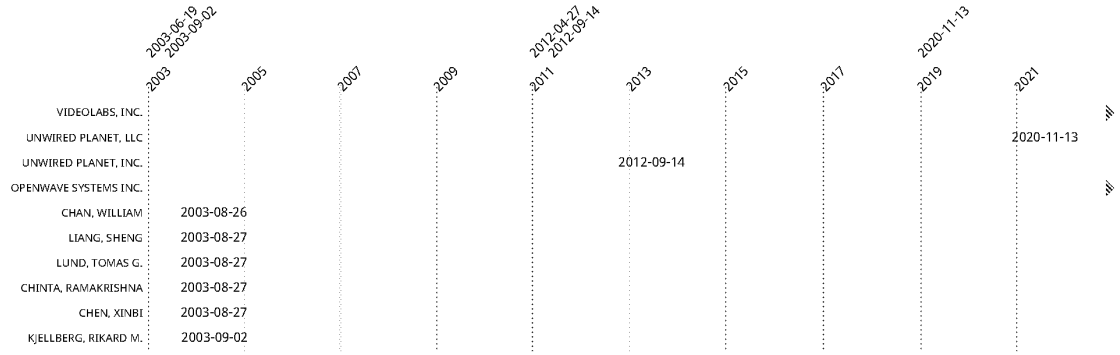
Legal status

Event	Date	Description
Granted	2007-06-19	GRANTED
Filed	2003-06-19	FILED

Designated states

Date	Event code	Description

Ownership



Payment status

Date	Status	Event code	Description
2018-12-11	Fee paid	M1553	PAYMENT OF MAINTENANCE FEE, 12TH YEAR, LARGE ENTITY.
2014-12-11	Fee paid	M1552	PAYMENT OF MAINTENANCE FEE, 8TH YEAR, LARGE ENTITY.
2010-12-20	Fee paid	M1551	PAYMENT OF MAINTENANCE FEE, 4TH YEAR, LARGE ENTITY.

Litigation/Opposition

Docket number	Docket description	Court	Date Filed

1:21cv1448	Starz Entertainment, Llc V. Vl Collective Ip, Llc Et Al	United States District Court, Delaware	2021-10-12
3:12cv505	Unwired Planet, Llc V. Apple, Inc.	United States District Court, Nevada	2012-09-18
3:13cv4134	Unwired Planet, Llc V. Apple, Inc.	United States District Court, California Northern	2013-09-05
4:13cv4134	Unwired Planet, Llc V. Apple, Inc.	US District Court for the Northern District of California	2013-09-05
15-1795	Unwired Planet, LLC v. Apple Inc.	US Court of Appeals for the Federal Circuit	2015-07-05
15-1725	Unwired Planet, LLC v. Apple Inc.	US Court of Appeals for the Federal Circuit	2015-06-10

Page: 1

Pharmaceuticals

Product	Type	Active Ingredient	Applicant	Application No.	Application Type	Approval Date	Patent Expiry Date	Patent usage code	Exclusivity Code	Exclusivity Date	Dosage	Strength	Product Number	Route	RLD	Patent Delist Requested	Exclu Text

No pharmaceuticals data

Citations

Display in a list {/api/control?citationsSearch= }

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User Name: Renee Preston
Date and Time: Thursday, June 23, 2022 6:37:00 PM EDT
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Documents (2)

1. *California Inventors Develop Network Server System*

   Client/Matter: -None-

   Search Terms: 7233790 or 7,233,790

   Search Type: Terms and Connectors

   Narrowed by:

Content Type	Narrowed by
News	-None-

2. *Unwired Planet Charges Apple and Google With Infringing 20 Patents Federal Complaint against Apple Cites 10 Mobility Patents Separate Federal Complaint against Google Cites 10 Different Patents*

   Client/Matter: -None-

   Search Terms: 7233790 or 7,233,790

   Search Type: Terms and Connectors

   Narrowed by:

Content Type	Narrowed by
News	-None-

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California Inventors Develop Network Server System

US Fed News

June 19, 2007 Tuesday 5:49 AM EST

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Length: 319 words

Byline: US Fed News

Dateline: Alexandria, Va.

Body

ALEXANDRIA, Va., June 19 -- Rikard M. Kjellberg of Santa Cruz, Calif., Sheng Liang of Cupertino, Calif., Tomas G. Lund of Menlo Park, Calif., William Chan of San Mateo, Calif., Ramakrishna Chinta of Sunnyvale, Calif., and Xinbi Chen of Palo Alto, Calif., have developed a device capability based discovery, packaging and provisioning of content for wireless mobile devices.

According to the U.S. Patent & Trademark Office: "A network server system includes a download manager that manages the publication, purchase and delivery of digital products from multiple suppliers to wireless services subscribers in multiple domains. Product suppliers can publish and manage their products on the server system via a computer network and make their products available to the subscribers for purchase or licensing."

An abstract of the invention, released by the Patent Office, said: "The subscribers in each domain can access the server remotely to purchase rights to download and use the products on associated wireless communication devices. Multiple different implementations of any product can be maintained, where each implementation corresponds to a different set of device capabilities. Each product can also be associated with multiple different provisioning models, each corresponding to a different set of device capabilities."

The inventors were issued U.S. Patent No. ***7,233,790*** on June 19.

The patent has been assigned to Openwave Systems Inc., Redwood City, Calif.

The original application was filed on June 19, 2003, and is available at: http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO1&Sect2=HITOFF&d=PALL&p=1&u=%2Fnetahtml%2FPTO%2Fsrchnum.htm&r=1&f=G&l=50&s1=7,233,790.PN.&OS=PN/7,233,790&RS=PN/7,233,790.

For more information about US Fed News federal patent awards please contact: Myron Struck, Managing Editor/US Bureau, US Fed News, Direct: 703/866-4708, Cell: 703/304-1897, Myron@largefednews.com

For any query with respect to this article or any other content requirement, please contact Editor at htsyndication@hindustantimes.com

Load-Date: June 19, 2007

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Renee Preston

Unwired Planet Charges Apple and Google With Infringing 20 Patents; Federal Complaint against Apple Cites 10 Mobility Patents; Separate Federal Complaint against Google Cites 10 Different Patents

Business Wire

September 20, 2012 Thursday 12:45 PM GMT

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Distribution: Business Editors; Technology Editors

Length: 2084 words

Dateline: RENO, Nev.

Body

Unwired Planet, Inc. (NASDAQ: UPIP), through its Nevada-based subsidiary, Unwired Planet LLC, today announced it has filed patent infringement complaints against Apple Inc. and Google Inc. in the U.S. District Court for the District of Nevada. The suits were filed by Unwired Planet to protect its intellectual property (IP) licensing business.

In two separate complaints filed in Reno, Nevada, Unwired Planet charges Apple with infringing 10 of its patents, and charges Google with infringing 10 different patents. Together, the two cases charge infringement of a total of 20 patents related to smart mobile devices, cloud computing, digital content stores, push notification technologies and location-based services such as mapping and advertising.

"Today's actions follow a careful review that we launched in late 2011 as we began to transform Unwired Planet into an Intellectual Property company," said Mike Mulica, CEO of Unwired Planet. "This litigation marks a key step in our multi-pronged strategy to maximize shareholder value through the licensing of our robust portfolio of patents and to protect our IP through litigation against unlicensed parties as necessary."

"Apple and Google generate substantial revenues from devices and services that rely on the intellectual property that Unwired Planet developed and patented over the last 15 years. They should compensate us for the use of our patented technologies, which are foundational to mobility," Mulica said. "As we have recently announced, we are relocating our operations to Nevada, a business-friendly, cost-effective and convenient location. Nevada has been chosen as one of 14 districts across the United States as a pilot patent district and it has developed specialized procedures to handle complex patent cases. As a result, we believe the Nevada district will be an ideal venue to resolve this matter with efficiency and expertise."

Unwired Planet, founded in 1994, has been at the forefront of the mobile internet since the mid-1990s. It was one of the founders of the Wireless Application Protocol alliance, and has invented and patented technologies at the forefront of mobile communications. The company has been awarded approximately 200 U.S. and foreign patents and has approximately 75 pending applications. This IP encompasses some of the basic technologies that have enabled the deployment of mobile Internet browsing, the creation of the first technology that enabled photo messaging, and the launch of the world's first Wireless Access Protocol (WAP), among many other innovations.

"The extensive number of patents named in the complaints against Apple and Google, together with the four patents pending in another case filed last year before the International Trade Commission against Apple and RIM - and their foundational nature - showcase the breadth and depth of our portfolio, which includes inventions key to mobility, including smart devices, cloud and push technologies, location-based advertising and services, and application and content access," said Mulica.

Renee Preston

In the case against Apple, the complaint specifically alleges that infringing Apple products and services include, among others:

- Mobile Devices (including mobile phones, tablets, and music players with the iOS operating system including iPhones, iPads, and iPods),
- Mobile Digital Content Systems and/or Services (including Apple App Store, Apple Apps, iTunes),
- Cloud Messaging Systems and/or Services (including Apple Push Notification Service (APNS), Siri), and
- Map and Location Systems and/or Services (including Apple Maps, Local Search, iAds, Safari web browser, Find My iPhone, Find My iPad, and Find My Friends).

The patents asserted against Apple are:

1. United States Patent No. 6,317,594, entitled "System and method for providing data to a wireless device upon detection of activity of the device on a wireless network," asserted against devices such as iPhones and iPads which are able to get information, for example update notifications, when the device is switched on or moves between cells of the cellular network.

2. United States Patent No. 6,317,831, entitled "Method and apparatus for establishing a secure connection over a one-way data path," asserted against services which use a push mechanism to get notifications to devices such as update badges sent to iPhone and iPad applications.

3. United States Patent No. 6,321,092, entitled "Multiple input data management for wireless location-based applications," asserted against devices such as iPhones and iPads which use more than one source of location information, for example GPS, Wi-Fi and cell tower location.

4. United States Patent No. 6,532,446, entitled "Server based speech recognition user interface for wireless devices," asserted against wireless server-assisted speech recognition for personal assistant services and dictation, such as Siri on iPhones and iPads.

5. United States Patent No. 6,647,260, entitled "Method and System Facilitating Web Based Provisioning of Two-Way Mobile Communications Devices," asserted against Appstores for selecting and downloading applications on devices such as iPhones and iPads.

6. United States Patent No. 6,813,491, entitled "Method and apparatus for adapting settings of wireless communication devices in accordance with user proximity," asserted against ways of using motion and proximity sensors to control devices like iPhones and iPads.

7. United States Patent No. 7,020,685, entitled "Method and apparatus for providing internet content to SMS-based wireless devices," asserted against automated searching and information delivery based on keywords in a message from a mobile device, for example as used in Siri for iPhones and iPads.

8. United States Patent No. ***7,233,790***, entitled "Device capability based discovery, packaging and provisioning of content for wireless mobile devices," asserted against digital stores with content and Apps for devices with different capabilities, for example the App Store for iPhones and iPads.

9. United States Patent No. 7,299,033, entitled "Domain-based management of distribution of digital content from multiple wireless services subscribers," asserted against services such as iTunes or the App Store that distribute digital content to multiple domains, internationally.

10. United States Patent No. 7,522,927, entitled "Interface for wireless location information," asserted against ways of obtaining device location information such as Find my iPhone, Find my iPad and Find my Friends.

The complaint against Google specifically alleges that infringing Google products and services include, among others:

- Search and Advertising Systems and/or Services (including Google Search, Google AdWords, Google+Local, Google Places, Google Mobile Ads),
- Mobile Digital Content Systems and/or Services (including Google Play, Google Apps, Bouncer, C2DM, and GCM),
- Cloud Messaging Systems and/or Services (including C2DM and GCM),
- Maps and Location Systems and/or Services (including Android Location, Google Maps, Google Street View, Google Latitude, Google My Location, Google+, Google+Local, Google Places),
- Short-Range Radio Communications Systems and/or Services (including Google Wallet, Google Offers, and Google Mobile Ads), and
- Mobile Devices (including mobile phones and tablets with the Android operating system, including Motorola Mobility and Nexus mobile phones and tablets).

The patents asserted against Google are:

1. United States Patent No. 6,292,657, entitled "Method and Architecture for Managing a Fleet of Mobile Stations Over Wireless Data Networks," asserted against mass updates to applications installed on devices such as Android phones and tablets.

2. United States Patent No. 6,654,786, entitled "Method and Apparatus for Informing Wireless Clients about Updated Information," asserted against push mechanisms to get updated information to devices such as Android phones and tablets.

3. United States Patent No. 6,662,016, entitled "Providing Graphical Location Information for Mobile Resources Using a Data-Enabled Network," asserted against placing a location marker for the current location of a mobile device on a corresponding map, such as My Location in Google Maps.

4. United States Patent No. 6,684,087, entitled "Method and Apparatus for Displaying Images on Mobile Devices," asserted against zooming into a map on devices such as Android phones and tablets, and providing zoomed-in images to users of Google Maps.

5. United States Patent No. 6,895,240, entitled "Method and Architecture for Managing a Fleet of Mobile Stations over Wireless Data Networks," asserted against group and mass notifications/updates to mobile devices such as Android phones and tablets.

6. United States Patent No. 6,944,760, entitled "Method and Apparatus for Protecting Identities of Mobile Devices on a Wireless Network," asserted against authenticated push of information from application developers to devices such as Android phones and tablets.

7. United States Patent No. 7,024,205, entitled "Subscriber Delivered Location-Based Services," asserted against search and advertising using location, such as sponsored links in Google searches which are paid for using Google Adwords.

8. United States Patent No. 7,035,647, entitled "Efficient Location Determination for Mobile Units," asserted against identifying the location of a device, such as an Android phone or tablet, with increased accuracy using multiple sources, such as GPS, Wi-Fi and cell tower location.

9. United States Patent No. 7,203,752, entitled "Method and System for Managing Location Information for Wireless Communications Devices," asserted against privacy control for applications requesting access to the location to a device, such as an Android phone or tablet.

10. United States Patent No. 7,463,151, entitled "Systems and Methods for Providing Mobile Services Using Short-Range Radio Communication Devices," asserted against devices with advanced Near Field Communications (NFC) services, such as NFC-based commerce, advertising and coupons, and access to content using NFC.

About Unwired Planet

Unwired Planet, Inc. (NASDAQ: UPIP) is the inventor of the mobile Internet. Unwired Planet established many of the foundational patents that allow mobile devices to connect to the Internet. Over the years, the company has amassed a patent portfolio of approximately 200 issued US and foreign patents and approximately 75 pending applications, many of which are considered foundational to mobile communications, and span smart devices, cloud technologies and unified messaging.

Cautionary Language Regarding Forward-Looking Statements

This press release contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934, including statements regarding Unwired Planet's expectations regarding its plans and strategic direction. All statements other than statements of historical fact contained in this press release are forward-looking statements. In some cases, you can identify forward-looking statements by terminology such as "may," "will," "should," "expects," "plans," "anticipates," "believes," "estimates," "predicts," "potential" or "continue" or the negative of these terms or other comparable terminology. These statements are only current predictions and are subject to known and unknown risks, uncertainties and other factors that may cause Unwired Planet's actual results, levels of activity, performance or achievements to be materially different from those anticipated by the forward-looking statements. These forward-looking statements are subject to a number of risks, including the ability of Unwired Planet to realize anticipated results of its plan and strategy, the ability of Unwired Planet to implement and execute its plan and strategy as well as those risk factors discussed in filings with the U.S. Securities and Exchange Commission ("SEC"), including but not limited to the Company's Annual Report on Form 10-K filed on September 7, 2012, and any subsequently filed reports on Forms 10-Q and 8-K. Unwired Planet undertakes no duty to update or revise any of the forward-looking statements, whether as a result of new information, future events or otherwise, after the date of this press release.

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Load-Date: September 21, 2012

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Date and Time: Thursday, June 23, 2022 6:17:00 PM EDT
Job Number: 173888504

Document (1)

1. *4:13cv4134, Unwired Planet, Llc V. Apple, Inc.*
   Client/Matter: -None-
   Search Terms: 7233790 or 7,233,790
   Search Type: Terms and Connectors
   Narrowed by:

Content Type	Narrowed by
Dockets	-None-

4:13cv4134, Unwired Planet, Llc V. Apple, Inc.

US District Court Docket

US District Court for the California Northern District

(Oakland)

This case was retrieved on 04/02/2014

Header

Case Number: 4:13cv4134
Date Filed: 09/06/2013
Assigned To: Honorable Yvonne Gonzalez Rogers
Nature of Suit: ***Patent*** (830)
Cause: ***Patent*** Infringement
Lead Docket: None
Other Docket: Nevada, 3:12-cv-00505
Jurisdiction: Federal Question

Class Code: Open
Statute: 15:1126
Jury Demand: Both
Demand Amount: $0
NOS Description: ***Patent***

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Apple Inc **Counter-claimant**	Steven Michael Kalogeras , LEAD ATTORNEY;PRO HAC VICE;ATTORNEY TO BE NOTICED Gibson Dunn and Crutcher LLP 200 Park Ave New York, NY 10166 USA 212-351-3834 Fax: Email:Skalogeras@gibsondunn.Com Brooke Myers Wallace , ATTORNEY TO BE NOTICED Gibson Dunn and Crutcher LLP 333 South Grand Ave. Los Angeles, CA 90071 USA 213-229-7074 Fax: Email:Bwallace@gibsondunn.Com E. Leif Reid [Terminated: 03/24/2014] Lewis and Roca, LLP 50 W. Liberty Street Suite 410 Reno, NV 89501 USA 775-321-3415 Fax: 775-823-2929 Email:Lreid@lrlaw.Com Etai Lahav , [Terminated: 08/19/2013] Radulescu LLP 136 Madison Avenue 6th Floor New York, NY 10016 USA 646-502-5957 Fax: 646-502-5959 Email:Etai@radulescullp.Com H. Mark Lyon ATTORNEY TO BE NOTICED

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Proceedings

#	Date	Proceeding Text	Source
1	09/19/2012	COMPLAINT against Apple, Inc. (Filing fee $ 350 receipt number 0978-2527930), filed by Unwired Planet, LLC. Certificate of Interested Parties due by 9/29/2012. Proof of service due by 1/17/2013. (Attachments: # 1 Exhibit A, # 2 Exhibit B, # 3 Exhibit C, # 4 Exhibit D, # 5 Exhibit E, # 6 Exhibit F, # 7 Exhibit G, # 8 Exhibit H, # 9 Exhibit I, # 10 Exhibit J, # 11 Civil Cover Sheet, # 12 Summons) (Rounds, Michael) Modified on 9/20/2012 to reflect that Summons was issued on 9/20/2012 (HJ). (Entered: 09/19/2012)	
2	09/20/2012	NOTICE TO COUNSEL PURSUANT TO LOCAL RULE IA 10-2. Counsel Theodore Stevenson III to comply with completion and electronic filing of the Designation of Local Counsel and Verified Petition. For your convenience, click on the following link to obtain the form from the Court's website - www.nvd.uscourts.gov/Forms.aspx. Counsel is also required to register for the Court's Case Management and Electronic Case Filing (CM/ECF) system and the electronic service of pleadings. Please visit the Court's website www.nvd.uscourts.gov to register Attorney(s). Verified Petition due by 11/4/2012.(no image attached) (WJ) (Entered: 09/20/2012)	
3	09/20/2012	NOTICE TO COUNSEL PURSUANT TO LOCAL RULE IA 10-2. Counsel Kevin Burgess to comply with completion and electronic filing of the Designation of Local Counsel and Verified Petition. For your convenience, click on the following link to obtain the form from the Court's website - www.nvd.uscourts.gov/Forms.aspx. Counsel is also required to register for the Court's Case Management and Electronic Case Filing (CM/ECF) system and	

#	Date	Proceeding Text	Source
		the electronic service of pleadings. Please visit the Court's website www.nvd.uscourts.gov to register Attorney(s). Verified Petition due by 11/4/2012.(no image attached) (WJ) (Entered: 09/20/2012)	
4	09/20/2012	NOTICE TO COUNSEL PURSUANT TO LOCAL RULE IA 10-2. Counsel Pierre Hubert to comply with completion and electronic filing of the Designation of Local Counsel and Verified Petition. For your convenience, click on the following link to obtain the form from the Court's website - www.nvd.uscourts.gov/Forms.aspx. Counsel is also required to register for the Court's Case Management and Electronic Case Filing (CM/ECF) system and the electronic service of pleadings. Please visit the Court's website www.nvd.uscourts.gov to register Attorney(s). Verified Petition due by 11/4/2012.(no image attached) (WJ) (Entered: 09/20/2012)	
	09/20/2012	Case assigned to Chief Judge Robert C. Jones and Magistrate Judge Valerie P. Cooke. Nature of Suit: 830 ***Patent*** Case (WJ) (Entered: 09/20/2012)	
5	09/20/2012	AO 120 - REPORT on the filing or determination of an action regarding a ***patent*** or trademark. E-mailed to the US ***Patent*** and Trademark Office. (Attachments: # 1 Complaint) (HJ) (Entered: 09/20/2012)	
6	09/20/2012	SUMMONS ISSUED as to Apple, Inc. re 1 Complaint. (HJ) (Entered: 09/20/2012)	
7	09/28/2012	CERTIFICATE of Interested Parties filed by Unwired Planet, LLC that identifies all parties that have an interest in the outcome of this case. Corporate Parent Unwired Planet, Inc., Corporate Parent Unwired Planet IP Holdings, Inc. for Unwired Planet, LLC added.. (Yowell, Adam) (Entered: 09/28/2012)	
8	10/12/2012	SUMMONS Returned Executed by Unwired Planet, LLC. Unwired Planet, LLC served on 10/9/2012, answer due 10/30/2012. (Rounds, Michael) (Entered: 10/12/2012)	
9	10/23/2012	STIPULATION FOR EXTENSION OF TIME (First Request) by Defendant Apple, Inc.. (Fountain, Jonathan) (Entered: 10/23/2012)	
10	10/24/2012	ORDER ON STIPULATION re 9 Stipulation to Extend Time to Answer, Move, or Otherwise Respond to Complaint. Apple, Inc. answer due 11/29/2012. Signed by Magistrate Judge Valerie P. Cooke on 10/24/12. (Copies have been distributed pursuant to the NEF - JC) (Entered: 10/24/2012)	
11	10/29/2012	VERIFIED PETITION for Permission to Practice Pro Hac Vice by Theodore Stevenson, III and DESIGNATION of Local Counsel Michael D. Rounds (Filing fee $ 200 receipt number 0978-2578210) filed by Plaintiff Unwired Planet, LLC. Motion ripe 10/29/2012. (Rounds, Michael) (Entered: 10/29/2012)	
12	10/29/2012	VERIFIED PETITION for Permission to Practice Pro Hac Vice by Pierre Hubert and DESIGNATION of Local Counsel Michael D. Rounds (Filing fee $ 200 receipt number 0978-2578224) filed by Plaintiff Unwired Planet, LLC. Motion ripe 10/29/2012. (Rounds, Michael) (Entered: 10/29/2012)	
13	10/29/2012	VERIFIED PETITION for Permission to Practice Pro Hac Vice by Kevin Burgess and DESIGNATION of Local Counsel Michael D. Rounds (Filing fee $ 200 receipt number 0978-2578233) filed by Plaintiff Unwired Planet, LLC. Motion ripe 10/29/2012. (Rounds, Michael) (Entered: 10/29/2012)	
14	11/01/2012	ORDER APPROVING 11 Verified Petition for Permission to Practice Pro Hac Vice for Theodore Stevenson, III, and approving Designation of Local Counsel Michael Rounds. Signed by Chief Judge Robert C. Jones on 11/1/12. Any Attorney not yet registered with the Court's CM/ECF System shall submit a Registration Form on the Court's website www.nvd.uscourts.gov (Copies have been distributed pursuant to the NEF - JC) (Entered:	

#	Date	Proceeding Text	Source
		11/02/2012)	
15	11/01/2012	ORDER APPROVING 12 Verified Petition for Permission to Practice Pro Hac Vice for Pierre J. Hubert and approving Designation of Local Counsel Michael Rounds. Signed by Chief Judge Robert C. Jones on 11/1/12. Any Attorney not yet registered with the Court's CM/ECF System shall submit a Registration Form on the Court's website www.nvd.uscourts.gov (Copies have been distributed pursuant to the NEF - JC) (Entered: 11/02/2012)	
16	11/01/2012	ORDER APPROVING 13 Verified Petition for Permission to Practice Pro Hac Vice for Kevin L. Burgess and approving Designation of Local Counsel Michael Rounds. Signed by Chief Judge Robert C. Jones on 11/1/12. Any Attorney not yet registered with the Court's CM/ECF System shall submit a Registration Form on the Court's website www.nvd.uscourts.gov (Copies have been distributed pursuant to the NEF - JC) (Entered: 11/02/2012)	
17	11/15/2012	VERIFIED PETITION for Permission to Practice Pro Hac Vice by H. Mark Lyon and DESIGNATION of Local Counsel Jonathan W. Fountain (Filing fee $ 200 receipt number 0978-2604080) by Defendant Apple, Inc.. Motion ripe 11/15/2012. (Fountain, Jonathan) (Entered: 11/15/2012)	
18	11/15/2012	VERIFIED PETITION for Permission to Practice Pro Hac Vice by Stuart M. Rosenberg and DESIGNATION of Local Counsel Jonathan W. Fountain (Filing fee $ 200 receipt number 0978-2604116) by Defendant Apple, Inc.. Motion ripe 11/15/2012. (Fountain, Jonathan) (Entered: 11/15/2012)	
19	11/15/2012	VERIFIED PETITION for Permission to Practice Pro Hac Vice by Y. Ernest Hsin and DESIGNATION of Local Counsel Jonathan W. Fountain (Filing fee $ 200 receipt number 0978-2604127) by Defendant Apple, Inc.. Motion ripe 11/15/2012. (Fountain, Jonathan) (Entered: 11/15/2012)	
20	11/15/2012	VERIFIED PETITION for Permission to Practice Pro Hac Vice by Brooke Wallace and DESIGNATION of Local Counsel Jonathan W. Fountain (Filing fee $ 200 receipt number 0978-2604135) by Defendant Apple, Inc.. Motion ripe 11/15/2012. (Fountain, Jonathan) (Entered: 11/15/2012)	
21	11/15/2012	VERIFIED PETITION for Permission to Practice Pro Hac Vice by Etai Lahav and DESIGNATION of Local Counsel Jonathan W. Fountain (Filing fee $ 200 receipt number 0978-2604141) by Defendant Apple, Inc.. Motion ripe 11/15/2012. (Fountain, Jonathan) (Entered: 11/15/2012)	
22	11/15/2012	VERIFIED PETITION for Permission to Practice Pro Hac Vice by Josh A. Krevitt and DESIGNATION of Local Counsel Jonathan W. Fountain (Filing fee $ 200 receipt number 0978-2604155) by Defendant Apple, Inc.. Motion ripe 11/15/2012. (Fountain, Jonathan) (Entered: 11/15/2012)	
23	11/28/2012	ORDER APPROVING 17 Verified Petition for Permission to Practice Pro Hac Vice for Mark Lyon and approving Designation of Local Counsel Jonathan Fountain. Signed by Chief Judge Robert C. Jones on 11/28/12. Any Attorney not yet registered with the Court's CM/ECF System shall submit a Registration Form on the Court's website www.nvd.uscourts.gov (Copies have been distributed pursuant to the NEF - JC) (Entered: 11/29/2012)	
24	11/28/2012	ORDER APPROVING 18 Verified Petition for Permission to Practice Pro Hac Vice for Stuart Rosenberg and approving Designation of Local Counsel Jonathan Fountain. Signed by Chief Judge Robert C. Jones on 11/28/12. Any Attorney not yet registered with the Court's CM/ECF System shall submit a	

#	Date	Proceeding Text	Source
		Registration Form on the Court's website www.nvd.uscourts.gov (Copies have been distributed pursuant to the NEF - JC) (Entered: 11/29/2012)	
25	11/28/2012	ORDER APPROVING 19 Verified Petition for Permission to Practice Pro Hac Vice for Y. Ernest Hsin and approving Designation of Local Counsel Jonathan Fountain. Signed by Chief Judge Robert C. Jones on 11/28/12. Any Attorney not yet registered with the Court's CM/ECF System shall submit a Registration Form on the Court's website www.nvd.uscourts.gov (Copies have been distributed pursuant to the NEF - JC) (Entered: 11/29/2012)	
26	11/28/2012	ORDER APPROVING 21 Verified Petition for Permission to Practice Pro Hac Vice for Etai Lahav and approving Designation of Local Counsel Jonathan Fountain. Signed by Chief Judge Robert C. Jones on 11/28/12. Any Attorney not yet registered with the Court's CM/ECF System shall submit a Registration Form on the Court's website www.nvd.uscourts.gov (Copies have been distributed pursuant to the NEF - JC) (Entered: 11/29/2012)	
27	11/28/2012	ORDER APPROVING 22 Verified Petition for Permission to Practice Pro Hac Vice for Josh Krevitt and approving Designation of Local Counsel Jonathan Fountain. Signed by Chief Judge Robert C. Jones on 11/28/12. Any Attorney not yet registered with the Court's CM/ECF System shall submit a Registration Form on the Court's website www.nvd.uscourts.gov (Copies have been distributed pursuant to the NEF - JC) (Entered: 11/29/2012)	
28	11/28/2012	ORDER APPROVING 20 Verified Petition for Permission to Practice Pro Hac Vice for Brooke Wallace and approving Designation of Local Counsel Jonathan Fountain. Signed by Chief Judge Robert C. Jones on 11/28/12. Any Attorney not yet registered with the Court's CM/ECF System shall submit a Registration Form on the Court's website www.nvd.uscourts.gov (Copies have been distributed pursuant to the NEF - JC) (Entered: 11/29/2012)	
29	11/29/2012	ANSWER to 1 Complaint,, with Jury Demand (Certificate of Interested Parties due by 12/9/2012., Discovery Plan/Scheduling Order due by 1/13/2013.), COUNTERCLAIM against Unwired Planet, LLC filed by Apple, Inc.. (Attachments: # 1 Exhibit 1, # 2 Exhibit 2, # 3 Exhibit 3, # 4 Exhibit 4, # 5 Exhibit 5, # 6 Exhibit 6, # 7 Exhibit 7, # 8 Exhibit 8, # 9 Exhibit 9, # 10 Exhibit 10, # 11 Exhibit 11, # 12 Exhibit 12, # 13 Exhibit 13, # 14 Exhibit 14, # 15 Exhibit 15, # 16 Exhibit 16, # 17 Exhibit 17, # 18 Exhibit 18)(Fountain, Jonathan) (Entered: 11/29/2012)	
30	11/30/2012	NOTICE PURSUANT TO LOCAL RULE IB 2-2: In accordance with 28 USC § 636(c) and FRCP 73, the parties in this action are provided with a link to the "AO 85 Notice of Availability, Consent, and Order of Reference - Exercise of Jurisdiction by a U.S. Magistrate Judge" form on the Court's website - www.nvd.uscourts.gov. Consent forms should NOT be electronically filed. Upon consent of all parties, counsel are advised to manually file the form with the Clerk's Office. A copy of form AO 85 has been mailed to parties not receiving electronic service. (no image attached) (DRM) (Entered: 11/30/2012)	
31	12/10/2012	CERTIFICATE of Interested Parties filed by Apple, Inc.. There are no known interested parties other than those participating in the case. (Fountain, Jonathan) (Entered: 12/10/2012)	
32	12/21/2012	Plaintiff's ANSWER to 29 Answer to Complaint,,, Counterclaim,, with Certificate of Service filed by Unwired Planet, LLC.(Rounds, Michael) (Entered: 12/21/2012)	
33	01/11/2013	PROPOSED Discovery Plan/Scheduling Order filed by Counter	

#	Date	Proceeding Text	Source
		Defendant Unwired Planet, LLC, Plaintiff Unwired Planet, LLC Special Scheduling Review Requested. (Rounds, Michael) (Entered: 01/11/2013)	
34	01/17/2013	MINUTE ORDER IN CHAMBERS of the Honorable Magistrate Judge Valerie P. Cooke, on 1/17/2013. By Deputy Clerk: LGM. A Case Management Conference is set for 2/4/2013 at 11:00 AM in Reno Courtroom 1 before Magistrate Judge Valerie P. Cooke. Out-of-town and out-of-state counsel shall be allowed to appear telephonically for this hearing and shall advise Lisa Mann at (775)686-5653 at least two (2) days prior of the telephone number at which counsel can be reached for the conference. The parties shall jointly file a case management report by no later than the close of business on Thursday, January 24, 2013. See the attached order for specifications. (Copies have been distributed pursuant to the NEF - LGM) (Entered: 01/17/2013)	
35	01/24/2013	Joint STATUS REPORT CASE MANAGEMENT REPORT by Counter Defendant Unwired Planet, LLC, Plaintiff Unwired Planet, LLC. (Rounds, Michael) (Entered: 01/24/2013)	
36	01/31/2013	MINUTE ORDER IN CHAMBERS of the Honorable Magistrate Judge Valerie P. Cooke, on 1/31/2013. By Deputy Clerk: LGM. Out-of-town and out-of-state counsel appearing telephonically for the case management conference set before this Court on Monday, February 4, 2013 at 11:00 AM shall dial 877-336-1829 at least five (5) minutes prior to the hearing to be properly connected into the courtroom. The Access Code is 2809752 and the Security Code is 125050204. IT IS SO ORDERED. (no image attached) (Copies have been distributed pursuant to the NEF - LGM) (Entered: 01/31/2013)	
37	02/01/2013	MOTION to Transfer by Counter Claimant Apple, Inc., Defendant Apple, Inc.. Responses due by 2/18/2013. (Attachments: # 1 Declaration Mark Buckley, # 2 Declaration Danielle Durkee, # 3 Declaration Brooke Wallace, # 4 Exhibit 1 (Part 1 of 4), # 5 Exhibit 1 (Part 2 of 4), # 6 Exhibit 1 (Part 3 of 4), # 7 Exhibit 1 (Part 4 of 4), # 8 Exhibit 2, # 9 Exhibit 3, # 10 Exhibit 4, # 11 Exhibit 5, # 12 Exhibit 6, # 13 Exhibit 7, # 14 Exhibit 8, # 15 Exhibit 9, # 16 Exhibit 10, # 17 Exhibit 11, # 18 Exhibit 12, # 19 Exhibit 13, # 20 Exhibit 14, # 21 Exhibit 15, # 22 Exhibit 16, # 23 Exhibit 17, # 24 Exhibit 18, # 25 Exhibit 19)(Fountain, Jonathan) (Entered: 02/01/2013)	
38	02/04/2013	SCHEDULING ORDER Minute Order in Chambers of Magistrate Judge Valerie P. Cooke on 2/4/13. Discovery due: 10/7/2013 Please see attached for other deadlines and details. (Copies have been distributed pursuant to the NEF - JC) (Entered: 02/05/2013)	
39	02/04/2013	MINUTES OF PROCEEDINGS - Case Management Conference held on 2/4/2013 before Magistrate Judge Valerie P. Cooke. Crtrm Administrator: LGM; Pla Counsel: Adam Yowell and (By telephone) Michael Rounds, Pierre Hubert and John Shoemaker; Def Counsel: Ernest Hsin, Leif Reid, and Johnathan Fountain; Court Reporter/FTR #: 11:05:44 - 11:23:56; Time of Hearing: 11:05 a.m.; Courtroom: 1; The Court recites the agreement of parties regarding certain protocol and procedures they intend to abide by as they proceed with litigation in this action. The first pre-claim settlement conference is set for Friday, July 12, 2013 at 9:00 AM. Monthly Case Management Conferences are scheduled as follows: 3/15/2013 at 10:00 AM, 4/11/2013 at 09:00 AM, 5/10/2013 at 10:00 AM, 6/10/2013 at 09:00 AM, 7/11/2013 at 10:00 AM, and 8/9/2013 at 09:00 AM all in Reno Courtroom 1 before Magistrate Judge Valerie P. Cooke. Counsel shall file a joint or separate case management report by no later than the close of business three (3) court days prior to each conference. See the attached order for	

#	Date	Proceeding Text	Source
		specifications. (Copies have been distributed pursuant to the NEF - LGM) (Entered: 02/06/2013)	
40	02/11/2013	TRANSCRIPT of Proceedings, 39 Miscellaneous Hearing, held on 2/4/13, before Magistrate Judge Valerie P. Cooke. Court Reporter/Transcriber: Donna Davidson, 775-329-0132. Transcript may be viewed at the court public terminal or purchased through the Court Reporter/Transcriber using the court's "Transcript Order" form available on our website www.nvd.uscourts.gov before the deadline for Release of Transcript Restriction. After that date it may be obtained through PACER Redaction Request due 3/4/2013. Redacted Transcript Deadline set for 3/14/2013. Release of Transcript Restriction set for 5/12/2013. (DD) (Entered: 02/11/2013)	
41	02/14/2013	STIPULATION FOR EXTENSION OF TIME (First Request) re 37 MOTION to Transfer ; TO FILE AND SERVE OPPOSITION TO APPLE INC.'S MOTION TO TRANSFER by Counter Defendant Unwired Planet, LLC, Plaintiff Unwired Planet, LLC. (Rounds, Michael) (Entered: 02/14/2013)	
42	02/14/2013	STIPULATION FOR EXTENSION OF TIME (First Request) FOR SERVING ASSERTED CLAIMS AND INFRINGEMENT CONTENTIONS by Counter Defendant Unwired Planet, LLC, Plaintiff Unwired Planet, LLC. (Rounds, Michael) (Entered: 02/14/2013)	
43	02/19/2013	MINUTE ORDER IN CHAMBERS of the Honorable Magistrate Judge Valerie P. Cooke, on 2/19/2013. By Deputy Clerk: LGM. In light of a conflict with the Court's calendar, the case management conference currently set for 3/15/2013 at 10:00 AM is VACATED and ADVANCED to 3/11/2013 at 09:00 AM in Reno Courtroom 1 before Magistrate Judge Valerie P. Cooke. Counsel shall file a joint or separate case management report by no later than the close of business on Wednesday, March 6, 2013. IT IS SO ORDERED. (no image attached) (Copies have been distributed pursuant to the NEF - LGM) (Entered: 02/19/2013)	
44	02/19/2013	VERIFIED PETITION for Permission to Practice Pro Hac Vice by John Shumaker and DESIGNATION of Local Counsel Michael D. Rounds (Filing fee $ 200 receipt number 0978-2710416) filed by Counter Defendant Unwired Planet, LLC, Plaintiff Unwired Planet, LLC. Motion ripe 2/19/2013. (Rounds, Michael) (Entered: 02/19/2013)	
45	02/19/2013	VERIFIED PETITION for Permission to Practice Pro Hac Vice by James E. Quigley and DESIGNATION of Local Counsel Michael D. Rounds (Filing fee $ 200 receipt number 0978-2710423) filed by Counter Defendant Unwired Planet, LLC, Plaintiff Unwired Planet, LLC. Motion ripe 2/19/2013. (Rounds, Michael) (Entered: 02/19/2013)	
46	02/19/2013	VERIFIED PETITION for Permission to Practice Pro Hac Vice by Mieke Malmberg and DESIGNATION of Local Counsel Michael D. Rounds (Filing fee $ 200 receipt number 0978-2710432) filed by Counter Defendant Unwired Planet, LLC, Plaintiff Unwired Planet, LLC. Motion ripe 2/19/2013. (Rounds, Michael) (Entered: 02/19/2013)	
47	02/19/2013	VERIFIED PETITION for Permission to Practice Pro Hac Vice by John F. Garvish and DESIGNATION of Local Counsel Michael D. Rounds (Filing fee $ 200 receipt number 0978-2710438) filed by Counter Defendant Unwired Planet, LLC, Plaintiff Unwired Planet, LLC. Motion ripe 2/19/2013. (Rounds, Michael) (Entered: 02/19/2013)	
48	02/19/2013	VERIFIED PETITION for Permission to Practice Pro Hac Vice by Mario A. Apreotesi and DESIGNATION of Local Counsel Michael	

#	Date	Proceeding Text	Source
		D. Rounds (Filing fee $ 200 receipt number 0978-2710440) filed by Counter Defendant Unwired Planet, LLC, Plaintiff Unwired Planet, LLC. Motion ripe 2/19/2013. (Rounds, Michael) (Entered: 02/19/2013)	
49	02/20/2013	VERIFIED PETITION for Permission to Practice Pro Hac Vice by Ryan James Cudnik and DESIGNATION of Local Counsel Michael D. Rounds (Filing fee $ 200 receipt number 0978-2711052) filed by Counter Defendant Unwired Planet, LLC, Plaintiff Unwired Planet, LLC. Motion ripe 2/20/2013. (Rounds, Michael) (Entered: 02/20/2013)	
50	02/21/2013	ORDER on Stipulation 41 re 37 MOTION to Transfer filed by Apple, Inc., (Responses due by 3/6/2013.) Signed by Chief Judge Robert C. Jones on 02/21/13. (Copies have been distributed pursuant to the NEF - LG) (Entered: 02/21/2013)	
51	02/21/2013	ORDER ON STIPULATION re 42 Stipulation, GRANTING extention of time for serving asserted claims and infringement contentions. Signed by Chief Judge Robert C. Jones on 02/21/13. (Copies have been distributed pursuant to the NEF - LG) (Entered: 02/21/2013)	
52	02/21/2013	ORDER granting 44 Verified Petition for Permission to Practice Pro Hac Vice for Attorney John Shumaker for Unwired Planet, LLC and approving Designation of Local Counsel. Signed by Chief Judge Robert C. Jones on 02/21/13. Any Attorney not yet registered with the Court's CM/ECF System shall submit a Registration Form on the Court's website www.nvd.uscourts.gov (Copies have been distributed pursuant to the NEF - LG) (Entered: 02/21/2013)	
53	02/21/2013	ORDER granting 45 Verified Petition for Permission to Practice Pro Hac Vice for Attorney James E. Quigley for Unwired Planet, LLC and approving Designation of Local Counsel. Signed by Chief Judge Robert C. Jones on 02/21/13. Any Attorney not yet registered with the Court's CM/ECF System shall submit a Registration Form on the Court's website www.nvd.uscourts.gov (Copies have been distributed pursuant to the NEF - LG) (Entered: 02/21/2013)	
54	02/21/2013	ORDER granting 46 Verified Petition for Permission to Practice Pro Hac Vice for Attorney Mieke Malmberg for Unwired Planet and approving Designation of Local Counsel. Signed by Chief Judge Robert C. Jones on 02/21/13. Any Attorney not yet registered with the Court's CM/ECF System shall submit a Registration Form on the Court's website www.nvd.uscourts.gov (Copies have been distributed pursuant to the NEF - LG) (Entered: 02/21/2013)	
55	02/21/2013	ORDER granting 47 Verified Petition for Permission to Practice Pro Hac Vice for Attorney John F. Garvish for Unwired Planet, LLC and approving Designation of Local Counsel. Signed by Chief Judge Robert C. Jones on 02/21/13. Any Attorney not yet registered with the Court's CM/ECF System shall submit a Registration Form on the Court's website www.nvd.uscourts.gov (Copies have been distributed pursuant to the NEF - LG) (Entered: 02/21/2013)	
56	02/21/2013	ORDER granting 48 Verified Petition for Permission to Practice Pro Hac Vice for Attorney Mario A. Apreotesi for Unwired Planet, LLC and approving Designation of Local Counsel. Signed by Chief Judge Robert C. Jones on 02/21/13. Any Attorney not yet registered with the Court's CM/ECF System shall submit a Registration Form on the Court's website www.nvd.uscourts.gov (Copies have been distributed pursuant to the NEF - LG) (Entered: 02/21/2013)	
57	02/21/2013	MINUTE ORDER IN CHAMBERS of the Honorable Chief Judge	

#	Date	Proceeding Text	Source
		Robert C. Jones, on February 21, 2013, by Carrie Lipparelli, Judicial Assistant. IT IS HEREBY ORDERED that 49 Verified Petition for Permission to Practice Pro Hac Vice and approving Designation of Local Counsel for Ryan James Cudnik is DENIED. IT IS SO ORDERED. Signed by Chief Judge Robert C. Jones. (Copies have been distributed pursuant to the NEF - CL) (Entered: 02/21/2013)	
58	02/28/2013	VERIFIED PETITION for Permission to Practice Pro Hac Vice by John B. Campbell and DESIGNATION of Local Counsel Michael D. Rounds (Filing fee $ 200 receipt number 0978-2721753) filed by Counter Defendant Unwired Planet, LLC. Plaintiff Unwired Planet, LLC. Motion ripe 2/28/2013. (Rounds, Michael) (Entered: 02/28/2013)	
59	03/01/2013	ORDER APPROVING 58 Verified Petition for Permission to Practice Pro Hac Vice by Attorney John B. Campbell for Unwired Planet, LLC. and approving Designation of Local Counsel Michael D. Rounds. Signed by Chief Judge Robert C. Jones on 03/01/2013. Any Attorney not yet registered with the Court's CM/ECF System shall submit a Registration Form on the Court's website www.nvd.uscourts.gov (Copies have been distributed pursuant to the NEF - KR) (Entered: 03/01/2013)	
60	03/05/2013	MINUTE ORDER IN CHAMBERS of the Honorable Magistrate Judge Valerie P. Cooke, on 3/5/2013. By Deputy Clerk: LGM. Out-of-town counsel shall be allowed to appear telephonically at the case management conference set for Monday, March 11, 2013 at 9:00 AM and shall dial 877-336-1829 at least five (5) minutes prior to the hearing to be properly connected into the courtroom. The Access Code is 2809752 and the Security Code is 125050311. IT IS SO ORDERED. (no image attached) (Copies have been distributed pursuant to the NEF - LGM) (Entered: 03/05/2013)	
61	03/06/2013	MOTION for Leave to File Brief, Declaration and Exhibit Under Seal by Plaintiff Unwired Planet, LLC. Motion ripe 3/6/2013. (Attachments: # 1 Proposed Order 1-(Proposed) Order Granting Motion to For Leave to File Under Seal)(Rounds, Michael) (Entered: 03/06/2013)	
62	03/06/2013	DECLARATION of MICHAEL D. ROUNDS re 61 MOTION for Leave to File Brief, Declaration and Exhibit Under Seal ; by Plaintiff Unwired Planet, LLC. (Rounds, Michael) (Entered: 03/06/2013)	
63	03/06/2013	***DOCUMENT BLOCKED, REFER TO DOCUMENT # 164 *** RESPONSE to 37 MOTION to Transfer, filed by Plaintiff Unwired Planet, LLC. Non-Confidential / Public Version Replies due by 3/16/2013. (Rounds, Michael) Modified on 10/30/2013 (cpS, COURT STAFF). (Entered: 03/06/2013)	
64	03/06/2013	DECLARATION of JOHN F. GARVISH, II re 63 Response to 37 Motion ; by Plaintiff Unwired Planet, LLC. (Attachments: # 1 Exhibit 20-26, # 2 Exhibit 27-32, # 3 Exhibit 33-37, # 4 Exhibit 38-52, # 5 Exhibit 53-57, # 6 Exhibit 58-61, # 7 Exhibit 62, # 8 Exhibit 63-68, # 9 Exhibit 69-75, # 10 Exhibit 76-81)(Rounds, Michael) Modified on 3/12/2013 link to motion added. (BLG). (Entered: 03/06/2013)	
65	03/06/2013	DECLARATION of DANIEL MENDEZ re 63 Response to 37 Motion ; by Plaintiff Unwired Planet, LLC. (Rounds, Michael) Modified on 3/12/2013 link added. (BLG). (Entered: 03/06/2013)	
66	03/06/2013	DECLARATION of MIKE MULICA re 63 Response to 37 Motion ; by Plaintiff Unwired Planet, LLC. (Rounds, Michael) Modified on 3/12/2013 link added. (BLG). (Entered: 03/06/2013)	
67	03/06/2013	DECLARATION of TIMOTHY ROBBINS re 63 Response to 37 Motion ; by Plaintiff Unwired Planet, LLC. (Rounds, Michael)	

#	Date	Proceeding Text	Source
		Modified on 3/12/2013 link added. (BLG). (Entered: 03/06/2013)	
68	03/06/2013	DECLARATION of ERIC VETTER re 63 Response to 37 Motion ; by Plaintiff Unwired Planet, LLC. (Rounds, Michael) Modified on 3/12/2013 link added.(BLG). (Entered: 03/06/2013)	
72	03/06/2013	STATUS REPORT Joint Case Management Report by Defendant Apple, Inc., Plaintiff Unwired Planet, LLC. (Attachments: # 1 Exhibit A, # 2 Exhibit B, # 3 Exhibit C, # 4 Exhibit D, # 5 Exhibit E, # 6 Exhibit F, # 7 Exhibit G, # 8 Exhibit H, # 9 Exhibit I, # 10 Exhibit J, # 11 Exhibit K, # 12 Exhibit L, # 13 Exhibit M)(Rounds, Michael) (Entered: 03/06/2013)	
73	03/11/2013	MINUTES OF PROCEEDINGS - Case Management Conference held on 3/11/2013 before Magistrate Judge Valerie P. Cooke. Crtrm Administrator: LGM; Pla Counsel: Michael Rounds, John Campbell, and Pierre Hubert; Def Counsel: Ernest Hsin and Jonathan Fountain; Court Reporter/FTR #: 9:02:49 - 10:16:56; Time of Hearing: 9:02 a.m.; Courtroom: 1; The Court approves and signs the order granting Unwired Planet's motion for leave to file declaration, deposition transcript and brief under seal 61 . The Court finds it shall take the issues concerning the protective order and number of claims under submission and enter an written order. Court adjourns. (Copies have been distributed pursuant to the NEF - LGM) (Entered: 03/11/2013)	
76	03/11/2013	ORDER Granting Unwired Planet's Motion for Leave to File Declaration, Deposition Transcript and Brief Under Seal. Signed by Magistrate Judge Valerie P. Cooke on 3/11/13. (Copies have been distributed pursuant to the NEF - JC) (Entered: 03/13/2013)	
74	03/12/2013	STIPULATION FOR EXTENSION OF TIME (First Request) re 63 Response to Motion ; by Counter Claimant Apple, Inc., Defendant Apple, Inc.. (Fountain, Jonathan) (Entered: 03/12/2013)	
75	03/12/2013	ERRATA to 63 Response to 37 Motion ; Corrections to Confidential Brief (Doc. 69) and Non-Confidential Brief (Doc. 63) filed by Plaintiff Unwired Planet, LLC. (Yowell, Adam) Modified on 3/13/2013 add link to motion (WJ). (Entered: 03/12/2013)	
77	03/16/2013	MINUTE ORDER IN CHAMBERS of the Honorable Chief Judge Robert C. Jones, on March 16, 2013, by Carrie L. Lipparelli, Judicial Assistant. IT IS HEREBY ORDERED that 74 Stipulation Extending the Time for Defendant Apple Inc. To File and Serve a Reply in Support of Its Motion to Transfer (First Request) is GRANTED. Defendant Apple Inc. shall file a reply in support of its motion to transfer on or before March 25, 2013. IT IS SO ORDERED. Signed Chief Judge Robert C. Jones. (Copies have been distributed pursuant to the NEF - CL) (Entered: 03/16/2013)	
78	03/20/2013	TRANSCRIPT of Proceedings, 73 Order on Motion for Leave to File, Miscellaneous Hearing,,,, held on 3-11-13, before Magistrate Judge Valerie P. Cooke. Court Reporter/Transcriber: Kathy French, 530-913-9213. Transcript may be viewed at the court public terminal or purchased through the Court Reporter/Transcriber using the court's "Transcript Order" form available on our website www.nvd.uscourts.gov before the deadline for Release of Transcript Restriction. After that date it may be obtained through PACER Redaction Request due 4/10/2013. Redacted Transcript Deadline set for 4/20/2013. Release of Transcript Restriction set for 6/18/2013. (KF) (Entered: 03/20/2013)	
79	03/25/2013	VERIFIED PETITION for Permission to Practice Pro Hac Vice by Warren H. Lipschitz and DESIGNATION of Local Counsel Michael D. Rounds (Filing fee $ 200 receipt number 0978-2752493) filed by Counter Defendant Unwired Planet, LLC. Plaintiff Unwired	

#	Date	Proceeding Text	Source
		Planet, LLC . Motion ripe 3/25/2013. (Rounds, Michael) (Entered: 03/25/2013)	
80	03/25/2013	VERIFIED PETITION for Permission to Practice Pro Hac Vice by Ashley N. Moore and DESIGNATION of Local Counsel Michael D. Rounds (Filing fee $ 200 receipt number 0978-2752502) filed by Counter Defendant Unwired Planet, LLC, Plaintiff Unwired Planet, LLC . Motion ripe 3/25/2013. (Rounds, Michael) (Entered: 03/25/2013)	
81	03/25/2013	REPLY to Response to 37 MOTION to Transfer filed by Counter Claimant Apple, Inc., Defendant Apple, Inc.. (Attachments: # 1 Declaration Thomas Bernard, # 2 Declaration Brooke Wallace, # 3 Exhibit 1, # 4 Exhibit 2, # 5 Exhibit 3, # 6 Exhibit 4, # 7 Exhibit 5)(Fountain, Jonathan) (Entered: 03/25/2013)	
82	03/29/2013	VERIFIED PETITION for Permission to Practice Pro Hac Vice by Steven Kalogeras and DESIGNATION of Local Counsel Jonathan W. Fountain (Filing fee $ 200 receipt number 0978-2760163) by Counter Claimant Apple, Inc., Defendant Apple, Inc.. Motion ripe 3/29/2013. (Fountain, Jonathan) (Entered: 03/29/2013)	
83	04/04/2013	MOTION for Leave to File Sur-Reply to Apple's Reply in Support of Its Motion to Transfer Venue by Plaintiff Unwired Planet, LLC. Motion ripe 4/4/2013. (Attachments: # 1 Proposed Order)(Yowell, Adam) (Entered: 04/04/2013)	
84	04/04/2013	MOTION to Seal Motion for Leave to File Sur-Reply Brief Under Seal by Plaintiff Unwired Planet, LLC. Motion ripe 4/4/2013. (Attachments: # 1 Proposed Order)(Yowell, Adam) (Entered: 04/04/2013)	
86	04/04/2013	REPLY to Response to 37 MOTION to Transfer filed by Plaintiff Unwired Planet, LLC. Sur-Reply In Opposition to Apple's Motion to Transfer Venue--REDACTED (Yowell, Adam) (Entered: 04/04/2013)	
87	04/08/2013	ORDER APPROVING 79 Verified Petition for Permission to Practice Pro Hac Vice for Attorney Warren H. Lipschitz for Unwired Planet, LLC and approving Designation of Local Counsel Michael D. Rounds. Signed by Chief Judge Robert C. Jones on 4/5/2013. Any Attorney not yet registered with the Court's CM/ECF System shall submit a Registration Form on the Court's website www.nvd.uscourts.gov (Copies have been distributed pursuant to the NEF - DRM) (Entered: 04/08/2013)	
88	04/08/2013	ORDER APPROVING 80 Verified Petition for Permission to Practice Pro Hac Vice for Attorney Ashley N. Moore for Unwired Planet, LLC and approving Designation of Local Counsel Michael D. Rounds. Signed by Chief Judge Robert C. Jones on 4/5/2013. Any Attorney not yet registered with the Court's CM/ECF System shall submit a Registration Form on the Court's website www.nvd.uscourts.gov (Copies have been distributed pursuant to the NEF - DRM) (Entered: 04/08/2013)	
89	04/08/2013	ORDER APPROVING 82 Verified Petition for Permission to Practice Pro Hac Vice for Attorney Steven Kalogeras for Apple, Inc. and approving Designation of Local Counsel Jonathan Fountaion. Signed by Chief Judge Robert C. Jones on 4/5/2013. Any Attorney not yet registered with the Court's CM/ECF System shall submit a Registration Form on the Court's website www.nvd.uscourts.gov (Copies have been distributed pursuant to the NEF - DRM) (Entered: 04/08/2013)	
90	04/08/2013	STATUS REPORT for April 11, 2013 Case Management Conference by Counter Claimant Apple, Inc., Defendant Apple, Inc.. (Attachments: # 1 Exhibit 1, # 2 Exhibit 2, # 3 Exhibit 3)(Fountain, Jonathan) (Entered: 04/08/2013)	
91	04/08/2013	STATUS REPORT Case Management Report for April 11, 2013	

#	Date	Proceeding Text	Source
		Case Management Conference by Plaintiff Unwired Planet, LLC. (Rounds, Michael) (Entered: 04/08/2013)	
92	04/08/2013	DECLARATION of MICHAEL D. ROUNDS re 91 Status Report ; including Exhibits A, B, and C In Support of Case Management Report by Plaintiff Unwired Planet, LLC. (Rounds, Michael) (Entered: 04/08/2013)	
93	04/11/2013	ORDER re protective order provisions. The parties shall submit a protective order consistent with the attached order no later than Friday, April 19, 2013. Signed by Magistrate Judge Valerie P. Cooke on 4/11/13. (Copies have been distributed pursuant to the NEF - DN) (Entered: 04/11/2013)	
94	04/11/2013	MINUTES OF PROCEEDINGS - Case Management Conference held on 4/11/2013 before Magistrate Judge Valerie P. Cooke. Crtrm Administrator: LGM; Pla Counsel: Michael Rounds, John Campbell, and (By telephone) Pierre Hubert; Def Counsel: Ernest Hsin, Jonathan Fountain, and (By telephone) Brooke Wallace; Court Reporter/FTR #: 9:0048 - 10:09:54 and 10:15:12 - 10:39:34; Time of Hearing: 9:00 a.m.; Courtroom: 1; The Court hears from counsel regarding their respective positions concerning discovery disputes. Counsel are directed to meet and confer and propose an amended scheduling order. See the attached order for specifications. (Copies have been distributed pursuant to the NEF - LGM) (Entered: 04/12/2013)	
95	04/15/2013	TRANSCRIPT of Proceedings, 94 Miscellaneous Hearing,, held on 4-11-13, before Magistrate Judge Valerie P. Cooke. Court Reporter/Transcriber: Kathy French, 530-913-9213. Transcript may be viewed at the court public terminal or purchased through the Court Reporter/Transcriber using the court's "Transcript Order" form available on our website www.nvd.uscourts.gov before the deadline for Release of Transcript Restriction. After that date it may be obtained through PACER Redaction Request due 5/6/2013. Redacted Transcript Deadline set for 5/16/2013. Release of Transcript Restriction set for 7/14/2013. (KF) (Entered: 04/15/2013)	
96	04/17/2013	ORDER - UP shall limit its asserted claims to no more than 70. The parties shall meet and confer and shall submit an amended scheduling order that incorporates these rulings. (See pdf order for specifics.) Signed by Magistrate Judge Valerie P. Cooke on 4/17/2013. (Copies have been distributed pursuant to the NEF - DRM) (Main Document 96 replaced on 4/17/2013) (DRM). (Entered: 04/17/2013)	
97	04/17/2013	NOTICE of Corrected Image/Document re 96 Order (Original image was for an unrelated case, and has been replaced.) (Service of corrected image is attached). (DRM) (Entered: 04/17/2013)	
98	04/19/2013	MOTION FOR CLARIFICATION OF APRIL 11, 2013, ORDER re 93 Order, by Plaintiff Unwired Planet, LLC. Responses due by 5/6/2013. (Rounds, Michael) (Entered: 04/19/2013)	
99	04/19/2013	STIPULATION TO PRODUCE ELECTRONICALLY-STORED INFORMATION ACCORDING TO MODEL ORDER by Counter Defendant Unwired Planet, LLC, Plaintiff Unwired Planet, LLC. (Attachments: # 1 Exhibit A)(Rounds, Michael) (Entered: 04/19/2013)	
100	04/19/2013	Submission of PROPOSED ORDER filed by Counter Claimant Apple, Inc., Defendant Apple, Inc. Proposed Protective Order. (Fountain, Jonathan) (Entered: 04/19/2013)	
101	04/22/2013	RESPONSE to 83 MOTION for Leave to File Sur-Reply to Apple's	

#	Date	Proceeding Text	Source
		Reply in Support of Its Motion to Transfer Venue, filed by Defendant Apple, Inc.. Replies due by 5/2/2013. (Krieger, John) (Entered: 04/22/2013)	
102	04/24/2013	ORDER ON 99 STIPULATION. The parties will produce electronically-stored information according to the Federal Circuit Advisory Council's Model Order Regarding E-Discovery In ***Patent*** Cases. Signed by Magistrate Judge Valerie P. Cooke on 04/24/2013. (Copies have been distributed pursuant to the NEF - KR) (Entered: 04/24/2013)	
103	04/25/2013	(1st Notice) PURSUANT TO SPECIAL ORDER 109: that Josh A. Krevitt is in violation of Special Order 109. Participation in the electronic filing system became mandatory for all attorneys effective January 1, 2006. You are required to register for the Court's Case Management and Electronic Case Filing (CM/ECF) program and the electronic service of pleadings. Please visit the Court's website to register for CM/ECF. (no image attached) (LG) (Entered: 04/25/2013)	
104	05/02/2013	STIPULATION FOR EXTENSION OF TIME (First Request) re 94 Miscellaneous Hearing,, 96 Order, ; for Apple to Serve its Local Rule 16.1-8 and 16.1-9 Disclosures and Document Production by Counter Claimant Apple, Inc., Defendant Apple, Inc.. (Fountain, Jonathan) (Entered: 05/02/2013)	
105	05/06/2013	RESPONSE to 98 MOTION FOR CLARIFICATION OF APRIL 11, 2013, ORDER re 93 Order, , filed by Counter Claimant Apple, Inc., Defendant Apple, Inc.. Replies due by 5/16/2013. (Attachments: # 1 Exhibit A)(Fountain, Jonathan) (Entered: 05/06/2013)	
106	05/07/2013	ORDER ON 104 STIPULATION, signed by Magistrate Judge Valerie P. Cooke on 05/07/2013. (Copies have been distributed pursuant to the NEF - KR) (Entered: 05/07/2013)	
107	05/07/2013	STATUS REPORT Case Management Conference Report [May 2013] by Counter Claimant Apple, Inc., Defendant Apple, Inc.. (Attachments: # 1 Exhibit A - Email Correspondence)(Fountain, Jonathan) (Entered: 05/07/2013)	
108	05/08/2013	STATEMENT of Unwired Planet Case Management Report by Counter Defendant Unwired Planet, LLC, Plaintiff Unwired Planet, LLC. (Attachments: # 1 Declaration Michael D. Rounds)(Rounds, Michael) (Entered: 05/08/2013)	
109	05/09/2013	MINUTE ORDER IN CHAMBERS of the Honorable Magistrate Judge Valerie P. Cooke, on 5/9/2013. By Deputy Clerk: LGM. Out-of-town and out-of-state counsel shall be allowed to appear telephonically for the case management conference set before this Court on Friday, May 10, 2013 at 10:00 AM and shall dial 877-336-1829 at least five (5) minutes prior to the hearing to be properly connected into the courtroom. The Access Code is 2809752 and the Security Code is 125050510. IT IS SO ORDERED. (no image attached) (Copies have been distributed pursuant to the NEF - LGM) (Entered: 05/09/2013)	
110	05/09/2013	STIPULATION REGARDING THE MAY 10, 2013 CASE MANAGEMENT CONFERENCE, UNWIRED PLANET'S LOCAL ***PATENT*** RULE 16.1-7(B) DOCUMENT PRODUCTION, AND APPLE'S DUE DATE FOR IT'S INVALIDITY CONTENTIONS by Counter Defendant Unwired Planet, LLC, Plaintiff Unwired Planet, LLC. (Attachments: # 1 Exhibit A)(Rounds, Michael) (Entered: 05/09/2013)	
111	05/09/2013	MINUTE ORDER IN CHAMBERS of the Honorable Magistrate Judge Valerie P. Cooke, on 5/9/2013. By Deputy Clerk: LGM. In light of the parties' stipulation regarding the May 10, 2013 case management conference 110 , the case management conference set for Friday, May 10, 2013 at 10:00 AM is VACATED. IT IS SO	

#	Date	Proceeding Text	Source
		ORDERED. (no image attached) (Copies have been distributed pursuant to the NEF - LGM) (Entered: 05/09/2013)	
112	05/10/2013	Unopposed MOTION to Amend/Correct Complaint re 1 Complaint,,. by Plaintiff Unwired Planet, LLC. Responses due by 5/27/2013. (Attachments: # 1 Exhibit 1-First Amended Complaint for ***Patent*** Infringement, # 2 Proposed Order Order Granting Leave to File First Amended Complaint for ***Patent*** Infringement)(Yowell, Adam) (Entered: 05/10/2013)	
113	05/16/2013	REPLY to Response to 98 MOTION FOR CLARIFICATION OF APRIL 11, 2013, ORDER re 93 Order, filed by Counter Defendant Unwired Planet, LLC, Plaintiff Unwired Planet, LLC. (Attachments: # 1 Exhibit A)(Rounds, Michael) (Entered: 05/16/2013)	
114	05/17/2013	ORDER granting 98 motion for clarification to the extent that the court clarifies that its order 93 is clear on its face. Signed by Magistrate Judge Valerie P. Cooke on 5/17/13. (Copies have been distributed pursuant to the NEF - DN) (Entered: 05/17/2013)	
115	05/22/2013	VERIFIED PETITION for Permission to Practice Pro Hac Vice by Kevin M. Kneupper and DESIGNATION of Local Counsel Michael D. Rounds (Filing fee $ 200 receipt number 0978-2827583) filed by Counter Defendant Unwired Planet, LLC, Plaintiff Unwired Planet, LLC . Motion ripe 5/22/2013. (Rounds, Michael) (Entered: 05/22/2013)	
116	05/22/2013	VERIFIED PETITION for Permission to Practice Pro Hac Vice by David Sochia and DESIGNATION of Local Counsel Michael D. Rounds (Filing fee $ 200 receipt number 0978-2828079) filed by Counter Defendant Unwired Planet, LLC, Plaintiff Unwired Planet, LLC . Motion ripe 5/22/2013. (Rounds, Michael) (Entered: 05/22/2013)	
117	05/29/2013	STIPULATION [PROPOSED] PROTECTIVE ORDER REGARDING THE DISCLOSURE AND USE OF DISCOVERY MATERIALS by Plaintiff Unwired Planet, LLC. (Rounds, Michael) (Entered: 05/29/2013)	
118	06/03/2013	PROTECTIVE ORDER re 117 Proposed Order. Signed by Magistrate Judge Valerie P. Cooke on 6/3/13. (Copies have been distributed pursuant to the NEF - JC) (Entered: 06/03/2013)	
119	06/04/2013	MINUTE ORDER IN CHAMBERS of the Honorable Magistrate Judge Valerie P. Cooke, on 6/4/2013. By Deputy Clerk: LGM. In light of a calendar conflict with plaintiff's counsel and having no objection from defendant's counsel, the Case Management Conference currently set for 6/10/2013 at 09:00 AM is VACATED and ADVANCED to 6/7/2013 at 09:00 AM in Reno Courtroom 1 before Magistrate Judge Valerie P. Cooke. Out-of-town and out-of-state counsel shall be allowed to appear telephonically for the case management conference and shall dial 877-336-1829 at least five (5) minutes prior to the hearing to be properly connected into the courtroom. The Access Code is 2809752 and the Security Code is 125050607. IT IS SO ORDERED. (no image attached) (Copies have been distributed pursuant to the NEF - LGM) (Entered: 06/04/2013)	
120	06/04/2013	NOTICE of Appearance by attorney Michael D Rounds on behalf of Counter Defendant Unwired Planet, LLC, Plaintiff Unwired Planet, LLC. of RYAN J. CUDNIK (Rounds, Michael) (Entered: 06/04/2013)	
121	06/04/2013	ORDER granting 112 Motion to Amend/Correct Complaint. Signed by Magistrate Judge Valerie P. Cooke on 6/4/13. (Copies have been distributed pursuant to the NEF - JC) (Entered: 06/04/2013)	
122	06/05/2013	ORDER APPROVING 115 Verified Petition for Permission to Practice Pro Hac Vice by Attorney Kevin Kneupper for Unwired	

#	Date	Proceeding Text	Source
		Planet, LLC. and approving Designation of Local Counsel Michael D. Rounds. Signed by Chief Judge Robert C. Jones on 06/04/2013. Any Attorney not yet registered with the Court's CM/ECF System shall submit a Registration Form on the Court's website www.nvd.uscourts.gov (Copies have been distributed pursuant to the NEF - KR) (Entered: 06/05/2013)	
123	06/05/2013	ORDER APPROVING 116 Verified Petition for Permission to Practice Pro Hac Vice by Attorney David Sochia for Unwired Planet, LLC, and approving Designation of Local Counsel Michael D. Rounds. Signed by Chief Judge Robert C. Jones on 06/04/2013. Any Attorney not yet registered with the Court's CM/ECF System shall submit a Registration Form on the Court's website www.nvd.uscourts.gov (Copies have been distributed pursuant to the NEF - KR) (Entered: 06/05/2013)	
124	06/05/2013	STATUS REPORT Case Management Conference Report [June 2013] by Defendant Apple, Inc.. (Attachments: # 1 Exhibit A)(Fountain, Jonathan) (Entered: 06/05/2013)	
125	06/05/2013	STATUS REPORT Case Management Conference Statement by Plaintiff Unwired Planet, LLC. (Attachments: # 1 Exhibit 1, # 2 Exhibit 2, # 3 Exhibit 3, # 4 Exhibit 4, # 5 Exhibit 5, # 6 Exhibit 6)(Rounds, Michael) (Entered: 06/05/2013)	
126	06/07/2013	MINUTES OF PROCEEDINGS - Case Management Conference held on 6/7/2013 before Magistrate Judge Valerie P. Cooke. Crtrm Administrator: Heidi Jordan; Pla Counsel: Michael Rounds, Ryan Cudnik; Def Counsel: Ernest Hsin, Jonathan Fountain (By telephone); Court Reporter/FTR #: 9:04 - 11:00; Courtroom: 1; The Court addresses the parties regarding the purpose of this hearing and notes the parties have filed their Case Management Conference Reports 124 125 . Having heard from counsel and good cause appearing, the Court finds as follows: Markman hearing currently set December 16, 2013, at 1:30 p.m. is RESCHEDULED to Tuesday, January 21-22, 2014, at 9:00 a.m.Pre-Claim Construction Settlement Conference currently set for July 12, 2013, at 9:00 a.m. is RESCHEDULED to Thursday, September 19, 2013, at 9:00 a.m. Settlement Statements due September 12, 2013. Regarding the remaining revised deadlines, counsel shall submit an amended Scheduling Order incorporating the new agreed upon deadlines on or before June 14, 2013. (Copies have been distributed pursuant to the NEF - HJ) (Entered: 06/10/2013)	
127	06/10/2013	TRANSCRIPT of Proceedings, 126 Status Conference,,,,, Set/Reset Deadlines,,,, held on 6-7-13, before Magistrate Judge Valerie P. Cooke. Court Reporter/Transcriber: Kathy French, 530-913-9213. Transcript may be viewed at the court public terminal or purchased through the Court Reporter/Transcriber using the court's "Transcript Order" form available on our website www.nvd.uscourts.gov before the deadline for Release of Transcript Restriction. After that date it may be obtained through PACER Redaction Request due 7/1/2013. Redacted Transcript Deadline set for 7/11/2013. Release of Transcript Restriction set for 9/8/2013. (KF) (Entered: 06/10/2013)	
128	06/14/2013	PROPOSED Discovery Plan/Scheduling Order filed by Plaintiff Unwired Planet, LLC Amended [Joint Proposed] Scheduling Order. (Rounds, Michael) (Entered: 06/14/2013)	
129	06/17/2013	SCHEDULING ORDER re 128 Amended Proposed Discovery Plan/Scheduling Order. Signed by Magistrate Judge Valerie P. Cooke on 6/17/13. (Copies have been distributed pursuant to the NEF - JC) (Entered: 06/17/2013)	

#	Date	Proceeding Text	Source
130	06/28/2013	AMENDED COMPLAINT with Jury Demand against All Defendants, filed by Unwired Planet, LLC. No changes to parties. Proof of service due by 10/26/2013. (Rounds, Michael) (Entered: 06/28/2013)	
131	07/01/2013	MINUTE ORDER IN CHAMBERS of the Honorable Magistrate Judge Valerie P. Cooke, on 7/1/2013. By Deputy Clerk: LGM. Out-of-town and out-of-state counsel shall be allowed to appear telephonically for the case management conference set before this Court on Thursday, July 11, 2013 at 10:00 AM and shall dial 877-336-1829 at least five (5) minutes prior to the hearing to be properly connected into the courtroom. The Access Code is 2809752 and the Security Code is 125050711. Counsel shall file a joint or separate case management report by no later than the close of business on Monday, July 8, 2013. IT IS SO ORDERED. (no image attached) (Copies have been distributed pursuant to the NEF - LGM) (Entered: 07/01/2013)	
132	07/08/2013	STATEMENT UNWIRED PLANET'S CASE MANAGEMENT STATEMENT by Counter Defendant Unwired Planet, LLC, Plaintiff Unwired Planet, LLC. (Attachments: # 1 Exhibit A, # 2 Exhibit B, # 3 Exhibit C, # 4 Exhibit D, # 5 Exhibit E)(Rounds, Michael) (Entered: 07/08/2013)	
133	07/08/2013	STATUS REPORT re July 2013 Case Management Conference by Counter Claimant Apple, Inc., Defendant Apple, Inc.. (Attachments: # 1 Exhibit A, # 2 Exhibit B, # 3 Exhibit C, # 4 Exhibit D, # 5 Exhibit E, # 6 Exhibit F, # 7 Exhibit G, # 8 Exhibit H)(Fountain, Jonathan) (Entered: 07/08/2013)	
134	07/11/2013	MINUTES OF PROCEEDINGS - Case Management Conference held on 7/11/2013 before Magistrate Judge Valerie P. Cooke. Crtrm Administrator: LGM; Pla Counsel: Michael Rounds, John Campbell, and (By telephone) Pierre Hubert; Def Counsel: Ernest Hsin, Jonathan Fountain, and (By telephone) Brooke Wallace; Court Reporter/FTR #: 10:00:55 - 10:35:32; Time of Hearing: 10:00 a.m.; Courtroom: 1; The Court finds it is not convinced and that it is premature to order Apple to limit the number of asserted prior art references at this time. IT IS SO ORDERED. (Copies have been distributed pursuant to the NEF - LGM) (Entered: 07/11/2013)	
135	07/11/2013	STIPULATION FOR EXTENSION OF TIME (Second Request) Extending the Time for Apple to Serve its Local Rule 16.1-8(b)-(e) Disclosures by Counter Claimant Apple, Inc., Defendant Apple, Inc.. (Fountain, Jonathan) (Entered: 07/11/2013)	
136	07/15/2013	ORDER ON STIPULATION re 135 Stipulation Extending Time for Apple to Serve Disclosures. Signed by Magistrate Judge Valerie P. Cooke on 7/15/13. (Copies have been distributed pursuant to the NEF - JC) (Entered: 07/15/2013)	
137	07/15/2013	ANSWER to 130 Amended Complaint with Jury Demand , COUNTERCLAIM against Unwired Planet, LLC filed by Apple, Inc.. (Attachments: # 1 Exhibit 1, # 2 Exhibit 2, # 3 Exhibit 3, # 4 Exhibit 4, # 5 Exhibit 5, # 6 Exhibit 6, # 7 Exhibit 7, # 8 Exhibit 8, # 9 Exhibit 9, # 10 Exhibit 10, # 11 Exhibit 11, # 12 Exhibit 12, # 13 Exhibit 13, # 14 Exhibit 14, # 15 Exhibit 15, # 16 Exhibit 16, # 17 Exhibit 17, # 18 Exhibit 18)(Fountain, Jonathan) (Entered: 07/15/2013)	
138	07/16/2013	NOTICE PURSUANT TO LOCAL RULE IB 2-2: In accordance with 28 USC § 636(c) and FRCP 73, the parties in this action are provided with a link to the "AO 85 Notice of Availability, Consent, and Order of Reference - Exercise of Jurisdiction by a U.S. Magistrate Judge" form on the Court's website - www.nvd.uscourts.gov. Consent forms should NOT be	

#	Date	Proceeding Text	Source
		electronically filed. Upon consent of all parties, counsel are advised to manually file the form with the Clerk's Office. A copy of form AO 85 has been mailed to parties not receiving electronic service. (no image attached) (DRM) (Entered: 07/16/2013)	
139	07/18/2013	TRANSCRIPT of Proceedings, 134 Miscellaneous Hearing, held on 7/11/13, before Magistrate Judge Valerie P. Cooke. Court Reporter/Transcriber: Donna Davidson, 775-329-0132. Transcript may be viewed at the court public terminal or purchased through the Court Reporter/Transcriber using the court's "Transcript Order" form available on our website www.nvd.uscourts.gov before the deadline for Release of Transcript Restriction. After that date it may be obtained through PACER Redaction Request due 8/8/2013. Redacted Transcript Deadline set for 8/18/2013. Release of Transcript Restriction set for 10/16/2013. (DD) (Entered: 07/18/2013)	
140	07/22/2013	VERIFIED PETITION for Permission to Practice Pro Hac Vice by Mitchell Sibley and DESIGNATION of Local Counsel Michael D. Rounds (Filing fee $ 200 receipt number 0978-2896079) filed by Counter Defendants Unwired Planet, LLC, Unwired Planet, LLC, Plaintiff Unwired Planet, LLC . Motion ripe 7/22/2013. (Rounds, Michael) (Entered: 07/22/2013)	
141	08/05/2013	STIPULATION and Proposed Order Vacating the August 9, 2013 Case Management Conference by Counter Claimants Apple, Inc., Apple, Inc., Defendant Apple, Inc.. (Fountain, Jonathan) (Entered: 08/05/2013)	
142	08/06/2013	ORDER ON STIPULATION re 141 Stipulation Vacating the August 9, 2013 Case Management Conference. Signed by Magistrate Judge Valerie P. Cooke on 8/6/13. (Copies have been distributed pursuant to the NEF - JC) (Entered: 08/06/2013)	
143	08/06/2013	VERIFIED PETITION for Permission to Practice Pro Hac Vice by Nicholas M. Mathews and DESIGNATION of Local Counsel Michael D. Rounds (Filing fee $ 200 receipt number 0978-2914703) filed by Counter Defendants Unwired Planet, LLC, Unwired Planet, LLC, Plaintiff Unwired Planet, LLC . Motion ripe 8/6/2013. (Rounds, Michael) (Entered: 08/06/2013)	
144	08/08/2013	MINUTE ORDER IN CHAMBERS of the Honorable Magistrate Judge Valerie P. Cooke, on 8/8/2013. By Deputy Clerk: LGM. Monthly Case Management Conferences are set as follows: 9/6/2013 at 02:00 PM, 10/4/2013 at 02:00 PM, 11/4/2013 at 02:00 PM, and 12/5/2013 at 09:00 AM all in Reno Courtroom 1 before Magistrate Judge Valerie P. Cooke. Counsel shall file a joint or separate case management report by no later than the close of business three (3) court days prior to each conference. IT IS SO ORDERED. (no image attached) (Copies have been distributed pursuant to the NEF - LGM) (Entered: 08/08/2013)	
145	08/08/2013	ANSWER to 137 Answer to Amended Complaint,, Counterclaim,, filed by Unwired Planet, LLC.(Rounds, Michael) (Entered: 08/08/2013)	
146	08/09/2013	NOTICE PURSUANT TO LOCAL RULE IB 2-2: In accordance with 28 USC § 636(c) and FRCP 73, the parties in this action are provided with a link to the "AO 85 Notice of Availability, Consent, and Order of Reference - Exercise of Jurisdiction by a U.S. Magistrate Judge" form on the Court's website - www.nvd.uscourts.gov. Consent forms should NOT be electronically filed. Upon consent of all parties, counsel are advised to manually file the form with the Clerk's Office. A copy of form AO 85 has been mailed to parties not receiving electronic service. (no image attached) (JC) (Entered: 08/09/2013)	
147	08/15/2013	STIPULATION and Proposed Order for the Withdrawal of Attorney	

#	Date	Proceeding Text	Source
		Etai Lahav and for the Removal of Attorney Etai Lahav from the CM/ECF Service List by Counter Claimants Apple, Inc., Apple, Inc., Defendant Apple, Inc.. (Fountain, Jonathan) (Entered: 08/15/2013)	
148	08/19/2013	ORDER ON 147 STIPULATION for Withdrawal of Attorney Etai Lahav as counsel for Apple Inc., and removal from CM/ECF service list. Signed by Magistrate Judge Valerie P. Cooke on 8/19/2013. (Copies have been distributed pursuant to the NEF - DRM) (Entered: 08/19/2013)	
149	08/19/2013	NOTICE OF ORDER by Unwired Planet, LLC. (Attachments: # 1 Exhibit)(Rounds, Michael) (Entered: 08/19/2013)	
150	08/30/2013	MINUTE ORDER IN CHAMBERS of the Honorable Magistrate Judge Valerie P. Cooke, on 8/30/2013. By Deputy Clerk: LGM. Out-of-town and out-of-state counsel shall be allowed to appear telephonically for the case management conference set before this Court on Friday, September 6, 2013 at 2:00 PM and shall dial 877-336-1829 at least five (5) minutes prior to the hearing to be properly connected into the courtroom. The Access Code is 2809752 and the Security Code is 125050906. Counsel shall file a joint or separate case management report by no later than the close of business on Tuesday, September 3, 2013. IT IS SO ORDERED. (no image attached) (Copies have been distributed pursuant to the NEF - LGM) (Entered: 08/30/2013)	
151	08/30/2013	ORDER granting 37 Motion to Transfer. Clerk shall transfer case to Northern District of CA, close case administratively, and terminate all other pending motions in this district. Signed by Chief Judge Robert C. Jones on 8/30/13. (Copies have been distributed pursuant to the NEF - JC) (Entered: 08/30/2013)	
152	09/06/2013	Case transferred in from District of Nevada; Case Number 3:12-cv-00505. File Electronically Transferred. Copy of transfer order and docket sheet received. Modified on 9/11/2013 (cjl, COURT STAFF). (Entered: 09/11/2013)	
153	09/06/2013	ADR SCHEDULING ORDER: Case Management Statement due by 11/26/2013. Case Management Conference set for 12/3/2013 01:30 PM in Courtroom 4, 3rd Floor, Oakland. (Attachments: # 1 Standing Order)(cjl, COURT STAFF) (Filed on 9/6/2013) (Entered: 09/11/2013)	
154	09/11/2013	CLERKS NOTICE Acknowledging Receipt of Case Transfer in from U.S.D.C. Nevada. Their Case No. 3:12-CV-505-RCJ-VPC. (Attachments: # 1 Certificate/Proof of Service) (cjl, COURT STAFF) (Filed on 9/11/2013) (Entered: 09/11/2013)	
155	09/12/2013	REPORT on the filing of an action regarding ***Patent*** (cc: form mailed to register). (cjl, COURT STAFF) (Filed on 9/12/2013) (Entered: 09/12/2013)	
156	09/30/2013	Order by Magistrate Judge Kandis A. Westmore granting 140 Motion for Pro Hac Vice.(kawlc2, COURT STAFF) (Filed on 9/30/2013) (Entered: 09/30/2013)	
157	09/30/2013	Order by Magistrate Judge Kandis A. Westmore granting 143 Motion for Pro Hac Vice.(kawlc2, COURT STAFF) (Filed on 9/30/2013) (Entered: 09/30/2013)	
158	09/30/2013	Mail sent to Attorney Kevin L. Burgess returned as undeliverable re 154 Clerks Notice. (cjl, COURT STAFF) (Filed on 9/30/2013) (Entered: 10/01/2013)	
159	10/10/2013	CLERK'S NOTICE Re: Consent or Declination: Plaintiffs/Defendants shall file a consent or declination to proceed before a magistrate judge within 14 days of this notice. (sisS, COURT STAFF) (Filed on 10/10/2013) (Entered: 10/10/2013)	
160	10/14/2013	CONSENT/DECLINATION to Proceed Before a US Magistrate Judge by Unwired Planet, LLC.. (Attachments: # 1 Exhibit	

#	Date	Proceeding Text	Source
		A)(Hubert, Pierre) (Filed on 10/14/2013) (Entered: 10/14/2013)	
161	10/15/2013	CONSENT/DECLINATION to Proceed Before a US Magistrate Judge by Apple Inc.. (Hsin, Yu-Chieh) (Filed on 10/15/2013) (Entered: 10/15/2013)	
162	10/16/2013	CLERK'S NOTICE of Impending Reassignment to U.S. District Judge (sisS, COURT STAFF) (Filed on 10/16/2013) (Entered: 10/16/2013)	
163	10/16/2013	ORDER REASSIGNING CASE. Case reassigned to Judge Hon. Yvonne Gonzalez Rogers for all further proceedings. Magistrate Judge Kandis A. Westmore no longer assigned to the case. Signed by the Executive Committee on October 16, 2013. (cjlS, COURT STAFF) (Filed on 10/16/2013) (Entered: 10/16/2013)	
164	10/30/2013	ERRATA re 63 Reply Memorandum by Unwired Planet, LLC. (Attachments: # 1 Corrected Image for Dkt #63)(Campbell, John) (Filed on 10/30/2013) (Entered: 10/30/2013)	
165	11/22/2013	CLERKS NOTICE SETTING CASE MANAGEMENT CONFERENCE. Case Management Statement due by 12/30/2013. Case Management Conference set for Monday, 1/6/2014 02:00 PM before Judge Yvonne Gonzalez Rogers in Courtroom 5, 2nd Floor, Oakland. (Attachments: # 1 Standing Order) (fs, COURT STAFF) (Filed on 11/22/2013) (Entered: 11/22/2013)	
166	11/24/2013	CERTIFICATE OF SERVICE by Unwired Planet, LLC re 165 Clerks Notice, and Standing Order in Civil Cases (Campbell, John) (Filed on 11/24/2013) (Entered: 11/24/2013)	
167	12/17/2013	ADR Clerks Notice re: Non-Compliance with Court Order. (tjs, COURT STAFF) (Filed on 12/17/2013) (Entered: 12/17/2013)	
168	12/18/2013	MOTION for leave to appear in Pro Hac Vice for John B. Campbell (Filing fee $ 305, receipt number 0971-8241900.) filed by Unwired Planet, LLC. (Campbell, John) (Filed on 12/18/2013) Modified on 12/19/2013 (jlmS, COURT STAFF). (Entered: 12/18/2013)	
169	12/18/2013	STIPULATION and Proposed Order selecting Private ADR (Campbell, John) (Filed on 12/18/2013) Modified on 12/19/2013 (cpS, COURT STAFF). (Entered: 12/18/2013)	
170	12/18/2013	ADR Certification (ADR L.R. 3-5 b) of discussion of ADR options (Campbell, John) (Filed on 12/18/2013) (Entered: 12/18/2013)	
171	12/19/2013	ORDER by Judge Yvonne Gonzalez Rogers DENYING without prejudice 168 Motion for Pro Hac Vice (fs, COURT STAFF) (Filed on 12/19/2013) (Entered: 12/20/2013)	
172	12/26/2013	MOTION for leave to appear in Pro Hac Vice (Filing fee $ 305, receipt number 0971-8241900.) Filing fee previously paid on 12/18/13 filed by Unwired Planet, LLC. (Campbell, John) (Filed on 12/26/2013) (Entered: 12/26/2013)	
173	12/26/2013	NOTICE of Appearance by Courtland Lewis Reichman (Reichman, Courtland) (Filed on 12/26/2013) (Entered: 12/26/2013)	
174	12/26/2013	ADR Certification (ADR L.R. 3-5 b) of discussion of ADR options (Kogan, Christina) (Filed on 12/26/2013) (Entered: 12/26/2013)	
175	12/30/2013	Certificate of Interested Entities by Unwired Planet, LLC (Campbell, John) (Filed on 12/30/2013) (Entered: 12/30/2013)	
176	12/30/2013	JOINT CASE MANAGEMENT STATEMENT filed by Unwired Planet, LLC, Apple Inc. (Attachments: # 1 Exhibit A, # 2 Exhibit B, # 3 Exhibit C)(Campbell, John) (Filed on 12/30/2013) Modified on 12/31/2013 (kcS, COURT STAFF). (Entered: 12/30/2013)	
177	12/31/2013	Certificate of Interested Entities by Unwired Planet, LLC identifying Corporate Parent Unwired Planet IP Holdings, Inc. for Unwired Planet, LLC. (Campbell, John) (Filed on 12/31/2013) (Entered: 12/31/2013)	

#	Date	Proceeding Text	Source
178	01/03/2014	ORDER by Judge Yvonne Gonzalez Rogers granting 172 Motion for Pro Hac Vice as to John B. Campbell representing Plaintiff. (fs, COURT STAFF) (Filed on 1/3/2014) (Entered: 01/03/2014)	
181	01/06/2014	Minute Entry: Further Case Management Conference held on 1/6/2014 before Yvonne Gonzalez Rogers (Date Filed: 1/6/2014). Case Management Conference set for Monday, 1/13/2014 02:00 PM in Courtroom 5, 2nd Floor, Oakland. If counsel submit agreed upon proposed schedule by Friday 1/10/2014 then the CMC date of 1/13/2014 will be vacated.(Recording #FTR: 2:54pm-3:37pm.) (fs, COURT STAFF) (Date Filed: 1/6/2014) (Entered: 01/10/2014)	
179	01/07/2014	TRANSCRIPT ORDER by Apple Inc for Court Reporter FTR - Oakland. (Kogan, Christina) (Filed on 1/7/2014) (Entered: 01/07/2014)	
180	01/07/2014	TRANSCRIPT ORDER by Unwired Planet, LLC for Court Reporter FTR - Oakland. (Campbell, John) (Filed on 1/7/2014) (Entered: 01/07/2014)	
182	01/10/2014	Joint Proposed Scheduling Order by Unwired Planet, LLC, Apple Inc. (Campbell, John) (Filed on 1/10/2014) Modified on 1/13/2014 (cpS, COURT STAFF). (Entered: 01/10/2014)	
183	01/10/2014	MOTION for leave to appear in Pro Hac Vice (Filing fee $ 305, receipt number 0971-8288025.) filed by Unwired Planet, LLC. (Stevenson, Theodore) (Filed on 1/10/2014) (Entered: 01/10/2014)	
184	01/13/2014	CLERKS NOTICE VACATING THE MONDAY, JANUARY 13, 2014 AT 2:00PM CASE MANAGEMENT CONFERENCE. (This is a text only docket entry, there is no document associated with this notice.) (fs, COURT STAFF) (Filed on 1/13/2014) (Entered: 01/13/2014)	
185	01/15/2014	JOINT SCHEDULING ORDER re 182 Proposed Order filed by Unwired Planet, LLC, Apple Inc. Claims Construction Hearing set for Wednesday, 5/14/2014 02:00 PM. Tutorial Hearing set for Wednesday, 5/7/2014 02:00 PM. Signed by Judge Yvonne Gonzalez Rogers on 1/15/2014. (fs, COURT STAFF) (Filed on 1/15/2014) (Entered: 01/16/2014)	
186	01/21/2014	ORDER DENYING PLAINTIFF'S ORAL MOTION FOR RECONSIDERATION OF PROTECTIVE ORDER re 118 Protective Order. Signed by Judge Yvonne Gonzalez Rogers on 1/21/2014. (fs, COURT STAFF) (Filed on 1/21/2014) (Entered: 01/21/2014)	
187	01/27/2014	ORDER by Judge Yvonne Gonzalez Rogers granting 183 Motion for Pro Hac Vice as to Theodore Stevenson III representing Plaintiff. (fs, COURT STAFF) (Filed on 1/27/2014) (Entered: 01/27/2014)	
188	01/31/2014	Transcript of Electronically Recorded Proceedings (FTR) held on January 6, 2014, before Judge Yvonne Gonzalez Rogers. Transcriber Raynee H. Mercado, Telephone number 510-502-6175, cacsr8258@gmail.com, raynee_mercado@cand.uscourts.gov. Tape Number: FTR:2:54pm-3:37pm. Per General Order No. 59 and Judicial Conference policy, this transcript may be viewed only at the Clerks Office public terminal or may be purchased through the Transcriber until the deadline for the Release of Transcript Restriction.After that date it may be obtained through PACER. Any Notice of Intent to Request Redaction, if required, is due no later than 5 business days from date of this filing. Release of Transcript Restriction set for 5/1/2014. (Related document(s) 179 , 180) (rhm) (Filed on 1/31/2014) Modified on 2/3/2014 (cpS, COURT STAFF). (Entered: 01/31/2014)	
189	02/07/2014	MOTION for leave to appear in Pro Hac Vice (Filing fee $ 305,	

#	Date	Proceeding Text	Source
		receipt number 0971-8359930.) filed by Unwired Planet, LLC. (Burgess, Kevin) (Filed on 2/7/2014) (Entered: 02/07/2014)	
190	02/12/2014	ORDER by Judge Yvonne Gonzalez Rogers granting 189 Motion for Pro Hac Vice as to Kevin Burgess representing plaintiff. (fs, COURT STAFF) (Filed on 2/12/2014) (Entered: 02/12/2014)	
191	03/03/2014	MOTION for leave to appear in Pro Hac Vice (Filing fee $ 305, receipt number 0971-8418757.) filed by Unwired Planet, LLC. (Sibley, Mitchell) (Filed on 3/3/2014) (Entered: 03/03/2014)	
192	03/03/2014	MOTION for leave to appear in Pro Hac Vice (Filing fee $ 305, receipt number 0971-8418817.) filed by Unwired Planet, LLC. (Apreotesi, Mario) (Filed on 3/3/2014) (Entered: 03/03/2014)	
193	03/03/2014	MOTION for leave to appear in Pro Hac Vice (Filing fee $ 305, receipt number 0971-8418844.) filed by Unwired Planet, LLC. (Kneupper, Kevin) (Filed on 3/3/2014) (Entered: 03/03/2014)	
194	03/03/2014	MOTION for leave to appear in Pro Hac Vice (Filing fee $ 305, receipt number 0971-8418879.) filed by Unwired Planet, LLC. (Quigley, James) (Filed on 3/3/2014) (Entered: 03/03/2014)	
195	03/07/2014	ORDER by Judge Yvonne Gonzalez Rogers granting 191 Motion for Pro Hac Vice as to Mitchell Reed Sibley representing Plaintiff. (fs, COURT STAFF) (Filed on 3/7/2014) (Entered: 03/07/2014)	
196	03/07/2014	ORDER by Judge Yvonne Gonzalez Rogers granting 192 Motion for Pro Hac Vice as to Mario Aurel Apreotesi representing Plaintiff. (fs, COURT STAFF) (Filed on 3/7/2014) (Entered: 03/07/2014)	
197	03/07/2014	ORDER by Judge Yvonne Gonzalez Rogers granting 193 Motion for Pro Hac Vice as to Kevin Kneupper representing Plaintiff. (fs, COURT STAFF) (Filed on 3/7/2014) (Entered: 03/07/2014)	
198	03/07/2014	ORDER by Judge Yvonne Gonzalez Rogers granting 194 Motion for Pro Hac Vice as to James Elroy Quigley representing Plaintiff. (fs, COURT STAFF) (Filed on 3/7/2014) (Entered: 03/07/2014)	
199	03/10/2014	JOINT CLAIM CONSTRUCTION STATEMENT filed by Unwired Planet, LLC, Apple Inc. (Attachments: # 1 Exhibit A, # 2 Exhibit B, # 3 Exhibit C, # 4 Exhibit D, # 5 Exhibit E - Part 1, # 6 Exhibit E - Part 2, # 7 Exhibit F, # 8 Exhibit G)(Reichman, Courtland) (Filed on 3/10/2014) Modified on 3/11/2014 (cpS, COURT STAFF). (Entered: 03/10/2014)	
200	03/24/2014	NOTICE of Change In Counsel by Brooke Myers Wallace (Wallace, Brooke) (Filed on 3/24/2014) (Entered: 03/24/2014)	
201	03/24/2014	MOTION for Leave to File Excess Pages for the Parties' Opening Claim Construction Briefs filed by Apple Inc. (Attachments: # 1 Affidavit Hsin Declaration ISO Apple's Unopposed Administrative Motion for Enlargement of the Page Limit for the Parties' Opening Claim Construction Briefs to 35 Pages, # 2 Proposed Order [Proposed] Order ISO Apple's Unopposed Administrative Motion for Enlargement of the Page Limit for the Parties' Opening Claim Construction Briefs to 35 Pages)(Wallace, Brooke) (Filed on 3/24/2014) (Entered: 03/24/2014)	
202	03/26/2014	ORDER by Judge Yvonne Gonzalez Rogers granting 201 Motion for Leave to File Excess Pages (fs, COURT STAFF) (Filed on 3/26/2014) (Entered: 03/26/2014)	
203	04/07/2014	CLAIM CONSTRUCTION STATEMENT Opening Claim Construction Brief per L.R. 4-5(a) filed by Unwired Planet, LLC. (Attachments: # 1 Exhibit 1, # 2 Exhibit 2, # 3 Exhibit 3, # (4 Exhibit 4)(Campbell, John) (Filed on 4/7/2014) (Entered: 04/07/2014)	Events since last full update
204	04/07/2014	CLAIM CONSTRUCTION STATEMENT Opening Claim Construction Brief per L.R. 4-5(a) filed by Apple Inc. (Wallace, Brooke) (Filed on 4/7/2014) (Entered: 04/07/2014)	Events since last full update
205	04/07/2014	Declaration of Y. Ernest Hsin in Support of 204 Claim	Events since last full

#	Date	Proceeding Text	Source
		Construction Statement Opening Claim Construction Brief per L.R. 4-5(a) filed byApple Inc. (Attachments: # 1 Exhibit 1-4, # 2 Exhibit 5-7, # 3 Exhibit 8, # 4 Exhibit 9-11, # 5 Exhibit 12-15, # 6 Exhibit 16-19, # 7 Exhibit 20)(Related document(s) 204) (Wallace, Brooke) (Filed on 4/7/2014) (Entered: 04/07/2014)	update
206	04/07/2014	Declaration of Peter Rysavy in Support of 204 Claim Construction Statement Opening Claim Construction Brief per L.R. 4-5(a) filed byApple Inc. (Attachments: # 1 Exhibit 1)(Related document(s) 204) (Wallace, Brooke) (Filed on 4/7/2014) (Entered: 04/07/2014)	Events since last full update
207	04/15/2014	MOTION for leave to appear in Pro Hac Vice (Filing fee $ 305, receipt number 0971-8535621.) filed by Apple Inc. (Kalogeras, Steven) (Filed on 4/15/2014) (Entered: 04/15/2014)	Events since last full update
--	04/17/2014	CASE REASSIGNED to the Honorable Vince Chhabria, United States District Judge. All parties must review the reassignment order posted at http://cand.uscourts.gov/orders/vc-order.pdf and comply with its requirements, including submitting a case management statement. This is a text only docket entry. The reassignment order associated with this notice may be viewed at http://cand.uscourts.gov/orders/vc-order.pdf Case Management Statement due by 5/1/2014. Signed by Executive Committee on 4/17/14. (kc, COURT STAFF) (Filed on 4/17/2014) (Entered: 04/17/2014)	Events since last full update

Patents

Number	Title	Issued	Class	Subclass
6,317,594	System and method for providing data to a wireless device upon detection of activity of the device on a wireless network	11/13/2001	455	414.1
6,317,831	Method and apparatus for establishing a secure connection over a one-way data path	11/13/2001	713	171
6,321,092	Multiple input data management for wireless location-based applications	11/20/2001	455	456.5
6,532,446	Server based speech recognition user interface for wireless devices	03/11/2003	704	270.1
6,647,260	Method and system facilitating web based provisioning of two-way mobile communications devices	11/11/2003	455	419
6,813,491	Method and apparatus for adapting settings of wireless communication devices in accordance with user proximity	11/02/2004	455	414.1
7,020,685	Method and apparatus for providing internet content to SMS-based wireless devices	03/28/2006	709	204
7,233,790	Device capability based discovery, packaging and provisioning of content for wireless mobile devices	06/19/2007	455	419
7,299,033	Domain-based management of distribution of digital content from multiple suppliers to multiple wireless services subscribers	11/20/2007	455	414.1
7,522,927	Interface for wireless location information	04/21/2009	455	456.2

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Document (1)

1. *1:21cv1448, Starz Entertainment, Llc V. Vl Collective Ip, Llc Et Al*

Client/Matter: -None-

Search Terms: 7233790 or 7,233,790

Search Type: Terms and Connectors

Narrowed by:

Content Type	Narrowed by
Dockets	-None-

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1:21cv1448, Starz Entertainment, Llc V. Vl Collective Ip, Llc Et Al

US District Court Docket

United States District Court, Delaware

(Wilmington)

This case was retrieved on 06/23/2022

Header

Case Number: 1:21cv1448
Date Filed: 10/13/2021
Assigned To: Judge Jennifer L. Hall
Nature of Suit: Patent (830)
Cause: Patent Infringement
Lead Docket: None
Other Docket: 1:22cv00229, 1:22cv00680
Jurisdiction: Federal Question

Class Code: Open
Statute: 35:271
Jury Demand: Plaintiff
Demand Amount: $0
NOS Description: Patent

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Plaintiff

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Proceedings

#	Date	Proceeding Text	Source
1	10/13/2021	COMPLAINT for Declaratory Judgment filed with Jury Demand against Starz Entertainment, LLC - Magistrate Consent Notice to Pltf. (Filing fee $ 402, receipt number ADEDC-3720165.) - filed by Starz Entertainment, LLC. (Attachments: # 1 Exhibit 1-4, # 2 Civil Cover Sheet)(twk) (Entered: 10/14/2021)	
2	10/13/2021	Notice, Consent and Referral forms re: U.S. Magistrate Judge jurisdiction. (twk) (Entered: 10/14/2021)	
3	10/13/2021	Report to the Commissioner of Patents and Trademarks for Patent/Trademark Number(s) 7,233,790; 7,440,559; 8,605,794; RE43,113. (twk) (Entered: 10/14/2021)	
4	10/13/2021	Disclosure Statement pursuant to Rule 7.1: identifying Corporate Parent Lionsgate Entertainment Corp. for Starz Entertainment, LLC filed by Starz Entertainment, LLC. (twk) (Entered: 10/14/2021)	
5	10/13/2021	Summons Issued with Magistrate Consent Notice attached as to VideoLabs, Inc. on 10/14/2021. (twk) (Entered: 10/14/2021)	
6	10/13/2021	Summons Issued with Magistrate Consent Notice attached as to VL Collective IP, LLC on 10/13/2021. (twk) (Entered: 10/14/2021)	
7	10/19/2021	MOTION for Pro Hac Vice Appearance of Attorney Timothy J. Carroll, Catherine N. Taylor and Manny J. Caixeiro - filed by Starz Entertainment, LLC. (Pedi, Nicole) (Entered: 10/19/2021)	
	10/20/2021	Case Assigned to Judge Colm F. Connolly. Please include the initials of the Judge (CFC) after the case number on all documents filed. (nms) (Entered: 10/20/2021)	

#	Date	Proceeding Text	Source
	10/20/2021	SO ORDERED, re 7 MOTION for Pro Hac Vice Appearance of Attorney Timothy J. Carroll, Catherine N. Taylor and Manny J. Caixeiro filed by Starz Entertainment, LLC. Ordered by Judge Colm F. Connolly on 10/20/2021. (kmd) (Entered: 10/20/2021)	
	10/20/2021	Pro Hac Vice Attorneys Catherine N. Taylor, Manny J. Caixeiro, and Timothy J. Carroll for Starz Entertainment, LLC added for electronic noticing. Pursuant to Local Rule 83.5 (d)., Delaware counsel shall be the registered users of CM/ECF and shall be required to file all papers. (twk) (Entered: 10/20/2021)	
8	10/21/2021	SUMMONS Returned Executed by Starz Entertainment, LLC. VideoLabs, Inc. served on 10/20/2021, answer due 11/10/2021. (Farnan, Kelly) (Entered: 10/21/2021)	
9	10/21/2021	SUMMONS Returned Executed by Starz Entertainment, LLC. VL Collective IP, LLC served on 10/21/2021, answer due 11/12/2021. (Farnan, Kelly) (Entered: 10/21/2021)	
10	11/12/2021	MOTION for Extension of Time to Respond to the Complaint (Unopposed) - filed by Starz Entertainment, LLC. (Attachments: # 1 Text of Proposed Order, # 2 Certificate of Compliance With Type Volume Limitation)(Farnan, Kelly) (Entered: 11/12/2021)	
11	11/15/2021	ORDER granting 10 MOTION for Extension of Time to Respond to the Complaint (Unopposed), filed by Starz Entertainment, LLC. Set/Reset Answer Deadlines: VL Collective IP, LLC answer due 1/11/2022; VideoLabs, Inc. answer due 1/11/2022. Signed by Judge Colm F. Connolly on 11/15/2021. (kmd) (Entered: 11/15/2021)	
12	01/11/2022	ANSWER to 1 Complaint, with Jury Demand , COUNTERCLAIM against Starz Entertainment, LLC by VL Collective IP, LLC, VideoLabs, Inc.. (Attachments: # 1 Exhibit 1, # 2 Exhibit 2, # 3 Exhibit 3, # 4 Exhibit 4, # 5 Exhibit 5, # 6 Exhibit 6, # 7 Exhibit 7)(Farnan, Brian) (Main Document 12 replaced on 1/14/2022) (nmf,). (Entered: 01/11/2022)	
13	01/12/2022	Order Setting Telephonic Scheduling Conference: A Scheduling Conference is set for 2/16/2022 at 02:00 PM before Judge Colm F. Connolly. If the parties have no disputes about the scheduling order, the Court will not require the parties to appear at a conference. Signed by Judge Colm F. Connolly on 1/12/2022. (nmf) (Entered: 01/12/2022)	
	01/14/2022	CORRECTING ENTRY: The pdf of the answer at D.I. 12 has been replaced with a corrected version per request of counsel. (nmf) (Entered: 01/14/2022)	
14	01/18/2022	MOTION for Pro Hac Vice Appearance of Attorney Christine E. Lehman, Wesley L. White, Jaime F. Cardenas-Navia, and Taylor Mauze - filed by VL Collective IP, LLC, VideoLabs, Inc.. (Farnan, Brian) (Entered: 01/18/2022)	
	01/18/2022	SO ORDERED, re 14 MOTION for Pro Hac Vice Appearance of Attorney Christine E. Lehman, Wesley L. White, Jaime F. Cardenas-Navia, and Taylor Mauze, filed by VL Collective IP, LLC, VideoLabs, Inc. Ordered by Judge Colm F. Connolly on 1/18/2022. (kmd) (Entered: 01/18/2022)	
15	01/21/2022	Disclosure Statement pursuant to Rule 7.1: Identifying Corporate Parent VL IP Holdings LLC for VL Collective IP, LLC filed by VL Collective IP, LLC, VideoLabs, Inc.. (Farnan, Brian) (Entered: 01/21/2022)	
16	01/26/2022	STIPULATION TO EXTEND TIME for Plaintiff to move, answer, or otherwise respond to Defendants' Counterclaims to February 15, 2022 - filed by Starz Entertainment, LLC. (Farnan, Kelly) (Entered: 01/26/2022)	
	01/26/2022	SO ORDERED, re 16 STIPULATION TO EXTEND TIME for Plaintiff to move, answer, or otherwise respond to Defendants'	

#	Date	Proceeding Text	Source
		Counterclaims to February 15, 2022, filed by Starz Entertainment, LLC. Ordered by Judge Colm F. Connolly on 1/26/2022. (kmd) (Entered: 01/26/2022)	
	01/26/2022	Pro Hac Vice Attorneys Jaime F. Cardenas-Navia, Christine E. Lehman, Taylor Mauze, and Wesley L. White for VL Collective IP, LLC and VideoLabs, Inc. added for electronic noticing. Pursuant to Local Rule 83.5 (d)., Delaware counsel shall be the registered users of CM/ECF and shall be required to file all papers. (srs) (Entered: 01/26/2022)	
17	02/09/2022	PROPOSED ORDER Proposed Scheduling Order by Starz Entertainment, LLC. (Attachments: # 1 Letter to Court)(Farnan, Kelly) (Entered: 02/09/2022)	
18	02/10/2022	SCHEDULING ORDER: Case referred to the Magistrate Judge for the purpose of exploring ADR. Joinder of Parties due by 3/16/2022. Amended Pleadings due by 3/16/2022. Fact Discovery completed by 4/14/2023. Dispositive Motions due by 9/22/2023. Answering Brief due 10/20/2023. Reply Brief due 11/3/2023. Joint Claim Construction Brief due by 11/10/2022. A Markman Hearing is set for 12/16/2022 at 09:00 AM in Courtroom 4B before Judge Colm F. Connolly. Proposed Pretrial Order due by 2/6/2024. A Final Pretrial Conference is set for 2/27/2024 at 03:00 PM in Courtroom 4B before Judge Colm F. Connolly. A Jury Trial is set for 3/11/2024 at 08:30 AM in Courtroom 4B before Judge Colm F. Connolly. Signed by Judge Colm F. Connolly on 2/10/2022. (nmf) (Entered: 02/10/2022)	
	02/10/2022	The 2/16/2022 Scheduling Conference is canceled per the filing and entry of the unopposed Scheduling Order. (nmf) (Entered: 02/10/2022)	
	02/10/2022	CASE REFERRED to Magistrate Judge Mary Pat Thynge for Mediation. Please see Standing Order dated January 20, 2016, regarding disclosure of confidential ADR communications. A link to the standing order is provided here for your convenience at https://www.ded.uscourts.gov/sites/ded/files/forms/StandingOrderforADR-Mediation.pdf (Taylor, Daniel) (Entered: 02/10/2022)	
	02/10/2022	ORAL ORDER: This matter has been referred to Chief Magistrate Judge Mary Pat Thynge for ADR. Should any party (or all parties) desire to discuss mediation and its timing, the party(ies) shall contact Judge Thynge and her Law Clerk, Daniel Taylor (daniel_taylor@ded.uscourts.gov), to request that a teleconference be scheduled. Ordered by Judge Mary Pat Thynge on 2/10/2022. (Taylor, Daniel) (Entered: 02/10/2022)	
19	02/15/2022	MOTION to Dismiss for Failure to State a Claim Dismiss Counterclaims - filed by Starz Entertainment, LLC. (Attachments: # 1 Text of Proposed Order Proposed Order)(Farnan, Kelly) (Entered: 02/15/2022)	
20	02/15/2022	OPENING BRIEF in Support re 19 MOTION to Dismiss for Failure to State a Claim Dismiss Counterclaims filed by Starz Entertainment, LLC.Answering Brief/Response due date per Local Rules is 3/1/2022. (Farnan, Kelly) (Entered: 02/15/2022)	
21	02/15/2022	DECLARATION re 19 MOTION to Dismiss for Failure to State a Claim Dismiss Counterclaims Manny J. Caixeiro by Starz Entertainment, LLC. (Attachments: # 1 Exhibit A-F)(Farnan, Kelly) (Entered: 02/15/2022)	
22	02/24/2022	NOTICE OF SERVICE of Defendant VideoLabs' Initial Disclosures Pursuant to Rule 26(a)(1) filed by VL Collective IP, LLC, VideoLabs, Inc..(Farnan, Michael) (Entered: 02/24/2022)	
23	02/24/2022	NOTICE OF SERVICE of Plaintiffs Initial Disclosures Pursuant to Fed. R. Civ. P. 26(a)(1) filed by Starz Entertainment, LLC.(Farnan, Kelly) (Entered: 02/24/2022)	

#	Date	Proceeding Text	Source
24	03/01/2022	ANSWERING BRIEF in Opposition re 19 MOTION to Dismiss for Failure to State a Claim Dismiss Counterclaims filed by VL Collective IP, LLC, VideoLabs, Inc..Reply Brief due date per Local Rules is 3/8/2022. (Farnan, Michael) (Entered: 03/01/2022)	
25	03/03/2022	STIPULATION TO EXTEND TIME to submit a Proposed Protective Order to 3/10/2022 - filed by VL Collective IP, LLC, VideoLabs, Inc.. (Farnan, Brian) (Entered: 03/03/2022)	
26	03/04/2022	SO ORDERED, re 25 STIPULATION TO EXTEND TIME to submit a Proposed Protective Order to 3/10/2022, filed by VL Collective IP, LLC, VideoLabs, Inc. Signed by Judge Colm F. Connolly on 3/4/2022. (kmd) (Entered: 03/04/2022)	
27	03/08/2022	REPLY BRIEF re 19 MOTION to Dismiss for Failure to State a Claim Dismiss Counterclaims filed by Starz Entertainment, LLC. (Farnan, Kelly) (Entered: 03/08/2022)	
28	03/10/2022	PROPOSED ORDER Stipulated Protective Order and Prosecution Bar by Starz Entertainment, LLC. (Farnan, Kelly) (Entered: 03/10/2022)	
29	03/11/2022	STIPULATED PROTECTIVE ORDER AND PROSECUTION BAR. Signed by Judge Colm F. Connolly on 3/11/2022. (kmd) (Entered: 03/11/2022)	
30	03/11/2022	REQUEST for Oral Argument by Starz Entertainment, LLC re 19 MOTION to Dismiss for Failure to State a Claim Dismiss Counterclaims. (Farnan, Kelly) (Entered: 03/11/2022)	
31	03/14/2022	NOTICE OF SERVICE of Plaintiff Starz Entertainment, LLCs Disclosures Pursuant to Section 3 of the Delaware Default Standard for Discovery filed by Starz Entertainment, LLC.(Farnan, Kelly) (Entered: 03/14/2022)	
32	03/14/2022	NOTICE OF SERVICE of Defendant VideoLabs' Initial Disclosures Pursuant to Paragraph 3 of The Delaware Default Standard for Discovery filed by VL Collective IP, LLC, VideoLabs, Inc..(Farnan, Michael) (Entered: 03/14/2022)	
33	03/16/2022	MOTION to Add Counterclaim-Defendants [Unopposed] - filed by VL Collective IP, LLC, VideoLabs, Inc.. (Attachments: # 1 Exhibit A, # 2 Exhibit B, # 3 Text of Proposed Order)(Farnan, Brian) (Entered: 03/16/2022)	
34	03/31/2022	NOTICE OF SERVICE of Defendant VideoLabs' Disclosure of Asserted Claims and Infringement Contentions filed by VL Collective IP, LLC, VideoLabs, Inc..(Farnan, Michael) (Entered: 03/31/2022)	
	04/04/2022	CASE NO LONGER REFERRED to Chief Magistrate Judge Thynge for the purpose of exploring ADR. Pursuant to the Court's Standing Order No. 2022-2, dated March 14, 2022, "[u]nless otherwise directed by the Court, Magistrate Judges will no longer engage in alternative dispute resolution of patent and securities cases." See also 28 U.S.C. § 652(b). (Taylor, Daniel) (Entered: 04/04/2022)	
	04/11/2022	ORAL ORDER: On or before April 20, 2022, the parties shall either (1) submit to the Clerk of Court an executed Form AO 85 Notice, Consent, and Reference of a Civil Action to a Magistrate Judge, indicating their consent to have a United States Magistrate Judge conduct all proceedings in this case including trial, the entry of final judgment, and post-trial proceedings; or (2) file a joint letter indicating that all the parties do not consent to a referral of this action to a Magistrate Judge. The letter should not indicate which party or parties did not consent. If all the parties consent, the case will be referred to Magistrate Judge Hall. Because of the Court's caseload, if the parties do not consent, the Court intends to assign the case to a visiting judge from another district. Ordered by Judge Colm F. Connolly on 4/11/2022. (kmd) (Entered:	

#	Date	Proceeding Text	Source
		04/11/2022)	
35	04/20/2022	CONSENT to Jurisdiction by U.S. Magistrate Judge filed by Starz Entertainment, LLC, VL Collective IP, LLC, VideoLabs, Inc. Case reassigned to Magistrate Judge Jennifer L. Hall. Signed by Judge Colm F. Connolly on 4/20/2022. (nmf) (Entered: 04/20/2022)	
36	04/22/2022	ORDER granting 33 Motion to Add Counterclaim-Defendants [Unopposed]. Signed by Judge Jennifer L. Hall on 4/22/2022. (ceg) (Entered: 04/22/2022)	
37	04/22/2022	NOTICE of Change of Address by Michael J. Farnan (Farnan, Michael) (Entered: 04/22/2022)	
38	04/22/2022	ANSWER to 1 Complaint, with Jury Demand , COUNTERCLAIM against Starz Entertainment, LLC, Starz, LLC, StarzPlay Management US, LLC, StarzPlay US, LLC by VL Collective IP, LLC, VideoLabs, Inc.. (Attachments: # 1 Exhibits 1-7)(Farnan, Brian) (Entered: 04/22/2022)	
39	04/29/2022	STIPULATION and Proposed Order Regarding Various Deadlines by Starz Entertainment, LLC, Starz, LLC, StarzPlay Management US, LLC, StarzPlay US, LLC. (Farnan, Kelly) (Entered: 04/29/2022)	
40	05/05/2022	NOTICE of Appearance by Kelly E. Farnan on behalf of Starz, LLC, StarzPlay Management US, LLC, StarzPlay US, LLC (Farnan, Kelly) (Entered: 05/05/2022)	
41	05/05/2022	NOTICE of Appearance by Nicole Kathleen Pedi on behalf of Starz, LLC, StarzPlay Management US, LLC, StarzPlay US, LLC (Pedi, Nicole) (Entered: 05/05/2022)	
42	05/05/2022	MOTION for Pro Hac Vice Appearance of Attorney Manny J. Caixeiro, Catherine N. Taylor and Timothy J. Carroll - filed by Starz, LLC, StarzPlay Management US, LLC, StarzPlay US, LLC. (Farnan, Kelly) (Entered: 05/05/2022)	
43	05/06/2022	NOTICE of Starz Entertainment, LLC Concerning Response to Amended Counterclaims by Starz Entertainment, LLC, Starz, LLC, StarzPlay Management US, LLC, StarzPlay US, LLC re 36 Order on Motion for Miscellaneous Relief, 19 MOTION to Dismiss for Failure to State a Claim Dismiss Counterclaims, 38 Answer to Complaint,, Counterclaim. (Farnan, Kelly) (Entered: 05/06/2022)	
	05/06/2022	SO ORDERED, 39 Stipulation and Order to Extend Deadlines. ORDERED by Judge Jennifer L. Hall on 5/6/2022. (ceg) (Entered: 05/06/2022)	
44	05/13/2022	STIPULATION and [Proposed] Order to Extend Deadlines for: (i) VideoLabs' Updated or Amended Infringement Contentions to 5/20/2022 and (ii) Starz's Invalidity Contentions to 6/23/2022 - filed by VL Collective IP, LLC, VideoLabs, Inc. (Farnan, Brian) Modified on 5/13/2022 (ceg). (Entered: 05/13/2022)	
45	05/13/2022	ORAL ORDER denying 42 Motion to Appear Pro Hac Vice without prejudice to be refiled upon payment of fees. ORDERED by Judge Jennifer L. Hall on 5/13/2022. (ceg) (Entered: 05/13/2022)	
	05/13/2022	SO ORDERED, 44 Stipulation and Order to Extend Deadlines for: (i) VideoLabs' Updated or Amended Infringement Contentions to 5/20/2022 and (ii) Starz's Invalidity Contentions to 6/23/2022. ORDERED by Judge Jennifer L. Hall on 5/13/2022. (ceg) (Entered: 05/13/2022)	
46	05/13/2022	MOTION for Pro Hac Vice Appearance of Attorney Manny J. Caixeiro, Catherine N. Taylor and Timothy J. Carroll - filed by Starz, LLC, StarzPlay Management US, LLC, StarzPlay US, LLC. (Pedi, Nicole) (Entered: 05/13/2022)	
	05/16/2022	SO ORDERED, 46 Motion for Pro Hac Vice Appearance of Attorney Manny J. Caixeiro, Catherine N. Taylor and Timothy J. Carroll filed by StarzPlay Management US, LLC, Starz, LLC,	

#	Date	Proceeding Text	Source
		StarzPlay US, LLC. ORDERED by Judge Jennifer L. Hall on 5/16/2022. (ceg) (Entered: 05/16/2022)	
47	05/20/2022	STIPULATION TO EXTEND TIME to Serve (i) Updated Infringement Contentions and (ii) Invalidity Contentions to (i) May 24, 2022 and (ii) June 27, 2022 - filed by VideoLabs, Inc.. (Farnan, Brian) (Entered: 05/20/2022)	
48	05/24/2022	STIPULATION TO EXTEND TIME to Serve (i) Updated Infringement Contentions and (ii) Invalidity Contentions to (i) 5/27/2022 and (ii) 6/30/2022 - filed by VL Collective IP, LLC, VideoLabs, Inc.. (Farnan, Michael) (Entered: 05/24/2022)	
49	05/31/2022	NOTICE OF SERVICE of Defendant VideoLabs' Amended Disclosure of Asserted Claims and Infringement Contentions filed by VL Collective IP, LLC, VideoLabs, Inc..(Farnan, Michael) (Entered: 05/31/2022)	
	05/31/2022	SO ORDERED, 48 Stipulation to Extend Time to Serve (i) Updated Infringement Contentions and (ii) Invalidity Contentions to (i) 5/27/2022 and (ii) 6/30/2022. ORDERED by Judge Jennifer L. Hall on 5/31/2022. (ceg) (Entered: 05/31/2022)	
	06/01/2022	SO ORDERED, 47 Stipulation to Extend Time to Serve (i) Updated Infringement Contentions and (ii) Invalidity Contentions to (i) May 24, 2022 and (ii) June 27, 2022. ORDERED by Judge Jennifer L. Hall on 6/1/2022. (ceg) (Entered: 06/01/2022)	
50	06/02/2022	JOINDER by Starz, LLC, StarzPlay Management US, LLC, StarzPlay US, LLC, joining in 27 Reply Brief, 21 Declaration, 20 Opening Brief in Support, 19 Motion to Dismiss for Failure to State a Claim . (Farnan, Kelly) (Entered: 06/02/2022)	
51	06/02/2022	Revised Proposed Stipulated Protective Order and Prosecution Bar by VL Collective IP, LLC, VideoLabs, Inc. (Farnan, Brian) Modified on 6/3/2022 (ceg). (Entered: 06/02/2022)	
52	06/03/2022	MOTION for Pro Hac Vice Appearance of Attorney Michael Matulewicz-Crowley - filed by VL Collective IP, LLC, VideoLabs, Inc.. (Farnan, Brian) (Entered: 06/03/2022)	
53	06/03/2022	SO ORDERED, 52 Motion for Pro Hac Vice Appearance of Attorney Michael Matulewicz-Crowley filed by VL Collective IP, LLC, VideoLabs, Inc. ORDERED by Judge Jennifer L. Hall on 6/3/2022. (ceg) (Entered: 06/03/2022)	
54	06/03/2022	STIPULATION regarding Amended Contentions Deadlines by VL Collective IP, LLC, VideoLabs, Inc.. (Farnan, Michael) (Entered: 06/03/2022)	
55	06/03/2022	NOTICE OF SERVICE of Defendant Videolabs' Second Amended Disclosure of Asserted Claims and Infringement Contentions filed by VL Collective IP, LLC, VideoLabs, Inc..(Farnan, Michael) (Entered: 06/03/2022)	
56	06/03/2022	SO ORDERED, 51 Revised Stipulated Protective Order and Prosecution Bar. Signed by Judge Jennifer L. Hall on 6/3/2022. (ceg) (Entered: 06/03/2022)	
	06/06/2022	SO ORDERED, 54 Stipulation and Order Amending Contentions Deadlines. ORDERED by Judge Jennifer L. Hall on 6/6/2022. (ceg) (Entered: 06/06/2022)	
	06/07/2022	Pro Hac Vice Attorney Michael J.X. Matulewicz-Crowley for VL Collective IP, LLC added for electronic noticing. Pursuant to Local Rule 83.5 (d)., Delaware counsel shall be the registered users of CM/ECF and shall be required to file all papers. (mpb) (Entered: 06/07/2022)	
57	06/21/2022	ORAL ORDER Setting Hearing on Motion: A hearing on the pending Motion to Dismiss Counterclaims (D.I. 19) is scheduled for September 2, 2022, at 10:00 AM via video conference before Judge Jennifer L. Hall. Each side shall have 20 minutes to present	

#	Date	Proceeding Text	Source
		argument on the pending motion. The Court expects to issue its ruling on the pending motion from the bench either immediately following argument or after a recess. The parties shall send a joint email to Cailah_Garfinkel@ded.uscourts.gov containing the following information regarding oral argument on or before August 31, 2022: (1) a video conference link with instructions on how to join the conference; (2) a separate audio-only dial-in; and (3) a list of attendees for each party, specifying who will be presenting argument. Any video conference must be sufficient to accommodate Judge Hall, the courtroom deputy, a law clerk, and the court reporter. Any slide presentations or demonstratives that the parties wish to use during the hearing shall be emailed to Cailah_Garfinkel@ded.uscourts.gov no later than 24 hours prior to the hearing. Slide presentations or demonstratives may be presented by the parties on the video conference screen or referred to by the parties at the hearing. Once the dial-in information is received by the Court, members of the public may obtain it by contacting Chambers at Cailah_Garfinkel@ded.uscourts.gov. All participants (including any media and members of the public) are reminded that recording or broadcasting proceedings is STRICTLY PROHIBITED. All participants shall be present on the video conference no later than 10 minutes prior to the start of the hearing. ORDERED by Judge Jennifer L. Hall on 6/21/2022. (ceg) (Entered: 06/21/2022)	

Patents

Number	Title	Issued	Class	Subclass
RE43,113	Domain-based management of distribution of digital content from multiple suppliers to multiple wireless services subscribers	01/17/2012	455	414.1
6,345,279	Methods and apparatus for adapting multimedia content for client devices	02/05/2002	1	1
6,757,740	Systems and methods for determining collecting and using geographic locations of internet users	06/29/2004	709	245
7,233,790	Device capability based discovery, packaging and provisioning of content for wireless mobile devices	06/19/2007	455	419
7,440,559	System and associated terminal, method and computer program product for controlling the flow of content	10/21/2008	379	201.01
8,015,480	System and method for media stream indexing and synchronization	09/06/2011	715	201
8,605,794	Method for synchronizing content-dependent data segments of files	12/10/2013	375	240.26

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User Name: Renee Preston
Date and Time: Thursday, June 23, 2022 6:24:00 PM EDT
Job Number: 173888872

Document (1)

1. *15-1725 Unwired Planet, LLC v. Apple Inc.*
   Client/Matter: -None-
   Search Terms: 7233790 or 7,233,790
   Search Type: Terms and Connectors
   Narrowed by:

Content Type	Narrowed by
Dockets	-None-

15-1725, Unwired Planet, LLC v. Apple Inc.

US Circuit Court of Appeals - Federal Circuit

This case was retrieved on 06/23/2022

Header

Case Number: 15-1725
Date Filed: 06/11/2015
Date Full Case Retrieved: 06/23/2022
Status: Closed 07/22/2016
Misc: (999) 830: Patent Infringement (Fed. Qst.); Appeal

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15-1725, Unwired Planet, LLC v. Apple Inc.

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Associated Cases

Case Number	Relationship	Lead Case	Member Case	Additional Information
	Current Case: Cross-appeal	15-1725	15-1795	StartDate: 07/06/2015

Additional Case

Additional Case Information

Civil US
Appeal from: United States District Court for the Northern District of California
District: 0971 Division: 3 CaseNumber: 3:13-cv-04134-VC DateFiled: 09/06/2013
Trial Judge: Vince Chhabria , Judge
Date NOA Filed: 06/05/2015

Proceedings

Date	#	Proceeding Text	Details
06/11/2015		Appeal docketed. Received: 06/10/2015. [247517]Entry of Appearance due 06/25/2015. Certificate of Interest is due on	

Date	#	Proceeding Text	Details
		06/25/2015. Docketing Statement due 06/25/2015. Appellant/Petitioner's brief is due 08/10/2015. [IW]	
06/25/2015		Entry of appearance for Mark A. Perry as principal counsel for Appellee Apple Inc.. Service: 06/25/2015 by email. [251505] [Mark Perry]	
06/25/2015		Certificate of Interest for the Appellee Apple Inc.. Service: 06/25/2015 by email. [251506] [Mark Perry]	
06/25/2015		Docketing Statement for the Appellee Apple Inc.. Service: 06/25/2015 by email. [251507] [Mark Perry]	
06/25/2015		Entry of appearance for Brooke Myers Wallace as of counsel for Appellee Apple Inc.. Service: 06/25/2015 by email. [251508] [Brooke Wallace]	
06/25/2015		Entry of appearance for Brian M. Buroker as of counsel for Appellee Apple Inc.. Service: 06/25/2015 by email. [251509] [Brian Buroker]	
06/25/2015		Entry of appearance for Alex Harris as of counsel for Appellee Apple Inc.. Service: 06/25/2015 by email. [251512] [Alexander Harris]	
06/25/2015		Entry of appearance for Y. Ernest Hsin as of counsel for Appellee Apple Inc.. Service: 06/25/2015 by email. [251514] [Yu-Chieh Hsin]	
06/25/2015		Entry of appearance for H. Mark Lyon as of counsel for Appellee Apple Inc.. Service: 06/25/2015 by email. [251588] [H. Mark Lyon]	
07/01/2015		Entry of appearance for Stuart M. Rosenberg as of counsel for Appellee Apple Inc.. Service: 07/01/2015 by email. [253002] [Stuart Rosenberg]	
07/01/2015		Docketing Statement for the Appellant Unwired Planet, LLC. Service: 07/01/2015 by email. [253069] [John Campbell]	
07/01/2015		Certificate of Interest for the Appellant Unwired Planet, LLC. Service: 07/01/2015 by email. [253070] [John Campbell]	
07/01/2015		Entry of appearance for John B. Campbell as of counsel for Appellant Unwired Planet, LLC. Service: 07/01/2015 by email. [253071] [John Campbell]	
07/01/2015		Entry of appearance for Theodore Stevenson III as principal counsel for Appellant Unwired Planet, LLC. Service: 07/01/2015 by email. [253073] [John Campbell]	

Date	#	Proceeding Text	Details
07/06/2015		Note to file: The following cases are associated:15-1725 Lead with 15-1795 cross-appeal. FURTHER ENTRIES WILL BE ADDED TO THE LEAD APPEAL ONLY. [253654] [JCS]	
07/24/2015		MOTION of Appellant Unwired Planet, LLC to extend the time to 09/09/2015 at 05:00 pm to file the appellant/petitioner's principal brief. Response/Opposition is due 08/06/2015 [Consent: unopposed]. Service: 07/24/2015 by email. [259249] [Theodore Stevenson]	
07/24/2015		ORDER granting motion to extend time to file appellant's principal brief filed by Appellant Unwired Planet, LLC. Brief due 09/09/2015. Service as of this date by Clerk of Court. [259302] [FMS]	
07/27/2015		Certificate of Compliance with Fed. Cir. R. 11(d) (Trial Court) for Cross-Appellant Apple Inc.. Service: 07/27/2015 by email. [259755] [Mark Perry]	
07/27/2015		Certificate of Compliance with Fed. Cir. R. 11(d) (Trial Court) for Appellant Unwired Planet, LLC. Service: 07/27/2015 by email. [259756] [Theodore Stevenson]	
09/09/2015		Entry of appearance for Joel L. Thollander as of counsel for Appellant Unwired Planet, LLC. Service: 09/09/2015 by email. [270800] [Joel Thollander]	
09/09/2015		Amended Certificate of Interest for the Appellant Unwired Planet, LLC. Service: 09/09/2015 by email. [270801] [John Campbell]	
09/09/2015		TENDERED from Appellant Unwired Planet, LLC. Title: CONFIDENTIAL OPENING BRIEF Service: 09/09/2015 by email. [270802] This brief has been withdrawn. [Theodore Stevenson]	
09/09/2015		TENDERED from Appellant Unwired Planet, LLC. Title: OPENING BRIEF. Service: 09/09/2015 by email. [270804]. This brief has been replaced. See Doc No. [Theodore Stevenson]	
09/09/2015		CONFIDENTIAL BRIEF FILED for Appellant Unwired Planet, LLC [22]. Number of Pages: 61. Service: 09/09/2015 by email. Pursuant to ECF-10(B) six paper copies should be filed of the confidential version only. [271598] This brief has been withdrawn. [LN]	
09/09/2015		BRIEF FILED for Appellant Unwired Planet, LLC [23]. Number of Pages: 61. Service: 09/09/2015 by email. Pursuant to ECF-10, filer is directed to file six copies of the brief in paper format. The paper copies of the brief	

Date	#	Proceeding Text	Details
		should be received by the court on or before 09/16/2015. Cross-Appellant Apple Inc. brief is due 10/22/2015. [271604] This brief has been corrected. See entry #61. [LN]	
09/11/2015		CLERK'S OFFICE QUALITY CONTROL MESSAGE: re: Brief Docket No. [23], confidential Brief Docket No. [22], ERROR: Douglas A. Cawley and Kevin Burgess are listed on the briefs as counsel for Appellant. CORRECTION: Douglas A. Cawley and Kevin Burgess must file an entry of appearance. [271324] [LN]	
09/11/2015		Entry of appearance for Kevin L. Burgess as of counsel for Appellant Unwired Planet, LLC. Service: 09/11/2015 by email. [271506] [Kevin Burgess]	
09/11/2015		Entry of appearance for Douglas A. Cawley as of counsel for Appellant Unwired Planet, LLC. Service: 09/11/2015 by email. [271550] [Kevin Burgess]	
09/15/2015		6 paper copies of the Opening Brief [28] received from Appellant Unwired Planet, LLC. [272158] [LAJ]	
10/02/2015		MOTION of Cross-Appellant Apple Inc. to extend the time to 11/20/2015 at 11:59 pm to file the appellee/respondent/cross-appellant's principal brief. Response/Opposition is due 10/16/2015 [Consent: unopposed]. Service: 10/02/2015 by email. [277051] [Mark Perry]	
10/05/2015		**TEXT ONLY** ORDER granting motion to extend time to file appellee/respondent/cross-appellant principal brief filed by Cross-Appellant Apple Inc. Cross-Appellant Apple Inc. brief due 11/20/2015. Service as of this date by Clerk of Court. This order has been issued without an attached document and is official and binding. [277671] [LN]	
11/20/2015		MOTION of Cross-Appellant Apple Inc. to terminate cross/consolidated appeal. Response/Opposition is due 12/03/2015 [Consent: unopposed]. Service: 11/20/2015 by email. [290734] [Mark Perry]	
11/20/2015		TENDERED from Cross-Appellant Apple Inc.. Title: RESPONSE BRIEF. Service: 11/20/2015 by email. [290738] [Mark Perry]	
11/20/2015		BRIEF FILED for Appellee Apple Inc. . Number of Pages: 61. Service: 11/20/2015 by email. Pursuant to ECF-10, filer is directed to file six copies of the brief in paper format. The paper copies of the brief should be received by the court on or before 11/30/2015. Appellant Unwired Planet, LLC reply brief is due 12/07/2015. [291066] [SJ]	

Date	#	Proceeding Text	Details
11/23/2015		ORDER granting motion to terminate cross-appeal filed by Cross-Appellant Apple Inc.; issuing mandate in 15-1795. Service as of this date by Clerk of Court. [291040] [15-1725, 15-1795] [SJ]	
11/23/2015		Official caption revised to reflect dismissal of cross-appeal. The official caption is reflected on the electronic docket under the listing of the parties and counsel. Service as of this date by Clerk of Court. [291050] [SJ]	
11/24/2015		MOTION of Appellant Unwired Planet, LLC to extend the time to 01/06/2016 at 11:59 pm to file the reply brief. Response/Opposition is due 12/07/2015 [Consent: unopposed]. Service: 11/24/2015 by email. [291687] [Joel Thollander]	
11/25/2015		**TEXT ONLY** ORDER granting motion to extend time to file reply brief filed by Appellant Unwired Planet, LLC reply brief is due 01/06/2016.. Service as of this date by Clerk of Court. This order has been issued without an attached document and is official and binding. [291751] [JCA]	
11/25/2015		6 paper copies of the Opening Response Brief received from Appellee Apple Inc.. [291886] [MJL]	
01/06/2016		TENDERED from Appellant Unwired Planet, LLC. Title: CONFIDENTIAL REPLY BRIEF Service: 01/06/2016 by email. [300956] [Theodore Stevenson]	
01/06/2016		TENDERED from Appellant Unwired Planet, LLC. Title: REPLY BRIEF. Service: 01/06/2016 by email. [300957] [Theodore Stevenson]	
01/06/2016		CONFIDENTIAL REPLY BRIEF FILED for Appellant Unwired Planet, LLC [40]. Number of Pages: 37. Service: 01/06/2015 by email. Pursuant to ECF-10(B), six paper copies should be filed of the confidential version only. [301067] [NL]	
01/06/2016		REPLY BRIEF FILED for Appellant Unwired Planet, LLC . Number of Pages: 37. Service: 01/06/2015 by email. Pursuant to ECF-10, filer is directed to file six copies of the brief in paper format. The paper copies of the brief should be received by the court on or before 01/12/2016. Appendix is due 01/16/2015. [301068]. This brief has been replaced. See Doc No. [NL]	
01/11/2016		6 paper copies of the Confidential Reply Brief [42] received from Appellant Unwired Planet, LLC. [301559] [MJL]	
01/15/2016		Statement of Compliance with Fed. Cir. R. 33	

Date	#	Proceeding Text	Details
		for Appellant Unwired Planet, LLC. Service: 01/15/2016 by email. [303482] [John Campbell]	
01/15/2016		TENDERED from Appellant Unwired Planet, LLC. Title: JOINT APPENDIX. Service: 01/15/2016 by email. [303485] [John Campbell]	
01/15/2016		TENDERED from Appellant Unwired Planet, LLC. Title: CONFIDENTIAL JOINT APPENDIX Service: 01/15/2016 by email. [303486] [John Campbell]	
01/15/2016		CONFIDENTIAL JOINT APPENDIX FILED for Unwired Planet, LLC [47]. Number of Pages: 556. Service: 01/15/2016 by email. Pursuant to ECF-10 six paper copies should be filed of the confidential version only. [304551]. This appendix has been replaced. See Doc No.[64] [SJ]	
01/15/2016		APPENDIX FILED for Unwired Planet, LLC . Number of Pages: 319. Service: 01/15/2016 by email. Pursuant to ECF-10, filer is directed to file six copies of the brief in paper format. The paper copies of the brief should be received by the court on or before 01/25/2016. [304553]. This appendix has been replaced. See Doc No. [SJ]	
01/22/2016		6 paper copies of the Confidential Joint Appendix [48] received from Appellant Unwired Planet, LLC. [306298] [MJL]	
02/19/2016		NOTICE OF CALENDARING. Panel: 1604J. Case scheduled Apr 07, 2016 10:00 a.m. at the United States Court of Appeals for the Federal Circuit (Howard T. Markey National Courts Building, 717 Madison Place, N.W. Washington, DC 20439), Courtroom 201. Response to oral argument order due: 03/15/2016. Counsel should check-in 30 minutes prior to the opening of the session. Please review the Oral Argument Order. [312544] THIS NOTICE APPLIES TO CASE(S): [15-1422, 15-1720, 15-1725, 15-5130] [JAB]	
03/15/2016		Response to oral argument order from the Appellee Apple Inc.. designating Mark A. Perry as arguing attorney. Designated time for argument: 15 minutes. Designated time for rebuttal: 0 minutes. Service of other counsel by Notice of Docket Activity from this entry. [318698] [Mark Perry]	
03/15/2016		Response to oral argument order from the Appellant Unwired Planet, LLC. designating John B. Campbell as arguing attorney. Designated time for argument: 12 minutes. Designated time for rebuttal: 3 minutes. Service of other counsel by Notice of Docket	

Date	#	Proceeding Text	Details
		Activity from this entry. [318781] [John Campbell]	
03/24/2016		Citation of Supplemental Authority pursuant to Fed. R. App. P. 28(j) for Appellee Apple Inc.. Service: 03/24/2016 by email. [321469] [Mark Perry]	
03/24/2016		Notice of Correction to the Brief Doc No. , confidential Brief Doc No. [47] for Appellant Unwired Planet, LLC. Service: 03/24/2016 by email. [321605] [John Campbell]	
03/24/2016		TENDERED from Appellant Unwired Planet, LLC and Appellee Apple Inc.. Title: CORRECTED CONFIDENTIAL JOINT APPENDIX Service: 03/24/2016 by email. [321609] [John Campbell]	
03/24/2016		TENDERED from Appellant Unwired Planet, LLC and Appellee Apple Inc.. Title: CORRECTED JOINT APPENDIX. Service: 03/24/2016 by email. [321612] [John Campbell]	
03/24/2016		Notice of Correction to the Brief Doc No. , confidential Brief Doc No. [40], Brief Doc No. [23], confidential Brief Doc No. [22] for Appellant Unwired Planet, LLC. Service: 03/24/2016 by email. [321613] [John Campbell]	
03/24/2016		TENDERED from Appellant Unwired Planet, LLC. Title: CORRECTED OPENING BRIEF. Service: 03/24/2016 by email. [321614] [John Campbell]	
03/24/2016		TENDERED from Appellant Unwired Planet, LLC. Title: CORRECTED REPLY BRIEF. Service: 03/24/2016 by email. [321615] [John Campbell]	
03/24/2016		CORRECTED BRIEF FILED for Appellant Unwired Planet, LLC . Number of Pages: 61. Service: 03/24/2016 by email. Pursuant to ECF-10, filer is directed to file six copies of the brief in paper format. The paper copies of the brief should be received by the court on or before 03/30/2016. [321685] [JCA]	
03/24/2016		CORRECTED REPLY BRIEF FILED for Appellant Unwired Planet, LLC . Number of Pages: 30. Service: 03/24/2016 by email. Pursuant to ECF-10, filer is directed to file six copies of the brief in paper format. The paper copies of the brief should be received by the court on or before 03/30/2016. [321686] [JCA]	
03/24/2016		CORRECTED APPENDIX FILED for Unwired Planet, LLC . Number of Pages: 558. Service: 03/24/2016 by email. Pursuant to ECF-10, filer is directed to file six copies of the brief in paper format. The paper copies of	

Date	#	Proceeding Text	Details
		the brief should be received by the court on or before 03/30/2016. [321690] [JCA]	
03/24/2016		CORRECTED CONFIDENTIAL JOINT APPENDIX FILED for Unwired Planet, LLC [56]. Number of Pages: 558. Service: 03/24/2016 by email. Pursuant to ECF-10 six paper copies should be filed of the confidential version only. [321691] [JCA]	
03/29/2016		6 paper copies of the Opening Brief received from Appellant Unwired Planet, LLC. [322553] [LAJ]	
03/29/2016		6 paper copies of the Reply Brief received from Appellant Unwired Planet, LLC. [322556] [LAJ]	
03/30/2016		6 paper copies of the Corrected Confidential Joint Appendix [64] received from Appellant Unwired Planet, LLC. [323375] [MJL]	
04/04/2016		Entry of appearance for Kathy H. Li as of counsel for Appellant Unwired Planet, LLC. Service: 04/04/2016 by email. [323833] [Kat Li]	
04/07/2016		Submitted after ORAL ARGUMENT by Mr. John Bruce Campbell for Unwired Planet, LLC and Mr. Mark Andrew Perry for Apple Inc.. Panel: Judge: Moore , Judge: Bryson , Judge: Reyna. [324735] [LAJ]	
07/22/2016		OPINION and JUDGMENT filed. The judgment or decision is: Affirmed in Part, Vacated in Part, and Remanded. (Precedential Opinion). (For the Court: Moore,Circuit Judge; Bryson,Circuit Judge and Reyna,Circuit Judge). [352820] [SJ]	
07/27/2016		Amended Certificate of Interest for the Appellant Unwired Planet, LLC. Service: 07/27/2016 by email. [354070] [John Campbell]	
08/29/2016		Mandate issued to the United States District Court for the Northern District of California. Service as of this date by Clerk of Court. [362545] [SJ]	

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Job Number: 173888006

Document (1)

1. *1:22cv229, Videolabs, Inc. Et Al V. Netflix Inc.*
   Client/Matter: -None-
   Search Terms: 7233790 or 7,233,790
   Search Type: Terms and Connectors
   Narrowed by:

Content Type	Narrowed by
Dockets	-None-

1:22cv229, Videolabs, Inc. Et Al V. Netflix Inc.

US District Court Docket

United States District Court, Delaware

(Wilmington)

This case was retrieved on 06/23/2022

Header

Case Number: 1:22cv229
Date Filed: 02/23/2022
Assigned To: Judge Colm F. Connolly
Nature of Suit: Patent (830)
Cause: Patent Infringement
Lead Docket: None
Other Docket: 1:21cv01448, 1:22cv00680
Jurisdiction: Federal Question

Class Code: Open
Statute: 35:271
Jury Demand: Plaintiff
Demand Amount: $0
NOS Description: Patent

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VL Collective IP LLC **Plaintiff**	Michael J. Farnan LEAD ATTORNEY;ATTORNEY TO BE NOTICED Farnan LLP 919 North Market Street 12th Floor Wilmington, DE 19801 USA 302-777-0338 Fax: 302-421-5870 Email:Mfarnan@farnanlaw.Com Brian E. Farnan ATTORNEY TO BE NOTICED Farnan LLP 919 North Market Street 12th Floor

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Proceedings

#	Date	Proceeding Text	Source
1	02/23/2022	COMPLAINT filed with Jury Demand against Netflix Inc. - Magistrate Consent Notice to Pltf. (Filing fee $ 402, receipt number ADEDC-3809675.) - filed by VideoLabs, Inc., VL Collective IP LLC. (Attachments: # 1 Exhibit 1, # 2 Exhibit 2, # 3	

#	Date	Proceeding Text	Source
		Exhibit 3, # 4 Exhibit 4, # 5 Exhibit 5, # 6 Exhibit 6, # 7 Exhibit 7, # 8 Exhibit 8, # 9 Exhibit 9, # 10 Exhibit 10, # 11 Exhibit 11, # 12 Exhibit 12, # 13 Exhibit 13, # 14 Exhibit 14, # 15 Exhibit 15, # 16 Exhibit 16, # 17 Exhibit 17, # 18 Exhibit 18, # 19 Exhibit 19, # 20 Exhibit 20, # 21 Exhibit 21, # 22 Exhibit 22, # 23 Exhibit 23, # 24 Exhibit 24, # 25 Exhibit 25, # 26 Exhibit 26, # 27 Exhibit 27, # 28 Exhibit 28, # 29 Exhibit 29, # 30 Exhibit 30, # 31 Exhibit 31, # 32 Exhibit 32, # 33 Exhibit 33, # 34 Exhibit 34, # 35 Exhibit 35, # 36 Exhibit 36, # 37 Exhibit 37, # 38 Exhibit 38, # 39 Exhibit 39, # 40 Exhibit 40, # 41 Exhibit 41, # 42 Exhibit 42, # 43 Exhibit 43, # 44 Exhibit 44, # 45 Exhibit 45, # 46 Exhibit 46, # 47 Exhibit 47, # 48 Exhibit 48, # 49 Exhibit 49, # 50 Exhibit 50, # 51 Exhibit 51, # 52 Exhibit 52, # 53 Exhibit 53, # 54 Exhibit 54, # 55 Exhibit 55, # 56 Exhibit 56, # 57 Exhibit 57, # 58 Exhibit 58, # 59 Exhibit 59, # 60 Exhibit 60, # 61 Exhibit 61, # 62 Exhibit 62, # 63 Exhibit 63, # 64 Exhibit 64, # 65 Civil Cover Sheet)(twk) (Entered: 02/24/2022)	
2	02/23/2022	Notice, Consent and Referral forms re: U.S. Magistrate Judge jurisdiction. (twk) (Entered: 02/24/2022)	
3	02/23/2022	Report to the Commissioner of Patents and Trademarks for Patent/Trademark Number(s) US 8,139,878 B2; US 7,440,559 B2; US 7,233,790 B2. (twk) (Entered: 02/24/2022)	
4	02/23/2022	Summons Issued with Magistrate Consent Notice attached as to Netflix Inc. on 2/24/2022. (twk) (Entered: 02/24/2022)	
5	02/24/2022	SUMMONS Returned Executed by VideoLabs, Inc., VL Collective IP LLC. Netflix Inc. served on 2/24/2022, answer due 3/17/2022. (Farnan, Michael) (Entered: 02/24/2022)	
6	03/01/2022	Disclosure Statement pursuant to Rule 7.1; Identifying Corporate Parent VL IP Holdings LLC for VL Collective IP LLC filed by VL Collective IP LLC, VideoLabs, Inc.. (Farnan, Michael) (Entered: 03/01/2022)	
	03/02/2022	Case Assigned to Judge Colm F. Connolly. Please include the initials of the Judge (CFC) after the case number on all documents filed. (rjb) (Entered: 03/02/2022)	
7	03/15/2022	STIPULATION TO EXTEND TIME for Defendant Netflix Inc. to move, answer, or otherwise respond to Plaintiffs VideoLabs, Inc. and VL Collective IP LLC's Complaint (D.I. 1) to April 18, 2022 - filed by Netflix Inc.. (Ying, Jennifer) (Entered: 03/15/2022)	
	03/15/2022	SO ORDERED, re 7 STIPULATION TO EXTEND TIME for Defendant Netflix Inc. to move, answer, or otherwise respond to Plaintiffs VideoLabs, Inc. and VL Collective IP LLC's Complaint (D.I. 1) to April 18, 2022, filed by Netflix Inc. Reset Answer Deadlines: Netflix Inc. answer due 4/18/2022. Ordered by Judge Colm F. Connolly on 3/15/2022. (kmd) (Entered: 03/15/2022)	
8	04/07/2022	STIPULATION TO EXTEND TIME for Defendant Netflix Inc. to move, answer, or otherwise respond to Plaintiffs VideoLabs, Inc. and VL Collective IP LLC's Complaint (D.I. 1) to April 29, 2022 - filed by Netflix Inc.. (Ying, Jennifer) (Entered: 04/07/2022)	
	04/07/2022	SO ORDERED, re 8 STIPULATION TO EXTEND TIME for Defendant Netflix Inc. to move, answer, or otherwise respond to Plaintiffs VideoLabs, Inc. and VL Collective IP LLC's Complaint (D.I. 1) to April 29, 2022, filed by Netflix Inc.Reset Answer Deadlines: Netflix Inc. answer due 4/29/2022. Ordered by Judge Colm F. Connolly on 4/7/2022. (kmd) (Entered: 04/07/2022)	
9	04/22/2022	MOTION for Pro Hac Vice Appearance of Attorney Courtland L. Reichman, Christine E. Lehman, Wesley L. White, Jaime F.Cardenas-Navia, and Taylor Mauze - filed by VL Collective IP LLC, VideoLabs, Inc.. (Farnan, Brian) (Entered: 04/22/2022)	
	04/22/2022	SO ORDERED, re 9 MOTION for Pro Hac Vice Appearance of Attorney Courtland L. Reichman, Christine E. Lehman, Wesley L.	

#	Date	Proceeding Text	Source
		White, Jaime F.Cardenas-Navia, and Taylor Mauze, filed by VL Collective IP LLC, VideoLabs, Inc. Ordered by Judge Colm F. Connolly on 4/22/2022. (kmd) (Entered: 04/22/2022)	
	04/22/2022	Pro Hac Vice Attorney Jaime F Cardenas-Navia, Christine E. Lehman, Taylor Mauze, and Wesley L. White for VL Collective IP LLC added for electronic noticing. Pursuant to Local Rule 83.5 (d)., Delaware counsel shall be the registered users of CM/ECF and shall be required to file all papers. (mpb) (Entered: 04/22/2022)	
10	04/29/2022	STIPULATION TO EXTEND TIME for Defendant Netflix Inc. to move, answer, or otherwise respond to the Complaint, including any amended complaint filed by 5/6/2022 to 6/10/2022 - filed by VL Collective IP LLC, VideoLabs, Inc.. (Farnan, Michael) (Entered: 04/29/2022)	
	04/29/2022	SO ORDERED, re 10 STIPULATION TO EXTEND TIME for Defendant Netflix Inc. to move, answer, or otherwise respond to the Complaint, including any amended complaint filed by 5/6/2022 to 6/10/2022. filed by VL Collective IP LLC, VideoLabs, Inc. Reset Answer Deadlines: Netflix Inc. answer due 6/10/2022. Ordered by Judge Colm F. Connolly on 4/29/2022. (kmd) (Entered: 04/29/2022)	
11	05/06/2022	First AMENDED COMPLAINT against Netflix Inc.- filed by VideoLabs, Inc., VL Collective IP LLC. (Attachments: # 1 Exhibit 1, # 2 Exhibit 2, # 3 Exhibit 3, # 4 Exhibit 4, # 5 Exhibit 5, # 6 Exhibit 6, # 7 Exhibit 7, # 8 Exhibit 8, # 9 Exhibit 9, # 10 Exhibit 10, # 11 Exhibit 11, # 12 Exhibit 12, # 13 Exhibit 13, # 14 Exhibit 14, # 15 Exhibit 15, # 16 Exhibit 16, # 17 Exhibit 17, # 18 Exhibit 18, # 19 Exhibit 19, # 20 Exhibit 20, # 21 Exhibit 21, # 22 Exhibit 22, # 23 Exhibit 23, # 24 Exhibit 24, # 25 Exhibit 25, # 26 Exhibit 26, # 27 Exhibit 27, # 28 Exhibit 28, # 29 Exhibit 29, # 30 Exhibit 30, # 31 Exhibit 31, # 32 Exhibit 32, # 33 Exhibit 33, # 34 Exhibit 34, # 35 Exhibit 35, # 36 Exhibit 36, # 37 Exhibit 37, # 38 Exhibit 38, # 39 Exhibit 39, # 40 Exhibit 40, # 41 Exhibit 41, # 42 Exhibit 42, # 43 Exhibit 43, # 44 Exhibit 44, # 45 Exhibit 45, # 46 Exhibit 46, # 47 Exhibit 47, # 48 Exhibit 48, # 49 Exhibit 49, # 50 Exhibit 50, # 51 Exhibit 51, # 52 Exhibit 52, # 53 Exhibit 53, # 54 Exhibit 54, # 55 Exhibit 55, # 56 Exhibit 56, # 57 Exhibit 57, # 58 Exhibit 58, # 59 Exhibit 59, # 60 Exhibit 60, # 61 Exhibit 61, # 62 Exhibit 62, # 63 Exhibit 63, # 64 Exhibit 64, # 65 Exhibit 65, # 66 Exhibit 66, # 67 Exhibit 67, # 68 Exhibit 68, # 69 Exhibit 69, # 70 Exhibit 70, # 71 Exhibit 71, # 72 Exhibit 72, # 73 Exhibit 73, # 74 Exhibit 74, # 75 Exhibit 75, # 76 Exhibit 76, # 77 Exhibit 77, # 78 Exhibit 78, # 79 Exhibit 79, # 80 Exhibit 80, # 81 Exhibit 81, # 82 Exhibit 82, # 83 Exhibit 83, # 84 Exhibit 84, # 85 Exhibit 85)(Farnan, Michael) (Entered: 05/06/2022)	
12	05/06/2022	Report to the Commissioner of Patents and Trademarks for Patent/Trademark Number(s) US 8,139,878 B2 ;US 7,440,559 B2 ;US 7,233,790 B2 ;US 8,605,794 B2 . (Farnan, Michael) (Entered: 05/06/2022)	
13	06/03/2022	MOTION for Pro Hac Vice Appearance of Attorney Michael Matulewicz-Crowley - filed by VL Collective IP LLC, VideoLabs, Inc.. (Farnan, Brian) (Entered: 06/03/2022)	
	06/03/2022	SO ORDERED, re 13 MOTION for Pro Hac Vice Appearance of Attorney Michael Matulewicz-Crowley, filed by VL Collective IP LLC, VideoLabs, Inc. Ordered by Judge Colm F. Connolly on 6/3/2022. (kmd) (Entered: 06/03/2022)	
	06/07/2022	Pro Hac Vice Attorney Michael J.X. Matulewicz-Crowley for VL Collective IP LLC added for electronic noticing. Pursuant to Local Rule 83.5 (d)., Delaware counsel shall be the registered users of	

#	Date	Proceeding Text	Source
		CM/ECF and shall be required to file all papers. (mpb) (Entered: 06/07/2022)	
14	06/07/2022	MOTION for Pro Hac Vice Appearance of Attorney Indranil Mukerji, Stephen A. Marshall, Linda Chang, Christopher Hong and Gabrielle K. Antonello - filed by Netflix Inc.. (Ying, Jennifer) (Entered: 06/07/2022)	
	06/08/2022	SO ORDERED, re 14 MOTION for Pro Hac Vice Appearance of Attorney Indranil Mukerji, Stephen A. Marshall, Linda Chang, Christopher Hong and Gabrielle K. Antonello, filed by Netflix Inc. Ordered by Judge Colm F. Connolly on 6/8/2022. (kmd) (Entered: 06/08/2022)	
15	06/10/2022	MOTION to Dismiss for Failure to State a Claim - filed by Netflix Inc.. (Ying, Jennifer) (Entered: 06/10/2022)	
16	06/10/2022	OPENING BRIEF in Support re 15 MOTION to Dismiss for Failure to State a Claim filed by Netflix Inc..Answering Brief/Response due date per Local Rules is 6/24/2022. (Ying, Jennifer) (Entered: 06/10/2022)	
17	06/10/2022	Disclosure Statement pursuant to Rule 7.1: No Parents or Affiliates Listed filed by Netflix Inc.. (Ying, Jennifer) (Entered: 06/10/2022)	

Patents

Number	Title	Issued	Class	Subclass
8,139,878	Picture coding method and picture decoding method	03/20/2012	382	238

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User Name: Renee Preston
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Job Number: 173888108

Document (1)

1. *3:12cv505 Unwired Planet, Llc V. Apple, Inc.*
   Client/Matter: -None-
   Search Terms: 7233790 or 7,233,790
   Search Type: Terms and Connectors
   Narrowed by:

Content Type	Narrowed by
Dockets	-None-

3:12cv505, Unwired Planet, Llc V. Apple, Inc.

US District Court Docket

United States District Court, Nevada

(Reno)

This case was retrieved on 06/23/2022

Header

Case Number: 3:12cv505
Date Filed: 09/19/2012
Assigned To: Chief Judge Robert C. Jones
Referred To: Magistrate Judge Valerie P. Cooke
Nature of Suit: Patent (830)
Cause: Patent Infringement
Lead Docket: None
Other Docket: None
Jurisdiction: Federal Question

Class Code: Closed
Closed: 08/30/2013
Statute: 15:1126
Jury Demand: Both
Demand Amount: $0
NOS Description: Patent

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Proceedings

#	Date	Proceeding Text	Source
1	09/19/2012	COMPLAINT against Apple, Inc. (Filing fee $ 350 receipt number 0978-2527930), filed by Unwired Planet, LLC. Certificate of Interested Parties due by 9/29/2012. Proof of service due by 1/17/2013. (Attachments: # 1 Exhibit A, # 2 Exhibit B, # 3 Exhibit C, # 4 Exhibit D, # 5 Exhibit E, # 6 Exhibit F, # 7 Exhibit G, # 8 Exhibit H, # 9 Exhibit I, # 10 Exhibit J, # 11 Civil Cover Sheet, # 12 Summons) (Rounds, Michael) Modified on 9/20/2012 to reflect that Summons was issued on 9/20/2012 (HJ). (Entered: 09/19/2012)	
2	09/20/2012	NOTICE TO COUNSEL PURSUANT TO LOCAL RULE IA 10-2. Counsel Theodore Stevenson III to comply with completion and electronic filing of the Designation of Local Counsel and Verified Petition. For your convenience, click on the following link to obtain the form from the Court's website - www.nvd.uscourts.gov/Forms.aspx. Counsel is also required to register for the Court's Case Management and Electronic Case Filing (CM/ECF) system and the electronic service of pleadings. Please visit the Court's website www.nvd.uscourts.gov to register Attorney(s). Verified Petition due by 11/4/2012.(no image attached) (WJ) (Entered: 09/20/2012)	
3	09/20/2012	NOTICE TO COUNSEL PURSUANT TO LOCAL RULE IA 10-2. Counsel Kevin Burgess to comply with completion and electronic filing of the Designation of Local Counsel and Verified Petition. For your convenience, click on the following link to obtain the form from the Court's website - www.nvd.uscourts.gov/Forms.aspx. Counsel is also required to register for the Court's Case	

#	Date	Proceeding Text	Source
		Management and Electronic Case Filing (CM/ECF) system and the electronic service of pleadings. Please visit the Court's website www.nvd.uscourts.gov to register Attorney(s). Verified Petition due by 11/4/2012.(no image attached) (WJ) (Entered: 09/20/2012)	
4	09/20/2012	NOTICE TO COUNSEL PURSUANT TO LOCAL RULE IA 10-2. Counsel Pierre Hubert to comply with completion and electronic filing of the Designation of Local Counsel and Verified Petition. For your convenience, click on the following link to obtain the form from the Court's website - www.nvd.uscourts.gov/Forms.aspx. Counsel is also required to register for the Court's Case Management and Electronic Case Filing (CM/ECF) system and the electronic service of pleadings. Please visit the Court's website www.nvd.uscourts.gov to register Attorney(s). Verified Petition due by 11/4/2012.(no image attached) (WJ) (Entered: 09/20/2012)	
	09/20/2012	Case assigned to Chief Judge Robert C. Jones and Magistrate Judge Valerie P. Cooke. Nature of Suit: 830 Patent Case (WJ) (Entered: 09/20/2012)	
5	09/20/2012	AO 120 - REPORT on the filing or determination of an action regarding a patent or trademark. E-mailed to the US Patent and Trademark Office. (Attachments: # 1 Complaint) (HJ) (Entered: 09/20/2012)	
6	09/20/2012	SUMMONS ISSUED as to Apple, Inc. re 1 Complaint. (HJ) (Entered: 09/20/2012)	
7	09/28/2012	CERTIFICATE of Interested Parties filed by Unwired Planet, LLC that identifies all parties that have an interest in the outcome of this case. Corporate Parent Unwired Planet, Inc., Corporate Parent Unwired Planet IP Holdings, Inc. for Unwired Planet, LLC added.. (Yowell, Adam) (Entered: 09/28/2012)	
8	10/12/2012	SUMMONS Returned Executed by Unwired Planet, LLC. Unwired Planet, LLC served on 10/9/2012, answer due 10/30/2012. (Rounds, Michael) (Entered: 10/12/2012)	
9	10/23/2012	STIPULATION FOR EXTENSION OF TIME (First Request) by Defendant Apple, Inc.. (Fountain, Jonathan) (Entered: 10/23/2012)	
10	10/24/2012	ORDER ON STIPULATION re 9 Stipulation to Extend Time to Answer, Move, or Otherwise Respond to Complaint. Apple, Inc. answer due 11/29/2012. Signed by Magistrate Judge Valerie P. Cooke on 10/24/12. (Copies have been distributed pursuant to the NEF - JC) (Entered: 10/24/2012)	
11	10/29/2012	VERIFIED PETITION for Permission to Practice Pro Hac Vice by Theodore Stevenson, III and DESIGNATION of Local Counsel Michael D. Rounds (Filing fee $ 200 receipt number 0978-2578210) filed by Plaintiff Unwired Planet, LLC. Motion ripe 10/29/2012. (Rounds, Michael) (Entered: 10/29/2012)	
12	10/29/2012	VERIFIED PETITION for Permission to Practice Pro Hac Vice by Pierre Hubert and DESIGNATION of Local Counsel Michael D. Rounds (Filing fee $ 200 receipt number 0978-2578224) filed by Plaintiff Unwired Planet, LLC. Motion ripe 10/29/2012. (Rounds, Michael) (Entered: 10/29/2012)	
13	10/29/2012	VERIFIED PETITION for Permission to Practice Pro Hac Vice by Kevin Burgess and DESIGNATION of Local Counsel Michael D. Rounds (Filing fee $ 200 receipt number 0978-2578233) filed by Plaintiff Unwired Planet, LLC. Motion ripe 10/29/2012. (Rounds, Michael) (Entered: 10/29/2012)	
14	11/01/2012	ORDER APPROVING 11 Verified Petition for Permission to Practice Pro Hac Vice for Theodore Stevenson, III, and approving Designation of Local Counsel Michael Rounds. Signed by Chief Judge Robert C. Jones on 11/1/12. Any Attorney not yet registered with the Court's CM/ECF System shall submit a Registration Form on the Court's website www.nvd.uscourts.gov	

#	Date	Proceeding Text	Source
		(Copies have been distributed pursuant to the NEF - JC) (Entered: 11/02/2012)	
15	11/01/2012	ORDER APPROVING 12 Verified Petition for Permission to Practice Pro Hac Vice for Pierre J. Hubert and approving Designation of Local Counsel Michael Rounds. Signed by Chief Judge Robert C. Jones on 11/1/12. Any Attorney not yet registered with the Court's CM/ECF System shall submit a Registration Form on the Court's website www.nvd.uscourts.gov (Copies have been distributed pursuant to the NEF - JC) (Entered: 11/02/2012)	
16	11/01/2012	ORDER APPROVING 13 Verified Petition for Permission to Practice Pro Hac Vice for Kevin L. Burgess and approving Designation of Local Counsel Michael Rounds. Signed by Chief Judge Robert C. Jones on 11/1/12. Any Attorney not yet registered with the Court's CM/ECF System shall submit a Registration Form on the Court's website www.nvd.uscourts.gov (Copies have been distributed pursuant to the NEF - JC) (Entered: 11/02/2012)	
17	11/15/2012	VERIFIED PETITION for Permission to Practice Pro Hac Vice by H. Mark Lyon and DESIGNATION of Local Counsel Jonathan W. Fountain (Filing fee $ 200 receipt number 0978-2604080) by Defendant Apple, Inc.. Motion ripe 11/15/2012. (Fountain, Jonathan) (Entered: 11/15/2012)	
18	11/15/2012	VERIFIED PETITION for Permission to Practice Pro Hac Vice by Stuart M. Rosenberg and DESIGNATION of Local Counsel Jonathan W. Fountain (Filing fee $ 200 receipt number 0978-2604116) by Defendant Apple, Inc.. Motion ripe 11/15/2012. (Fountain, Jonathan) (Entered: 11/15/2012)	
19	11/15/2012	VERIFIED PETITION for Permission to Practice Pro Hac Vice by Y. Ernest Hsin and DESIGNATION of Local Counsel Jonathan W. Fountain (Filing fee $ 200 receipt number 0978-2604127) by Defendant Apple, Inc.. Motion ripe 11/15/2012. (Fountain, Jonathan) (Entered: 11/15/2012)	
20	11/15/2012	VERIFIED PETITION for Permission to Practice Pro Hac Vice by Brooke Wallace and DESIGNATION of Local Counsel Jonathan W. Fountain (Filing fee $ 200 receipt number 0978-2604135) by Defendant Apple, Inc.. Motion ripe 11/15/2012. (Fountain, Jonathan) (Entered: 11/15/2012)	
21	11/15/2012	VERIFIED PETITION for Permission to Practice Pro Hac Vice by Etai Lahav and DESIGNATION of Local Counsel Jonathan W. Fountain (Filing fee $ 200 receipt number 0978-2604141) by Defendant Apple, Inc.. Motion ripe 11/15/2012. (Fountain, Jonathan) (Entered: 11/15/2012)	
22	11/15/2012	VERIFIED PETITION for Permission to Practice Pro Hac Vice by Josh A. Krevitt and DESIGNATION of Local Counsel Jonathan W. Fountain (Filing fee $ 200 receipt number 0978-2604155) by Defendant Apple, Inc.. Motion ripe 11/15/2012. (Fountain, Jonathan) (Entered: 11/15/2012)	
23	11/28/2012	ORDER APPROVING 17 Verified Petition for Permission to Practice Pro Hac Vice for Mark Lyon and approving Designation of Local Counsel Jonathan Fountain. Signed by Chief Judge Robert C. Jones on 11/28/12. Any Attorney not yet registered with the Court's CM/ECF System shall submit a Registration Form on the Court's website www.nvd.uscourts.gov (Copies have been distributed pursuant to the NEF - JC) (Entered: 11/29/2012)	
24	11/28/2012	ORDER APPROVING 18 Verified Petition for Permission to Practice Pro Hac Vice for Stuart Rosenberg and approving Designation of Local Counsel Jonathan Fountain. Signed by Chief Judge Robert C. Jones on 11/28/12. Any Attorney not yet	

#	Date	Proceeding Text	Source
		registered with the Court's CM/ECF System shall submit a Registration Form on the Court's website www.nvd.uscourts.gov (Copies have been distributed pursuant to the NEF - JC) (Entered: 11/29/2012)	
25	11/28/2012	ORDER APPROVING 19 Verified Petition for Permission to Practice Pro Hac Vice for Y. Ernest Hsin and approving Designation of Local Counsel Jonathan Fountain. Signed by Chief Judge Robert C. Jones on 11/28/12. Any Attorney not yet registered with the Court's CM/ECF System shall submit a Registration Form on the Court's website www.nvd.uscourts.gov (Copies have been distributed pursuant to the NEF - JC) (Entered: 11/29/2012)	
26	11/28/2012	ORDER APPROVING 21 Verified Petition for Permission to Practice Pro Hac Vice for Etai Lahav and approving Designation of Local Counsel Jonathan Fountain. Signed by Chief Judge Robert C. Jones on 11/28/12. Any Attorney not yet registered with the Court's CM/ECF System shall submit a Registration Form on the Court's website www.nvd.uscourts.gov (Copies have been distributed pursuant to the NEF - JC) (Entered: 11/29/2012)	
27	11/28/2012	ORDER APPROVING 22 Verified Petition for Permission to Practice Pro Hac Vice for Josh Krevitt and approving Designation of Local Counsel Jonathan Fountain. Signed by Chief Judge Robert C. Jones on 11/28/12. Any Attorney not yet registered with the Court's CM/ECF System shall submit a Registration Form on the Court's website www.nvd.uscourts.gov (Copies have been distributed pursuant to the NEF - JC) (Entered: 11/29/2012)	
28	11/28/2012	ORDER APPROVING 20 Verified Petition for Permission to Practice Pro Hac Vice for Brooke Wallace and approving Designation of Local Counsel Jonathan Fountain. Signed by Chief Judge Robert C. Jones on 11/28/12. Any Attorney not yet registered with the Court's CM/ECF System shall submit a Registration Form on the Court's website www.nvd.uscourts.gov (Copies have been distributed pursuant to the NEF - JC) (Entered: 11/29/2012)	
29	11/29/2012	ANSWER to 1 Complaint,, with Jury Demand (Certificate of Interested Parties due by 12/9/2012., Discovery Plan/Scheduling Order due by 1/13/2013.), COUNTERCLAIM against Unwired Planet, LLC filed by Apple, Inc.. (Attachments: # 1 Exhibit 1, # 2 Exhibit 2, # 3 Exhibit 3, # 4 Exhibit 4, # 5 Exhibit 5, # 6 Exhibit 6, # 7 Exhibit 7, # 8 Exhibit 8, # 9 Exhibit 9, # 10 Exhibit 10, # 11 Exhibit 11, # 12 Exhibit 12, # 13 Exhibit 13, # 14 Exhibit 14, # 15 Exhibit 15, # 16 Exhibit 16, # 17 Exhibit 17, # 18 Exhibit 18)(Fountain, Jonathan) (Entered: 11/29/2012)	
30	11/30/2012	NOTICE PURSUANT TO LOCAL RULE IB 2-2: In accordance with 28 USC § 636(c) and FRCP 73, the parties in this action are provided with a link to the "AO 85 Notice of Availability, Consent, and Order of Reference - Exercise of Jurisdiction by a U.S. Magistrate Judge" form on the Court's website - www.nvd.uscourts.gov. Consent forms should NOT be electronically filed. Upon consent of all parties, counsel are advised to manually file the form with the Clerk's Office. A copy of form AO 85 has been mailed to parties not receiving electronic service. (no image attached) (DRM) (Entered: 11/30/2012)	
31	12/10/2012	CERTIFICATE of Interested Parties filed by Apple, Inc.. There are no known interested parties other than those participating in the case. (Fountain, Jonathan) (Entered: 12/10/2012)	
32	12/21/2012	Plaintiff's ANSWER to 29 Answer to Complaint,,, Counterclaim., with Certificate of Service filed by Unwired Planet, LLC.(Rounds, Michael) (Entered: 12/21/2012)	

#	Date	Proceeding Text	Source
33	01/11/2013	PROPOSED Discovery Plan/Scheduling Order filed by Counter Defendant Unwired Planet, LLC, Plaintiff Unwired Planet, LLC Special Scheduling Review Requested. (Rounds, Michael) (Entered: 01/11/2013)	
34	01/17/2013	MINUTE ORDER IN CHAMBERS of the Honorable Magistrate Judge Valerie P. Cooke, on 1/17/2013. By Deputy Clerk: LGM. A Case Management Conference is set for 2/4/2013 at 11:00 AM in Reno Courtroom 1 before Magistrate Judge Valerie P. Cooke. Out-of-town and out-of-state counsel shall be allowed to appear telephonically for this hearing and shall advise Lisa Mann at (775)686-5653 at least two (2) days prior of the telephone number at which counsel can be reached for the conference. The parties shall jointly file a case management report by no later than the close of business on Thursday, January 24, 2013. See the attached order for specifications. (Copies have been distributed pursuant to the NEF - LGM) (Entered: 01/17/2013)	
35	01/24/2013	Joint STATUS REPORT CASE MANAGEMENT REPORT by Counter Defendant Unwired Planet, LLC, Plaintiff Unwired Planet, LLC. (Rounds, Michael) (Entered: 01/24/2013)	
36	01/31/2013	MINUTE ORDER IN CHAMBERS of the Honorable Magistrate Judge Valerie P. Cooke, on 1/31/2013. By Deputy Clerk: LGM. Out-of-town and out-of-state counsel appearing telephonically for the case management conference set before this Court on Monday, February 4, 2013 at 11:00 AM shall dial 877-336-1829 at least five (5) minutes prior to the hearing to be properly connected into the courtroom. The Access Code is 2809752 and the Security Code is 125050204. IT IS SO ORDERED. (no image attached) (Copies have been distributed pursuant to the NEF - LGM) (Entered: 01/31/2013)	
37	02/01/2013	MOTION to Transfer by Counter Claimant Apple, Inc., Defendant Apple, Inc.. Responses due by 2/18/2013. (Attachments: # 1 Declaration Mark Buckley, # 2 Declaration Danielle Durkee, # 3 Declaration Brooke Wallace, # 4 Exhibit 1 (Part 1 of 4), # 5 Exhibit 1 (Part 2 of 4), # 6 Exhibit 1 (Part 3 of 4), # 7 Exhibit 1 (Part 4 of 4), # 8 Exhibit 2, # 9 Exhibit 3, # 10 Exhibit 4, # 11 Exhibit 5, # 12 Exhibit 6, # 13 Exhibit 7, # 14 Exhibit 8, # 15 Exhibit 9, # 16 Exhibit 10, # 17 Exhibit 11, # 18 Exhibit 12, # 19 Exhibit 13, # 20 Exhibit 14, # 21 Exhibit 15, # 22 Exhibit 16, # 23 Exhibit 17, # 24 Exhibit 18, # 25 Exhibit 19)(Fountain, Jonathan) (Entered: 02/01/2013)	
38	02/04/2013	SCHEDULING ORDER Minute Order in Chambers of Magistrate Judge Valerie P. Cooke on 2/4/13. Discovery due: 10/7/2013 Please see attached for other deadlines and details. (Copies have been distributed pursuant to the NEF - JC) (Entered: 02/05/2013)	
39	02/04/2013	MINUTES OF PROCEEDINGS - Case Management Conference held on 2/4/2013 before Magistrate Judge Valerie P. Cooke. Crtrm Administrator: LGM; Pla Counsel: Adam Yowell and (By telephone) Michael Rounds, Pierre Hubert and John Shoemaker; Def Counsel: Ernest Hsin, Leif Reid, and Johnathan Fountain; Court Reporter/FTR #: 11:05:44 - 11:23:56; Time of Hearing: 11:05 a.m.; Courtroom: 1; The Court recites the agreement of parties regarding certain protocol and procedures they intend to abide by as they proceed with litigation in this action. The first pre-claim settlement conference is set for Friday, July 12, 2013 at 9:00 AM. Monthly Case Management Conferences are scheduled as follows: 3/15/2013 at 10:00 AM, 4/11/2013 at 09:00 AM, 5/10/2013 at 10:00 AM, 6/10/2013 at 09:00 AM, 7/11/2013 at 10:00 AM, and 8/9/2013 at 09:00 AM all in Reno Courtroom 1 before Magistrate Judge Valerie P. Cooke. Counsel shall file a joint or separate case management report by no later than the close of business three	

#	Date	Proceeding Text	Source
		(3) court days prior to each conference. See the attached order for specifications. (Copies have been distributed pursuant to the NEF - LGM) (Entered: 02/06/2013)	
40	02/11/2013	TRANSCRIPT of Proceedings, 39 Miscellaneous Hearing, held on 2/4/13, before Magistrate Judge Valerie P. Cooke. Court Reporter/Transcriber: Donna Davidson, 775-329-0132. Transcript may be viewed at the court public terminal or purchased through the Court Reporter/Transcriber using the court's "Transcript Order" form available on our website www.nvd.uscourts.gov before the deadline for Release of Transcript Restriction. After that date it may be obtained through PACER Redaction Request due 3/4/2013. Redacted Transcript Deadline set for 3/14/2013. Release of Transcript Restriction set for 5/12/2013. (DD) (Entered: 02/11/2013)	
41	02/14/2013	STIPULATION FOR EXTENSION OF TIME (First Request) re 37 MOTION to Transfer ; TO FILE AND SERVE OPPOSITION TO APPLE INC.'S MOTION TO TRANSFER by Counter Defendant Unwired Planet, LLC, Plaintiff Unwired Planet, LLC. (Rounds, Michael) (Entered: 02/14/2013)	
42	02/14/2013	STIPULATION FOR EXTENSION OF TIME (First Request) FOR SERVING ASSERTED CLAIMS AND INFRINGEMENT CONTENTIONS by Counter Defendant Unwired Planet, LLC, Plaintiff Unwired Planet, LLC. (Rounds, Michael) (Entered: 02/14/2013)	
43	02/19/2013	MINUTE ORDER IN CHAMBERS of the Honorable Magistrate Judge Valerie P. Cooke, on 2/19/2013. By Deputy Clerk: LGM. In light of a conflict with the Court's calendar, the case management conference currently set for 3/15/2013 at 10:00 AM is VACATED and ADVANCED to 3/11/2013 at 09:00 AM in Reno Courtroom 1 before Magistrate Judge Valerie P. Cooke. Counsel shall file a joint or separate case management report by no later than the close of business on Wednesday, March 6, 2013. IT IS SO ORDERED. (no image attached) (Copies have been distributed pursuant to the NEF - LGM) (Entered: 02/19/2013)	
44	02/19/2013	VERIFIED PETITION for Permission to Practice Pro Hac Vice by John Shumaker and DESIGNATION of Local Counsel Michael D. Rounds (Filing fee $ 200 receipt number 0978-2710416) filed by Counter Defendant Unwired Planet, LLC, Plaintiff Unwired Planet, LLC. Motion ripe 2/19/2013. (Rounds, Michael) (Entered: 02/19/2013)	
45	02/19/2013	VERIFIED PETITION for Permission to Practice Pro Hac Vice by James E. Quigley and DESIGNATION of Local Counsel Michael D. Rounds (Filing fee $ 200 receipt number 0978-2710423) filed by Counter Defendant Unwired Planet, LLC, Plaintiff Unwired Planet, LLC. Motion ripe 2/19/2013. (Rounds, Michael) (Entered: 02/19/2013)	
46	02/19/2013	VERIFIED PETITION for Permission to Practice Pro Hac Vice by Mieke Malmberg and DESIGNATION of Local Counsel Michael D. Rounds (Filing fee $ 200 receipt number 0978-2710432) filed by Counter Defendant Unwired Planet, LLC, Plaintiff Unwired Planet, LLC. Motion ripe 2/19/2013. (Rounds, Michael) (Entered: 02/19/2013)	
47	02/19/2013	VERIFIED PETITION for Permission to Practice Pro Hac Vice by John F. Garvish and DESIGNATION of Local Counsel Michael D. Rounds (Filing fee $ 200 receipt number 0978-2710438) filed by Counter Defendant Unwired Planet, LLC, Plaintiff Unwired Planet, LLC. Motion ripe 2/19/2013. (Rounds, Michael) (Entered: 02/19/2013)	
48	02/19/2013	VERIFIED PETITION for Permission to Practice Pro Hac Vice by	

#	Date	Proceeding Text	Source
		Mario A. Apreotesi and DESIGNATION of Local Counsel Michael D. Rounds (Filing fee $ 200 receipt number 0978-2710440) filed by Counter Defendant Unwired Planet, LLC, Plaintiff Unwired Planet, LLC. Motion ripe 2/19/2013. (Rounds, Michael) (Entered: 02/19/2013)	
49	02/20/2013	VERIFIED PETITION for Permission to Practice Pro Hac Vice by Ryan James Cudnik and DESIGNATION of Local Counsel Michael D. Rounds (Filing fee $ 200 receipt number 0978-2711052) filed by Counter Defendant Unwired Planet, LLC, Plaintiff Unwired Planet, LLC. Motion ripe 2/20/2013. (Rounds, Michael) (Entered: 02/20/2013)	
50	02/21/2013	ORDER on Stipulation 41 re 37 MOTION to Transfer filed by Apple, Inc., (Responses due by 3/6/2013.) Signed by Chief Judge Robert C. Jones on 02/21/13. (Copies have been distributed pursuant to the NEF - LG) (Entered: 02/21/2013)	
51	02/21/2013	ORDER ON STIPULATION re 42 Stipulation, GRANTING extention of time for serving asserted claims and infringement contentions. Signed by Chief Judge Robert C. Jones on 02/21/13. (Copies have been distributed pursuant to the NEF - LG) (Entered: 02/21/2013)	
52	02/21/2013	ORDER granting 44 Verified Petition for Permission to Practice Pro Hac Vice for Attorney John Shumaker for Unwired Planet, LLC and approving Designation of Local Counsel. Signed by Chief Judge Robert C. Jones on 02/21/13. Any Attorney not yet registered with the Court's CM/ECF System shall submit a Registration Form on the Court's website www.nvd.uscourts.gov (Copies have been distributed pursuant to the NEF - LG) (Entered: 02/21/2013)	
53	02/21/2013	ORDER granting 45 Verified Petition for Permission to Practice Pro Hac Vice for Attorney James E. Quigley for Unwired Planet, LLC and approving Designation of Local Counsel. Signed by Chief Judge Robert C. Jones on 02/21/13. Any Attorney not yet registered with the Court's CM/ECF System shall submit a Registration Form on the Court's website www.nvd.uscourts.gov (Copies have been distributed pursuant to the NEF - LG) (Entered: 02/21/2013)	
54	02/21/2013	ORDER granting 46 Verified Petition for Permission to Practice Pro Hac Vice for Attorney Mieke Malmberg for Unwired Planet and approving Designation of Local Counsel. Signed by Chief Judge Robert C. Jones on 02/21/13. Any Attorney not yet registered with the Court's CM/ECF System shall submit a Registration Form on the Court's website www.nvd.uscourts.gov (Copies have been distributed pursuant to the NEF - LG) (Entered: 02/21/2013)	
55	02/21/2013	ORDER granting 47 Verified Petition for Permission to Practice Pro Hac Vice for Attorney John F. Garvish for Unwired Planet, LLC and approving Designation of Local Counsel. Signed by Chief Judge Robert C. Jones on 02/21/13. Any Attorney not yet registered with the Court's CM/ECF System shall submit a Registration Form on the Court's website www.nvd.uscourts.gov (Copies have been distributed pursuant to the NEF - LG) (Entered: 02/21/2013)	
56	02/21/2013	ORDER granting 48 Verified Petition for Permission to Practice Pro Hac Vice for Attorney Mario A. Apreotesi for Unwired Planet, LLC and approving Designation of Local Counsel. Signed by Chief Judge Robert C. Jones on 02/21/13. Any Attorney not yet registered with the Court's CM/ECF System shall submit a Registration Form on the Court's website www.nvd.uscourts.gov (Copies have been distributed pursuant to the NEF - LG) (Entered: 02/21/2013)	

#	Date	Proceeding Text	Source
57	02/21/2013	MINUTE ORDER IN CHAMBERS of the Honorable Chief Judge Robert C. Jones, on February 21, 2013, by Carrie Lipparelli, Judicial Assistant. IT IS HEREBY ORDERED that 49 Verified Petition for Permission to Practice Pro Hac Vice and approving Designation of Local Counsel for Ryan James Cudnik is DENIED. IT IS SO ORDERED. Signed by Chief Judge Robert C. Jones. (Copies have been distributed pursuant to the NEF - CL) (Entered: 02/21/2013)	
58	02/28/2013	VERIFIED PETITION for Permission to Practice Pro Hac Vice by John B. Campbell and DESIGNATION of Local Counsel Michael D. Rounds (Filing fee $ 200 receipt number 0978-2721753) filed by Counter Defendant Unwired Planet, LLC, Plaintiff Unwired Planet, LLC. Motion ripe 2/28/2013. (Rounds, Michael) (Entered: 02/28/2013)	
59	03/01/2013	ORDER APPROVING 58 Verified Petition for Permission to Practice Pro Hac Vice by Attorney John B. Campbell for Unwired Planet, LLC, and approving Designation of Local Counsel Michael D. Rounds. Signed by Chief Judge Robert C. Jones on 03/01/2013. Any Attorney not yet registered with the Court's CM/ECF System shall submit a Registration Form on the Court's website www.nvd.uscourts.gov (Copies have been distributed pursuant to the NEF - KR) (Entered: 03/01/2013)	
60	03/05/2013	MINUTE ORDER IN CHAMBERS of the Honorable Magistrate Judge Valerie P. Cooke, on 3/5/2013. By Deputy Clerk: LGM. Out-of-town counsel shall be allowed to appear telephonically at the case management conference set for Monday, March 11, 2013 at 9:00 AM and shall dial 877-336-1829 at least five (5) minutes prior to the hearing to be properly connected into the courtroom. The Access Code is 2809752 and the Security Code is 125050311. IT IS SO ORDERED. (no image attached) (Copies have been distributed pursuant to the NEF - LGM) (Entered: 03/05/2013)	
61	03/06/2013	MOTION for Leave to File Brief, Declaration and Exhibit Under Seal by Plaintiff Unwired Planet, LLC. Motion ripe 3/6/2013. (Attachments: # 1 Proposed Order 1-(Proposed) Order Granting Motion to For Leave to File Under Seal)(Rounds, Michael) (Entered: 03/06/2013)	
62	03/06/2013	DECLARATION of MICHAEL D. ROUNDS re 61 MOTION for Leave to File Brief, Declaration and Exhibit Under Seal ; by Plaintiff Unwired Planet, LLC. (Rounds, Michael) (Entered: 03/06/2013)	
64	03/06/2013	DECLARATION of JOHN F. GARVISH, II re 63 Response to 37 Motion ; by Plaintiff Unwired Planet, LLC. (Attachments: # 1 Exhibit 20-26, # 2 Exhibit 27-32, # 3 Exhibit 33-37, # 4 Exhibit 38-52, # 5 Exhibit 53-57, # 6 Exhibit 58-61, # 7 Exhibit 62, # 8 Exhibit 63-68, # 9 Exhibit 69-75, # 10 Exhibit 76-81)(Rounds, Michael) Modified on 3/12/2013 link to motion added. (BLG). (Entered: 03/06/2013)	
65	03/06/2013	DECLARATION of DANIEL MENDEZ re 63 Response to 37 Motion ; by Plaintiff Unwired Planet, LLC. (Rounds, Michael) Modified on 3/12/2013 link added. (BLG). (Entered: 03/06/2013)	
66	03/06/2013	DECLARATION of MIKE MULICA re 63 Response to 37 Motion ; by Plaintiff Unwired Planet, LLC. (Rounds, Michael) Modified on 3/12/2013 link added. (BLG). (Entered: 03/06/2013)	
67	03/06/2013	DECLARATION of TIMOTHY ROBBINS re 63 Response to 37 Motion ; by Plaintiff Unwired Planet, LLC. (Rounds, Michael) Modified on 3/12/2013 link added. (BLG). (Entered: 03/06/2013)	
68	03/06/2013	DECLARATION of ERIC VETTER re 63 Response to 37 Motion ; by Plaintiff Unwired Planet, LLC. (Rounds, Michael) Modified on 3/12/2013 link added.(BLG). (Entered: 03/06/2013)	

#	Date	Proceeding Text	Source
72	03/06/2013	STATUS REPORT Joint Case Management Report by Defendant Apple, Inc., Plaintiff Unwired Planet, LLC. (Attachments: # 1 Exhibit A, # 2 Exhibit B, # 3 Exhibit C, # 4 Exhibit D, # 5 Exhibit E, # 6 Exhibit F, # 7 Exhibit G, # 8 Exhibit H, # 9 Exhibit I, # 10 Exhibit J, # 11 Exhibit K, # 12 Exhibit L, # 13 Exhibit M)(Rounds, Michael) (Entered: 03/06/2013)	
73	03/11/2013	MINUTES OF PROCEEDINGS - Case Management Conference held on 3/11/2013 before Magistrate Judge Valerie P. Cooke. Crtrm Administrator: LGM; Pla Counsel: Michael Rounds, John Campbell, and Pierre Hubert; Def Counsel: Ernest Hsin and Jonathan Fountain; Court Reporter/FTR #: 9:02:49 - 10:16:56; Time of Hearing: 9:02 a.m.; Courtroom: 1; The Court approves and signs the order granting Unwired Planet's motion for leave to file declaration, deposition transcript and brief under seal 61 . The Court finds it shall take the issues concerning the protective order and number of claims under submission and enter an written order. Court adjourns. (Copies have been distributed pursuant to the NEF - LGM) (Entered: 03/11/2013)	
76	03/11/2013	ORDER Granting Unwired Planet's Motion for Leave to File Declaration, Deposition Transcript and Brief Under Seal. Signed by Magistrate Judge Valerie P. Cooke on 3/11/13. (Copies have been distributed pursuant to the NEF - JC) (Entered: 03/13/2013)	
74	03/12/2013	STIPULATION FOR EXTENSION OF TIME (First Request) re 63 Response to Motion ; by Counter Claimant Apple, Inc., Defendant Apple, Inc.. (Fountain, Jonathan) (Entered: 03/12/2013)	
75	03/12/2013	ERRATA to 63 Response to 37 Motion ; Corrections to Confidential Brief (Doc. 69) and Non-Confidential Brief (Doc. 63) filed by Plaintiff Unwired Planet, LLC. (Yowell, Adam) Modified on 3/13/2013 add link to motion (WJ). (Entered: 03/12/2013)	
77	03/16/2013	MINUTE ORDER IN CHAMBERS of the Honorable Chief Judge Robert C. Jones, on March 16, 2013, by Carrie L. Lipparelli, Judicial Assistant. IT IS HEREBY ORDERED that 74 Stipulation Extending the Time for Defendant Apple Inc. To File and Serve a Reply in Support of Its Motion to Transfer (First Request) is GRANTED. Defendant Apple Inc. shall file a reply in support of its motion to transfer on or before March 25, 2013. IT IS SO ORDERED. Signed Chief Judge Robert C. Jones. (Copies have been distributed pursuant to the NEF - CL) (Entered: 03/16/2013)	
78	03/20/2013	TRANSCRIPT of Proceedings, 73 Order on Motion for Leave to File, Miscellaneous Hearing,,,, held on 3-11-13, before Magistrate Judge Valerie P. Cooke. Court Reporter/Transcriber: Kathy French, 530-913-9213. Transcript may be viewed at the court public terminal or purchased through the Court Reporter/Transcriber using the court's "Transcript Order" form available on our website www.nvd.uscourts.gov before the deadline for Release of Transcript Restriction. After that date it may be obtained through PACER Redaction Request due 4/10/2013. Redacted Transcript Deadline set for 4/20/2013. Release of Transcript Restriction set for 6/18/2013. (KF) (Entered: 03/20/2013)	
79	03/25/2013	VERIFIED PETITION for Permission to Practice Pro Hac Vice by Warren H. Lipschitz and DESIGNATION of Local Counsel Michael D. Rounds (Filing fee $ 200 receipt number 0978-2752493) filed by Counter Defendant Unwired Planet, LLC, Plaintiff Unwired Planet, LLC . Motion ripe 3/25/2013. (Rounds, Michael) (Entered: 03/25/2013)	
80	03/25/2013	VERIFIED PETITION for Permission to Practice Pro Hac Vice by Ashley N. Moore and DESIGNATION of Local Counsel Michael D.	

#	Date	Proceeding Text	Source
		Rounds (Filing fee $ 200 receipt number 0978-2752502) filed by Counter Defendant Unwired Planet, LLC, Plaintiff Unwired Planet, LLC . Motion ripe 3/25/2013. (Rounds, Michael) (Entered: 03/25/2013)	
81	03/25/2013	REPLY to Response to 37 MOTION to Transfer filed by Counter Claimant Apple, Inc., Defendant Apple, Inc.. (Attachments: # 1 Declaration Thomas Bernard, # 2 Declaration Brooke Wallace, # 3 Exhibit 1, # 4 Exhibit 2, # 5 Exhibit 3, # 6 Exhibit 4, # 7 Exhibit 5)(Fountain, Jonathan) (Entered: 03/25/2013)	
82	03/29/2013	VERIFIED PETITION for Permission to Practice Pro Hac Vice by Steven Kalogeras and DESIGNATION of Local Counsel Jonathan W. Fountain (Filing fee $ 200 receipt number 0978-2760163) by Counter Claimant Apple, Inc., Defendant Apple, Inc.. Motion ripe 3/29/2013. (Fountain, Jonathan) (Entered: 03/29/2013)	
83	04/04/2013	MOTION for Leave to File Sur-Reply to Apple's Reply in Support of Its Motion to Transfer Venue by Plaintiff Unwired Planet, LLC. Motion ripe 4/4/2013. (Attachments: # 1 Proposed Order)(Yowell, Adam) (Entered: 04/04/2013)	
84	04/04/2013	MOTION to Seal Motion for Leave to File Sur-Reply Brief Under Seal by Plaintiff Unwired Planet, LLC. Motion ripe 4/4/2013. (Attachments: # 1 Proposed Order)(Yowell, Adam) (Entered: 04/04/2013)	
86	04/04/2013	REPLY to Response to 37 MOTION to Transfer filed by Plaintiff Unwired Planet, LLC. Sur-Reply In Opposition to Apple's Motion to Transfer Venue--REDACTED (Yowell, Adam) (Entered: 04/04/2013)	
87	04/08/2013	ORDER APPROVING 79 Verified Petition for Permission to Practice Pro Hac Vice for Attorney Warren H. Lipschitz for Unwired Planet, LLC and approving Designation of Local Counsel Michael D. Rounds. Signed by Chief Judge Robert C. Jones on 4/5/2013. Any Attorney not yet registered with the Court's CM/ECF System shall submit a Registration Form on the Court's website www.nvd.uscourts.gov (Copies have been distributed pursuant to the NEF - DRM) (Entered: 04/08/2013)	
88	04/08/2013	ORDER APPROVING 80 Verified Petition for Permission to Practice Pro Hac Vice for Attorney Ashley N. Moore for Unwired Planet, LLC and approving Designation of Local Counsel Michael D. Rounds. Signed by Chief Judge Robert C. Jones on 4/5/2013. Any Attorney not yet registered with the Court's CM/ECF System shall submit a Registration Form on the Court's website www.nvd.uscourts.gov (Copies have been distributed pursuant to the NEF - DRM) (Entered: 04/08/2013)	
89	04/08/2013	ORDER APPROVING 82 Verified Petition for Permission to Practice Pro Hac Vice for Attorney Steven Kalogeras for Apple, Inc. and approving Designation of Local Counsel Jonathan Fountaion. Signed by Chief Judge Robert C. Jones on 4/5/2013. Any Attorney not yet registered with the Court's CM/ECF System shall submit a Registration Form on the Court's website www.nvd.uscourts.gov (Copies have been distributed pursuant to the NEF - DRM) (Entered: 04/08/2013)	
90	04/08/2013	STATUS REPORT for April 11, 2013 Case Management Conference by Counter Claimant Apple, Inc., Defendant Apple, Inc.. (Attachments: # 1 Exhibit 1, # 2 Exhibit 2, # 3 Exhibit 3)(Fountain, Jonathan) (Entered: 04/08/2013)	
91	04/08/2013	STATUS REPORT Case Management Report for April 11, 2013 Case Management Conference by Plaintiff Unwired Planet, LLC. (Rounds, Michael) (Entered: 04/08/2013)	
92	04/08/2013	DECLARATION of MICHAEL D. ROUNDS re 91 Status Report ; including Exhibits A, B, and C In Support of Case Management	

#	Date	Proceeding Text	Source
		Report by Plaintiff Unwired Planet, LLC. (Rounds, Michael) (Entered: 04/08/2013)	
93	04/11/2013	ORDER re protective order provisions. The parties shall submit a protective order consistent with the attached order no later than Friday, April 19, 2013. Signed by Magistrate Judge Valerie P. Cooke on 4/11/13. (Copies have been distributed pursuant to the NEF - DN) (Entered: 04/11/2013)	
94	04/11/2013	MINUTES OF PROCEEDINGS - Case Management Conference held on 4/11/2013 before Magistrate Judge Valerie P. Cooke. Crtrm Administrator: LGM; Pla Counsel: Michael Rounds, John Campbell, and (By telephone) Pierre Hubert; Def Counsel: Ernest Hsin, Jonathan Fountain, and (By telephone) Brooke Wallace; Court Reporter/FTR #: 9:0048 - 10:09:54 and 10:15:12 - 10:39:34; Time of Hearing: 9:00 a.m.; Courtroom: 1; The Court hears from counsel regarding their respective positions concerning discovery disputes. Counsel are directed to meet and confer and propose an amended scheduling order. See the attached order for specifications. (Copies have been distributed pursuant to the NEF - LGM) (Entered: 04/12/2013)	
95	04/15/2013	TRANSCRIPT of Proceedings, 94 Miscellaneous Hearing,, held on 4-11-13, before Magistrate Judge Valerie P. Cooke. Court Reporter/Transcriber: Kathy French, 530-913-9213. Transcript may be viewed at the court public terminal or purchased through the Court Reporter/Transcriber using the court's "Transcript Order" form available on our website www.nvd.uscourts.gov before the deadline for Release of Transcript Restriction. After that date it may be obtained through PACER Redaction Request due 5/6/2013. Redacted Transcript Deadline set for 5/16/2013. Release of Transcript Restriction set for 7/14/2013. (KF) (Entered: 04/15/2013)	
96	04/17/2013	ORDER - UP shall limit its asserted claims to no more than 70. The parties shall meet and confer and shall submit an amended scheduling order that incorporates these rulings. (See pdf order for specifics.) Signed by Magistrate Judge Valerie P. Cooke on 4/17/2013. (Copies have been distributed pursuant to the NEF - DRM) (Main Document 96 replaced on 4/17/2013) (DRM). (Entered: 04/17/2013)	
97	04/17/2013	NOTICE of Corrected Image/Document re 96 Order (Original image was for an unrelated case, and has been replaced.) (Service of corrected image is attached). (DRM) (Entered: 04/17/2013)	
98	04/19/2013	MOTION FOR CLARIFICATION OF APRIL 11, 2013, ORDER re 93 Order, by Plaintiff Unwired Planet, LLC. Responses due by 5/6/2013. (Rounds, Michael) (Entered: 04/19/2013)	
99	04/19/2013	STIPULATION TO PRODUCE ELECTRONICALLY-STORED INFORMATION ACCORDING TO MODEL ORDER by Counter Defendant Unwired Planet, LLC, Plaintiff Unwired Planet, LLC. (Attachments: # 1 Exhibit A)(Rounds, Michael) (Entered: 04/19/2013)	
100	04/19/2013	Submission of PROPOSED ORDER filed by Counter Claimant Apple, Inc., Defendant Apple, Inc. Proposed Protective Order. (Fountain, Jonathan) (Entered: 04/19/2013)	
101	04/22/2013	RESPONSE to 83 MOTION for Leave to File Sur-Reply to Apple's Reply in Support of Its Motion to Transfer Venue, filed by Defendant Apple, Inc.. Replies due by 5/2/2013. (Krieger, John) (Entered: 04/22/2013)	
102	04/24/2013	ORDER ON 99 STIPULATION. The parties will produce	

#	Date	Proceeding Text	Source
		electronically-stored information according to the Federal Circuit Advisory Council's Model Order Regarding E-Discovery In Patent Cases. Signed by Magistrate Judge Valerie P. Cooke on 04/24/2013. (Copies have been distributed pursuant to the NEF - KR) (Entered: 04/24/2013)	
103	04/25/2013	(1st Notice) PURSUANT TO SPECIAL ORDER 109: that Josh A. Krevitt is in violation of Special Order 109. Participation in the electronic filing system became mandatory for all attorneys effective January 1, 2006. You are required to register for the Court's Case Management and Electronic Case Filing (CM/ECF) program and the electronic service of pleadings. Please visit the Court's website to register for CM/ECF. (no image attached) (LG) (Entered: 04/25/2013)	
104	05/02/2013	STIPULATION FOR EXTENSION OF TIME (First Request) re 94 Miscellaneous Hearing,, 96 Order, ; for Apple to Serve its Local Rule 16.1-8 and 16.1-9 Disclosures and Document Production by Counter Claimant Apple, Inc., Defendant Apple, Inc.. (Fountain, Jonathan) (Entered: 05/02/2013)	
105	05/06/2013	RESPONSE to 98 MOTION FOR CLARIFICATION OF APRIL 11, 2013, ORDER re 93 Order, , filed by Counter Claimant Apple, Inc., Defendant Apple, Inc.. Replies due by 5/16/2013. (Attachments: # 1 Exhibit A)(Fountain, Jonathan) (Entered: 05/06/2013)	
106	05/07/2013	ORDER ON 104 STIPULATION, signed by Magistrate Judge Valerie P. Cooke on 05/07/2013. (Copies have been distributed pursuant to the NEF - KR) (Entered: 05/07/2013)	
107	05/07/2013	STATUS REPORT Case Management Conference Report [May 2013] by Counter Claimant Apple, Inc., Defendant Apple, Inc.. (Attachments: # 1 Exhibit A - Email Correspondence)(Fountain, Jonathan) (Entered: 05/07/2013)	
108	05/08/2013	STATEMENT of Unwired Planet Case Management Report by Counter Defendant Unwired Planet, LLC, Plaintiff Unwired Planet, LLC. (Attachments: # 1 Declaration Michael D. Rounds)(Rounds, Michael) (Entered: 05/08/2013)	
109	05/09/2013	MINUTE ORDER IN CHAMBERS of the Honorable Magistrate Judge Valerie P. Cooke, on 5/9/2013. By Deputy Clerk: LGM. Out-of-town and out-of-state counsel shall be allowed to appear telephonically for the case management conference set before this Court on Friday, May 10, 2013 at 10:00 AM and shall dial 877-336-1829 at least five (5) minutes prior to the hearing to be properly connected into the courtroom. The Access Code is 2809752 and the Security Code is 125050510. IT IS SO ORDERED. (no image attached) (Copies have been distributed pursuant to the NEF - LGM) (Entered: 05/09/2013)	
110	05/09/2013	STIPULATION REGARDING THE MAY 10, 2013 CASE MANAGEMENT CONFERENCE, UNWIRED PLANET'S LOCAL PATENT RULE 16.1-7(B) DOCUMENT PRODUCTION, AND APPLE'S DUE DATE FOR IT'S INVALIDITY CONTENTIONS by Counter Defendant Unwired Planet, LLC, Plaintiff Unwired Planet, LLC. (Attachments: # 1 Exhibit A)(Rounds, Michael) (Entered: 05/09/2013)	
111	05/09/2013	MINUTE ORDER IN CHAMBERS of the Honorable Magistrate Judge Valerie P. Cooke, on 5/9/2013. By Deputy Clerk: LGM. In light of the parties' stipulation regarding the May 10, 2013 case management conference 110 , the case management conference set for Friday, May 10, 2013 at 10:00 AM is VACATED. IT IS SO ORDERED. (no image attached) (Copies have been distributed pursuant to the NEF - LGM) (Entered: 05/09/2013)	
112	05/10/2013	Unopposed MOTION to Amend/Correct Complaint re 1 Complaint,,. by Plaintiff Unwired Planet, LLC. Responses due by	

#	Date	Proceeding Text	Source
		5/27/2013. (Attachments: # 1 Exhibit 1-First Amended Complaint for Patent Infringement, # 2 Proposed Order Order Granting Leave to File First Amended Complaint for Patent Infringement)(Yowell, Adam) (Entered: 05/10/2013)	
113	05/16/2013	REPLY to Response to 98 MOTION FOR CLARIFICATION OF APRIL 11, 2013, ORDER re 93 Order, filed by Counter Defendant Unwired Planet, LLC, Plaintiff Unwired Planet, LLC. (Attachments: # 1 Exhibit A)(Rounds, Michael) (Entered: 05/16/2013)	
114	05/17/2013	ORDER granting 98 motion for clarification to the extent that the court clarifies that its order 93 is clear on its face. Signed by Magistrate Judge Valerie P. Cooke on 5/17/13. (Copies have been distributed pursuant to the NEF - DN) (Entered: 05/17/2013)	
115	05/22/2013	VERIFIED PETITION for Permission to Practice Pro Hac Vice by Kevin M. Kneupper and DESIGNATION of Local Counsel Michael D. Rounds (Filing fee $ 200 receipt number 0978-2827583) filed by Counter Defendant Unwired Planet, LLC, Plaintiff Unwired Planet, LLC . Motion ripe 5/22/2013. (Rounds, Michael) (Entered: 05/22/2013)	
116	05/22/2013	VERIFIED PETITION for Permission to Practice Pro Hac Vice by David Sochia and DESIGNATION of Local Counsel Michael D. Rounds (Filing fee $ 200 receipt number 0978-2828079) filed by Counter Defendant Unwired Planet, LLC, Plaintiff Unwired Planet, LLC . Motion ripe 5/22/2013. (Rounds, Michael) (Entered: 05/22/2013)	
117	05/29/2013	STIPULATION [PROPOSED] PROTECTIVE ORDER REGARDING THE DISCLOSURE AND USE OF DISCOVERY MATERIALS by Plaintiff Unwired Planet, LLC. (Rounds, Michael) (Entered: 05/29/2013)	
118	06/03/2013	PROTECTIVE ORDER re 117 Proposed Order. Signed by Magistrate Judge Valerie P. Cooke on 6/3/13. (Copies have been distributed pursuant to the NEF - JC) (Entered: 06/03/2013)	
119	06/04/2013	MINUTE ORDER IN CHAMBERS of the Honorable Magistrate Judge Valerie P. Cooke, on 6/4/2013. By Deputy Clerk: LGM. In light of a calendar conflict with plaintiff's counsel and having no objection from defendant's counsel, the Case Management Conference currently set for 6/10/2013 at 09:00 AM is VACATED and ADVANCED to 6/7/2013 at 09:00 AM in Reno Courtroom 1 before Magistrate Judge Valerie P. Cooke. Out-of-town and out-of-state counsel shall be allowed to appear telephonically for the case management conference and shall dial 877-336-1829 at least five (5) minutes prior to the hearing to be properly connected into the courtroom. The Access Code is 2809752 and the Security Code is 125050607. IT IS SO ORDERED. (no image attached) (Copies have been distributed pursuant to the NEF - LGM) (Entered: 06/04/2013)	
120	06/04/2013	NOTICE of Appearance by attorney Michael D Rounds on behalf of Counter Defendant Unwired Planet, LLC, Plaintiff Unwired Planet, LLC. of RYAN J. CUDNIK (Rounds, Michael) (Entered: 06/04/2013)	
121	06/04/2013	ORDER granting 112 Motion to Amend/Correct Complaint. Signed by Magistrate Judge Valerie P. Cooke on 6/4/13. (Copies have been distributed pursuant to the NEF - JC) (Entered: 06/04/2013)	
122	06/05/2013	ORDER APPROVING 115 Verified Petition for Permission to Practice Pro Hac Vice by Attorney Kevin Kneupper for Unwired Planet, LLC, and approving Designation of Local Counsel Michael D. Rounds. Signed by Chief Judge Robert C. Jones on 06/04/2013. Any Attorney not yet registered with the Court's CM/ECF System shall submit a Registration Form on the Court's	

#	Date	Proceeding Text	Source
		website www.nvd.uscourts.gov (Copies have been distributed pursuant to the NEF - KR) (Entered: 06/05/2013)	
123	06/05/2013	ORDER APPROVING 116 Verified Petition for Permission to Practice Pro Hac Vice by Attorney David Sochia for Unwired Planet, LLC, and approving Designation of Local Counsel Michael D. Rounds. Signed by Chief Judge Robert C. Jones on 06/04/2013. Any Attorney not yet registered with the Court's CM/ECF System shall submit a Registration Form on the Court's website www.nvd.uscourts.gov (Copies have been distributed pursuant to the NEF - KR) (Entered: 06/05/2013)	
124	06/05/2013	STATUS REPORT Case Management Conference Report [June 2013] by Defendant Apple, Inc.. (Attachments: # 1 Exhibit A)(Fountain, Jonathan) (Entered: 06/05/2013)	
125	06/05/2013	STATUS REPORT Case Management Conference Statement by Plaintiff Unwired Planet, LLC. (Attachments: # 1 Exhibit 1, # 2 Exhibit 2, # 3 Exhibit 3, # 4 Exhibit 4, # 5 Exhibit 5, # 6 Exhibit 6)(Rounds, Michael) (Entered: 06/05/2013)	
126	06/07/2013	MINUTES OF PROCEEDINGS - Case Management Conference held on 6/7/2013 before Magistrate Judge Valerie P. Cooke. Crtrm Administrator: Heidi Jordan; Pla Counsel: Michael Rounds, Ryan Cudnik; Def Counsel: Ernest Hsin, Jonathan Fountain (By telephone); Court Reporter/FTR #: 9:04 - 11:00; Courtroom: 1; The Court addresses the parties regarding the purpose of this hearing and notes the parties have filed their Case Management Conference Reports 124 125 . Having heard from counsel and good cause appearing, the Court finds as follows: Markman hearing currently set December 16, 2013, at 1:30 p.m. is RESCHEDULED to Tuesday, January 21-22, 2014, at 9:00 a.m.Pre-Claim Construction Settlement Conference currently set for July 12, 2013, at 9:00 a.m. is RESCHEDULED to Thursday, September 19, 2013, at 9:00 a.m. Settlement Statements due September 12, 2013. Regarding the remaining revised deadlines, counsel shall submit an amended Scheduling Order incorporating the new agreed upon deadlines on or before June 14, 2013. (Copies have been distributed pursuant to the NEF - HJ) (Entered: 06/10/2013)	
127	06/10/2013	TRANSCRIPT of Proceedings, 126 Status Conference,,,,. Set/Reset Deadlines,,,, held on 6-7-13, before Magistrate Judge Valerie P. Cooke. Court Reporter/Transcriber: Kathy French, 530-913-9213. Transcript may be viewed at the court public terminal or purchased through the Court Reporter/Transcriber using the court's "Transcript Order" form available on our website www.nvd.uscourts.gov before the deadline for Release of Transcript Restriction. After that date it may be obtained through PACER Redaction Request due 7/1/2013. Redacted Transcript Deadline set for 7/11/2013. Release of Transcript Restriction set for 9/8/2013. (KF) (Entered: 06/10/2013)	
128	06/14/2013	PROPOSED Discovery Plan/Scheduling Order filed by Plaintiff Unwired Planet, LLC Amended [Joint Proposed] Scheduling Order. (Rounds, Michael) (Entered: 06/14/2013)	
129	06/17/2013	SCHEDULING ORDER re 128 Amended Proposed Discovery Plan/Scheduling Order. Signed by Magistrate Judge Valerie P. Cooke on 6/17/13. (Copies have been distributed pursuant to the NEF - JC) (Entered: 06/17/2013)	
130	06/28/2013	AMENDED COMPLAINT with Jury Demand against All Defendants, filed by Unwired Planet, LLC. No changes to parties. Proof of service due by 10/26/2013. (Rounds, Michael) (Entered: 06/28/2013)	

#	Date	Proceeding Text	Source
131	07/01/2013	MINUTE ORDER IN CHAMBERS of the Honorable Magistrate Judge Valerie P. Cooke, on 7/1/2013. By Deputy Clerk: LGM. Out-of-town and out-of-state counsel shall be allowed to appear telephonically for the case management conference set before this Court on Thursday, July 11, 2013 at 10:00 AM and shall dial 877-336-1829 at least five (5) minutes prior to the hearing to be properly connected into the courtroom. The Access Code is 2809752 and the Security Code is 125050711. Counsel shall file a joint or separate case management report by no later than the close of business on Monday, July 8, 2013. IT IS SO ORDERED. (no image attached) (Copies have been distributed pursuant to the NEF - LGM) (Entered: 07/01/2013)	
132	07/08/2013	STATEMENT UNWIRED PLANET'S CASE MANAGEMENT STATEMENT by Counter Defendant Unwired Planet, LLC, Plaintiff Unwired Planet, LLC. (Attachments: # 1 Exhibit A, # 2 Exhibit B, # 3 Exhibit C, # 4 Exhibit D, # 5 Exhibit E)(Rounds, Michael) (Entered: 07/08/2013)	
133	07/08/2013	STATUS REPORT re July 2013 Case Management Conference by Counter Claimant Apple, Inc., Defendant Apple, Inc.. (Attachments: # 1 Exhibit A, # 2 Exhibit B, # 3 Exhibit C, # 4 Exhibit D, # 5 Exhibit E, # 6 Exhibit F, # 7 Exhibit G, # 8 Exhibit H)(Fountain, Jonathan) (Entered: 07/08/2013)	
134	07/11/2013	MINUTES OF PROCEEDINGS - Case Management Conference held on 7/11/2013 before Magistrate Judge Valerie P. Cooke. Crtrm Administrator: LGM; Pla Counsel: Michael Rounds, John Campbell, and (By telephone) Pierre Hubert; Def Counsel: Ernest Hsin, Jonathan Fountain, and (By telephone) Brooke Wallace; Court Reporter/FTR #: 10:00:55 - 10:35:32; Time of Hearing: 10:00 a.m.; Courtroom: 1; The Court finds it is not convinced and that it is premature to order Apple to limit the number of asserted prior art references at this time. IT IS SO ORDERED. (Copies have been distributed pursuant to the NEF - LGM) (Entered: 07/11/2013)	
135	07/11/2013	STIPULATION FOR EXTENSION OF TIME (Second Request) Extending the Time for Apple to Serve its Local Rule 16.1-8(b)-(e) Disclosures by Counter Claimant Apple, Inc., Defendant Apple, Inc.. (Fountain, Jonathan) (Entered: 07/11/2013)	
136	07/15/2013	ORDER ON STIPULATION re 135 Stipulation Extending Time for Apple to Serve Disclosures. Signed by Magistrate Judge Valerie P. Cooke on 7/15/13. (Copies have been distributed pursuant to the NEF - JC) (Entered: 07/15/2013)	
137	07/15/2013	ANSWER to 130 Amended Complaint with Jury Demand , COUNTERCLAIM against Unwired Planet, LLC filed by Apple, Inc.. (Attachments: # 1 Exhibit 1, # 2 Exhibit 2, # 3 Exhibit 3, # 4 Exhibit 4, # 5 Exhibit 5, # 6 Exhibit 6, # 7 Exhibit 7, # 8 Exhibit 8, # 9 Exhibit 9, # 10 Exhibit 10, # 11 Exhibit 11, # 12 Exhibit 12, # 13 Exhibit 13, # 14 Exhibit 14, # 15 Exhibit 15, # 16 Exhibit 16, # 17 Exhibit 17, # 18 Exhibit 18)(Fountain, Jonathan) (Entered: 07/15/2013)	
138	07/16/2013	NOTICE PURSUANT TO LOCAL RULE IB 2-2: In accordance with 28 USC § 636(c) and FRCP 73, the parties in this action are provided with a link to the "AO 85 Notice of Availability, Consent, and Order of Reference - Exercise of Jurisdiction by a U.S. Magistrate Judge" form on the Court's website - www.nvd.uscourts.gov. Consent forms should NOT be electronically filed. Upon consent of all parties, counsel are advised to manually file the form with the Clerk's Office. A copy of form AO 85 has been mailed to parties not receiving electronic service. (no image attached) (DRM) (Entered: 07/16/2013)	

#	Date	Proceeding Text	Source
139	07/18/2013	TRANSCRIPT of Proceedings. 134 Miscellaneous Hearing, held on 7/11/13, before Magistrate Judge Valerie P. Cooke. Court Reporter/Transcriber: Donna Davidson, 775-329-0132. Transcript may be viewed at the court public terminal or purchased through the Court Reporter/Transcriber using the court's "Transcript Order" form available on our website www.nvd.uscourts.gov before the deadline for Release of Transcript Restriction. After that date it may be obtained through PACER Redaction Request due 8/8/2013. Redacted Transcript Deadline set for 8/18/2013. Release of Transcript Restriction set for 10/16/2013. (DD) (Entered: 07/18/2013)	
140	07/22/2013	VERIFIED PETITION for Permission to Practice Pro Hac Vice by Mitchell Sibley and DESIGNATION of Local Counsel Michael D. Rounds (Filing fee $ 200 receipt number 0978-2896079) filed by Counter Defendants Unwired Planet, LLC, Unwired Planet, LLC, Plaintiff Unwired Planet, LLC . Motion ripe 7/22/2013. (Rounds, Michael) (Entered: 07/22/2013)	
141	08/05/2013	STIPULATION and Proposed Order Vacating the August 9, 2013 Case Management Conference by Counter Claimants Apple, Inc., Apple, Inc., Defendant Apple, Inc.. (Fountain, Jonathan) (Entered: 08/05/2013)	
142	08/06/2013	ORDER ON STIPULATION re 141 Stipulation Vacating the August 9, 2013 Case Management Conference. Signed by Magistrate Judge Valerie P. Cooke on 8/6/13. (Copies have been distributed pursuant to the NEF - JC) (Entered: 08/06/2013)	
143	08/06/2013	VERIFIED PETITION for Permission to Practice Pro Hac Vice by Nicholas M. Mathews and DESIGNATION of Local Counsel Michael D. Rounds (Filing fee $ 200 receipt number 0978-2914703) filed by Counter Defendants Unwired Planet, LLC, Unwired Planet, LLC, Plaintiff Unwired Planet, LLC . Motion ripe 8/6/2013. (Rounds, Michael) (Entered: 08/06/2013)	
144	08/08/2013	MINUTE ORDER IN CHAMBERS of the Honorable Magistrate Judge Valerie P. Cooke, on 8/8/2013. By Deputy Clerk: LGM. Monthly Case Management Conferences are set as follows: 9/6/2013 at 02:00 PM, 10/4/2013 at 02:00 PM, 11/4/2013 at 02:00 PM, and 12/5/2013 at 09:00 AM all in Reno Courtroom 1 before Magistrate Judge Valerie P. Cooke. Counsel shall file a joint or separate case management report by no later than the close of business three (3) court days prior to each conference. IT IS SO ORDERED. (no image attached) (Copies have been distributed pursuant to the NEF - LGM) (Entered: 08/08/2013)	
145	08/08/2013	ANSWER to 137 Answer to Amended Complaint,,, Counterclaim,, filed by Unwired Planet, LLC.(Rounds, Michael) (Entered: 08/08/2013)	
146	08/09/2013	NOTICE PURSUANT TO LOCAL RULE IB 2-2: In accordance with 28 USC § 636(c) and FRCP 73, the parties in this action are provided with a link to the "AO 85 Notice of Availability, Consent, and Order of Reference - Exercise of Jurisdiction by a U.S. Magistrate Judge" form on the Court's website - www.nvd.uscourts.gov. Consent forms should NOT be electronically filed. Upon consent of all parties, counsel are advised to manually file the form with the Clerk's Office. A copy of form AO 85 has been mailed to parties not receiving electronic service. (no image attached) (JC) (Entered: 08/09/2013)	
147	08/15/2013	STIPULATION and Proposed Order for the Withdrawal of Attorney Etai Lahav and for the Removal of Attorney Etai Lahav from the CM/ECF Service List by Counter Claimants Apple, Inc., Apple, Inc., Defendant Apple, Inc.. (Fountain, Jonathan) (Entered: 08/15/2013)	

#	Date	Proceeding Text	Source
148	08/19/2013	ORDER ON 147 STIPULATION for Withdrawal of Attorney Etai Lahav as counsel for Apple Inc., and removal from CM/ECF service list. Signed by Magistrate Judge Valerie P. Cooke on 8/19/2013. (Copies have been distributed pursuant to the NEF - DRM) (Entered: 08/19/2013)	
149	08/19/2013	NOTICE OF ORDER by Unwired Planet, LLC. (Attachments: # 1 Exhibit)(Rounds, Michael) (Entered: 08/19/2013)	
150	08/30/2013	MINUTE ORDER IN CHAMBERS of the Honorable Magistrate Judge Valerie P. Cooke, on 8/30/2013. By Deputy Clerk: LGM. Out-of-town and out-of-state counsel shall be allowed to appear telephonically for the case management conference set before this Court on Friday, September 6, 2013 at 2:00 PM and shall dial 877-336-1829 at least five (5) minutes prior to the hearing to be properly connected into the courtroom. The Access Code is 2809752 and the Security Code is 125050906. Counsel shall file a joint or separate case management report by no later than the close of business on Tuesday, September 3, 2013. IT IS SO ORDERED. (no image attached) (Copies have been distributed pursuant to the NEF - LGM) (Entered: 08/30/2013)	
151	08/30/2013	ORDER granting 37 Motion to Transfer. Clerk shall transfer case to Northern District of CA, close case administratively, and terminate all other pending motions in this district. Signed by Chief Judge Robert C. Jones on 8/30/13. (Copies have been distributed pursuant to the NEF - JC) (Entered: 08/30/2013)	
152	08/30/2013	TRANSMITTAL of case to the District of Northern District of CA. Case and docket sheet transferred electronically. (no image attached) (JC) (Entered: 08/30/2013)	
153	09/03/2013	MINUTE ORDER IN CHAMBERS of the Honorable Magistrate Judge Valerie P. Cooke, on 9/3/2013. By Deputy Clerk: LGM. In light of the order granting the motion to transfer 151 , the case management conferences currently set before this Court on 9/6/2013 at 2:00 PM, 10/4/2013 at 2:00 PM, 11/4/2013 at 2:00 PM, and 12/5/2013 at 9:00 AM are all VACATED. IT IS SO ORDERED. (no image attached) (Copies have been distributed pursuant to the NEF - LGM) (Entered: 09/03/2013)	
154	09/03/2013	MINUTE ORDER IN CHAMBERS of the Honorable Magistrate Judge Valerie P. Cooke, on 9/3/2013. By Deputy Clerk: LGM. In light of the order granting the motion to transfer 151 , the pre-claim construction settlement conference currently set before this Court on September 19, 2013 at 9:00 AM is VACATED. IT IS SO ORDERED. (no image attached) (Copies have been distributed pursuant to the NEF - LGM) (Entered: 09/03/2013)	
155	09/09/2013	MOTION to Shorten Time regarding dispositive matter PLAINTIFF UNWIRED PLANET LLC'S MOTION FOR AN ORDER SHORTENING TIME FOR BRIEFING PLAINTIFF'S MOTION FOR RECONSIDERATION OF ORDER GRANTING TRANSFER by Counter Defendants Unwired Planet, LLC, Unwired Planet, LLC, Plaintiff Unwired Planet, LLC. Motion ripe 9/9/2013. (Attachments: # 1 Proposed Order)(Rounds, Michael) (Entered: 09/09/2013)	
156	09/09/2013	OBJECTIONS re LR IB 3-1 or MOTION for District Judge to Reconsider Order re 151 Order on Motion to Transfer, UNWIRED PLANET LLC'S MOTION FOR RECONSIDERATION OF ORDER GRANTING TRANSFER by Counter Defendants Unwired Planet, LLC, Unwired Planet, LLC, Plaintiff Unwired Planet, LLC. Responses due by 9/26/2013. (Attachments: # 1 Declaration Timothy Robbins, # 2 Declaration Daniel Mendez, # 3 Declaration Adam K. Yowell, # 4 Exhibit 1, # 5 Exhibit 2, # 6 Exhibit 3-1, # 7 Exhibit 3-2)(Rounds, Michael) (Entered: 09/09/2013)	

#	Date	Proceeding Text	Source
157	09/09/2013	RESPONSE to 155 MOTION to Shorten Time regarding dispositive matter PLAINTIFF UNWIRED PLANET LLC'S MOTION FOR AN ORDER SHORTENING TIME FOR BRIEFING PLAINTIFF'S MOTION FOR RECONSIDERATION OF ORDER GRANTING TRANSFER, filed by Counter Claimants Apple, Inc., Apple, Inc., Defendant Apple, Inc.. Replies due by 9/19/2013. (Fountain, Jonathan) (Entered: 09/09/2013)	
158	09/10/2013	REPLY to Response to 155 MOTION to Shorten Time regarding dispositive matter PLAINTIFF UNWIRED PLANET LLC'S MOTION FOR AN ORDER SHORTENING TIME FOR BRIEFING PLAINTIFF'S MOTION FOR RECONSIDERATION OF ORDER GRANTING TRANSFER filed by Counter Defendants Unwired Planet, LLC, Unwired Planet, LLC, Plaintiff Unwired Planet, LLC. (Rounds, Michael) (Entered: 09/10/2013)	
159	09/11/2013	NOTICE of Order by Apple, Inc.. (Attachments: # 1 Exhibit A)(Fountain, Jonathan) (Entered: 09/11/2013)	
160	09/16/2013	TRANSMITTAL RETURN re 152 Transmittal - Electronic Case Transfer Out to other District. Transferred case opened in California Northern District as case 4:13-cv-04134 on 9/6/2013. (JC) (Entered: 09/16/2013)	
161	09/26/2013	RESPONSE to 156 OBJECTIONS re LR IB 3-1 or MOTION for District Judge to Reconsider Order re 151 Order on Motion to Transfer, UNWIRED PLANET LLC'S MOTION FOR RECONSIDERATION OF ORDER GRANTING TRANSFER, filed by Counter Claimants Apple, Inc., Apple, Inc., Defendant Apple, Inc.. Replies due by 10/6/2013. (Attachments: # 1 Declaration Brooke Wallace, # 2 Exhibit 1, # 3 Declaration Danielle Durkee, # 4 Exhibit 1)(Fountain, Jonathan) (Entered: 09/26/2013)	
162	10/04/2013	REPLY to Response to 156 OBJECTIONS re LR IB 3-1 or MOTION for District Judge to Reconsider Order re 151 Order on Motion to Transfer, UNWIRED PLANET LLC'S MOTION FOR RECONSIDERATION OF ORDER GRANTING TRANSFER filed by Counter Defendants Unwired Planet, LLC, Unwired Planet, LLC, Plaintiff Unwired Planet, LLC. (Attachments: # 1 Declaration Adam K. Yowell, # 2 Exhibit 4, # 3 Exhibit 5, # 4 Exhibit 6)(Rounds, Michael) (Entered: 10/04/2013)	
163	10/23/2013	NOTICE of Corrected Image/Document re 63 Response to 37 MOTION to Transfer by Plaintiff Unwired Planet, LLC. (Service of corrected image is attached). (Rounds, Michael) Modified on 10/23/2013 links added. (BLG). (Entered: 10/23/2013)	
164	12/11/2013	ORDER denying 155 Motion to Extend Time; denying 156 Motion to Reconsider. Signed by Chief Judge Robert C. Jones on 12/11/2013. (Copies have been distributed pursuant to the NEF - KR) Modified on 12/11/2013 to correct HTML (KR). (Entered: 12/11/2013)	

Patents

Number	Title	Issued	Class	Subclass
6,317,594	System and method for providing data to a wireless device upon detection of activity of the device on a wireless network	11/13/2001	455	414.1
6,317,831	Method and apparatus for establishing a secure connection over a one-way data path	11/13/2001	713	171
6,321,092	Multiple input data management for wireless location-based applications	11/20/2001	455	456.5
6,532,446	Server based speech recognition user interface for wireless devices	03/11/2003	704	270.1

Number	Title	Issued	Class	Subclass
6,647,260	Method and system facilitating web based provisioning of two-way mobile communications devices	11/11/2003	455	419
6,813,491	Method and apparatus for adapting settings of wireless communication devices in accordance with user proximity	11/02/2004	455	414.1
7,020,685	Method and apparatus for providing internet content to SMS-based wireless devices	03/28/2006	709	204
7,233,790	Device capability based discovery, packaging and provisioning of content for wireless mobile devices	06/19/2007	455	419
7,299,033	Domain-based management of distribution of digital content from multiple suppliers to multiple wireless services subscribers	11/20/2007	455	414.1
7,522,927	Interface for wireless location information	04/21/2009	455	456.2

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*** THIS DATA IS FOR INFORMATIONAL PURPOSES ONLY ***

End of Document

Patent Assignment Abstract of Title

Total Assignments: 4

Application #: 10600746 **Filing Dt:** 06/19/2003 **Patent #:** 7233790 **Issue Dt:** 06/19/2007
PCT #: NONE **Intl Reg #:** **Publication #:** US20040054786 **Pub Dt:** 03/18/2004
Inventors: Rikard M. Kjellberg, Sheng Liang, Tomas G. Lund, William Chan, Ramakrishna Chinta, Xinbi Chen
Title: DEVICE CAPABILITY BASED DISCOVERY, PACKAGING AND PROVISIONING OF CONTENT FOR WIRELESS MOBILE DEVICES

Assignment: 1

Reel/Frame: 013985 / 0220 **Received:** 09/16/2003 **Recorded:** 09/16/2003 **Mailed:** 09/22/2003 **Pages:** 8
Conveyance: ASSIGNMENT OF ASSIGNORS INTEREST (SEE DOCUMENT FOR DETAILS).
Assignors: KJELLBERG, RIKARD M. **Exec Dt:** 09/02/2003
LIANG, SHENG **Exec Dt:** 08/27/2003
LUND, TOMAS G. **Exec Dt:** 08/27/2003
CHAN, WILLIAM **Exec Dt:** 08/26/2003
CHINTA, RAMAKRISHNA **Exec Dt:** 08/27/2003
CHEN, XINBI **Exec Dt:** 08/27/2003
Assignee: OPENWAVE SYSTEMS INC.
1400 SEAPORT BOULEVARD
REDWOOD CITY, CALIFORNIA 94063
Correspondent: BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP
JORDAN M. BECKER
12400 WILSHIRE BOULEVARD, 7TH FLOOR
LOS ANGELES, CALIFORNIA 90025

Assignment: 2

Reel/Frame: 028447 / 0940 **Received:** 06/26/2012 **Recorded:** 06/26/2012 **Mailed:** 06/28/2012 **Pages:** 13
Conveyance: MERGER (SEE DOCUMENT FOR DETAILS).
Assignor: OPENWAVE SYSTEMS INC. **Exec Dt:** 04/27/2012
Assignee: UNWIRED PLANET, INC.
2100 SEAPORT BLVD.
REDWOOD CITY, CALIFORNIA 94063
Correspondent: WILSON HAM & HOLMAN
1811 SANTA RITA ROAD, SUITE 130
PLEASANTON, CA 94566

Assignment: 3

Reel/Frame: 030585 / 0969 **Received:** 06/04/2013 **Recorded:** 05/08/2013 **Mailed:** 06/12/2013 **Pages:** 6
Conveyance: ASSIGNMENT OF ASSIGNORS INTEREST (SEE DOCUMENT FOR DETAILS).
Assignor: UNWIRED PLANET, INC. **Exec Dt:** 09/14/2012
Assignee: UNWIRED PLANET, LLC
226 CALIFORNIA AVE.
RENO, NEVADA 89509
Correspondent: SHEPPARD, MULLIN, RICHTER & HAMPTON LLP
379 LYTTON AVENUE
PALO ALTO, CALIFORNIA 94301

Assignment: 4

Reel/Frame: 054727 / 0726 **Received:** 12/22/2020 **Recorded:** 12/22/2020 **Mailed:** 12/28/2020 **Pages:** 4
Conveyance: ASSIGNMENT OF ASSIGNORS INTEREST (SEE DOCUMENT FOR DETAILS).
Assignor: UNWIRED PLANET LLC **Exec Dt:** 11/13/2020

Assignee: VIDEOLABS, INC.
655 BAYPORT AVE.
SAN CARLOS, CALIFORNIA 94070

Correspondent: WORKMAN NYDEGGER
60 E SOUTH TEMPLE STE. 1000
SALT LAKE CITY, UT 84111

Search Results as of: 06/23/2022 05:19 PM

If you have any comments or questions concerning the data displayed, contact PRD / Assignments at 571-272-3350. v.2.6
Web interface last modified: Jun 26, 2017 v.2.6

PTO/SB/57 (01-18)
Approved for use through 11/30/2021. OMB 0651-0064
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

(Also referred to as FORM PTO-1465)

REQUEST FOR *EX PARTE* REEXAMINATION TRANSMITTAL FORM

Address to:
Mail Stop *Ex Parte* Reexam
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Attorney Docket No.: 185945.011700

Date: June 23, 2022

1. ■ This is a request for *ex parte* reexamination pursuant to 37 CFR 1.510 of patent number 7,233,790 issued June 19, 2007. The request is made by:
   ☐ patent owner. ■ third party requester.

2. ■ The name and address of the person requesting reexamination is:
   Unified Patents, LLC
   4445 Willard Ave., Suite 600
   Chevy Chase, MD 20815

3. Requester ☐ asserts small entity status (37 CFR 1.27) or ☐ certifies micro entity status (37 CFR 1.29). Only a patent owner requester can certify micro entity status. Form PTO/SB/15A or B must be attached to certify micro entity status.

4. This request is accompanied by payment of the reexamination fee as set forth in:
   ■ 37 CFR 1.20(c)(2); **or**
   ☐ 37 CFR 1.20(c)(1). **In checking this box for payment of the fee set forth in 37 CFR 1.20(c)(1), requester asserts that this request has forty (40) or fewer pages and complies with all other requirements of 37 CFR 1.20(c)(1).**

   Payment of the reexamination fee is made by the method set forth below.
   a. ☐ A check in the amount of $_____ is enclosed to cover the reexamination fee;
   b. ■ The Director is hereby authorized to charge the reexamination fee to Deposit Account No. 50-6990;
   c. ☐ Payment by credit card. Form PTO-2038 is attached; **or**
   d. ☐ Payment made via EFS-Web.

   ■ In addition, the Director is hereby authorized to charge any fee deficiencies to Deposit Account No. 50-6990.

5. ■ Any refund should be made by ☐ check or ■ credit to Deposit Account No. 50-6990. 37 CFR 1.26(c). If payment is made by credit card, refund must be to credit card account.

6. ■ A copy of the patent to be reexamined having a double column format on one side of a separate paper is enclosed. 37 CFR 1.510(b)(4).

7. ☐ CD-ROM or CD-R in duplicate, Computer Program (Appendix) or large table
   ☐ Landscape Table on CD

This collection of information is required by 37 CFR 1.510. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) a request for reexamination. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 18 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Mail Stop *Ex Parte* Reexam, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**
If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

8. ☐ Nucleotide and/or Amino Acid Sequence Submission
If applicable, items a. – c. are required.
   a. ☐ Computer Readable Form (CRF)
   b. Specification Sequence Listing on:
      i. ☐ CD-ROM (2 copies) or CD-R (2 copies) **or**
      ii. ☐ paper
   c. ☐ Statements verifying identity of above copies.

9. ☐ A copy of any disclaimer, certificate of correction or reexamination certificate issued in the patent is included.

10. ■ Reexamination of claim(s) 1, 2, 4, 8, and 9 is requested.

11. ☐ A copy of every patent or printed publication relied upon is submitted herewith including a listing thereof on Form PTO/SB/08, PTO-1449, or equivalent.

12. ☐ An English language translation of all necessary and pertinent non-English language patents and/or printed publications is attached.

13. ■ The attached detailed request includes at least the following items:
   a. A statement identifying each substantial new question of patentability based on prior patents and printed publications. 37 CFR 1.510(b)(1).
   b. An identification of every claim for which reexamination is requested, and a detailed explanation of the pertinency and manner of applying the cited art to every claim for which reexamination is requested. 37 CFR1.510(b)(2).

14. ☐ A proposed amendment is included (only where the patent owner is the requester). 37 CFR 1.510(e).

15. ■ It is certified that the statutory estoppel provisions of 35 U.S.C. 315(e)(1) or 35 U.S.C. 325(e)(1) do not prohibit requester from filing this *ex parte* reexamination request. 37 CFR 1.510(b)(6).

16. Service
   a. ■ It is certified that a copy of this request (if filed by other than the patent owner) has been served in its entirety on the patent owner as provided in 37 CFR 1.33(c).

      The name and address of the party served are:

      Kilpatrick Townsend & Stockton LLP (I)

      Mailstop: IP Docketing – 22

      1100 Peachtree Street, Suite 2800, Atlanta, GA 30309

      Date of Service: June 23, 2022

   OR

   b. ☐ A duplicate copy is enclosed since service on patent owner was not possible. An explanation of the efforts made to serve patent owner **is attached**. See MPEP 2220.

17. Correspondence Address: Direct all communication about the reexamination to:

☒ The address associated with Customer Number: 67395

OR

☐ Firm or Individual Name _____
(at the address identified below)

Address

City	State	Zip

Country

Telephone	Email

18. ☐ The patent is currently the subject of the following concurrent proceeding(s):

a. ☐ Copending reissue Application No. _____

b. ☐ Copending reexamination Control No. _____

c. ☐ Copending Interference No. _____

d. ☐ Copending litigation styled:

_____

_____

WARNING : Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

/Andrew R. Sommer/ — Authorized Signature

June 23, 2022 — Date

Andrew R. Sommer — Typed/Printed Name

53,932 — Registration No.

☐ For Patent Owner Requester ☒ For Third Party Requester

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re patent of Rikard M. Kjellberg *et al.*	§	Attorney Docket No.: 185945.011700
	§	
U.S. Patent No. 7,233,790	§	Customer No.: 67395
	§	
Issue Date: June 19, 2007	§	
	§	
Filing Date: June 19, 2003	§	
	§	
For: DEVICE CAPABILITY BASED DISCOVERY PACKAGING AND PROVISIONING OF CONTENT FOR WIRELESS MOBILE DEVICES	§	

REQUESTER'S POWER OF ATTORNEY
PURSUANT TO 37 C.F.R. § 1.510(f)

Pursuant to 37 CFR 1.510(f) Requester, **Unified Patents, LLC**, hereby appoints the Practitioner(s) associated with **Customer Number 67395**, as its attorney(s) to prosecute and to transact all business in the United States Patent and Trademark Office in connection with the above-identified request for *Ex Parte* Reexamination. Please recognize the correspondence address (including any electronic mail address) associated with **Customer Number 67395** for the above-identified *Ex Parte* Reexamination proceeding number to be the address associated with the appointed counsel(s).

The undersigned is authorized to sign this Power of Attorney on behalf of the Requester.

Executed on June 21, 2022

Unified Patents, LLC

By: Jonathan Stroud

Printed Name: Jonathan Stroud

Title: General Counsel

PTO/SB/08a (01-22)
Approved for use through 05/31/2024. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT
(Not for submission under 37 CFR 1.99)

Application Number	
Filing Date	2022-06-17
First Named Inventor	Rikard M. Kjellberg
Art Unit	
Examiner Name	
Attorney Docket Number	185945.011700

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	6035339	A	2000-03-07	Agraharam et al.	
	2	6421726	B1	2002-07-16	Kenner et al.	
	3	6345279	B1	2002-02-05	Li et al.	
	4	7551913	B1	2009-06-23	Chien	
	5					

If you wish to add additional U.S. Patent citation information please click the Add button. Add

U.S.PATENT APPLICATION PUBLICATIONS Remove

Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20020078178	A1	2002-20-06	Senoh	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	
	Filing Date	2022-06-17
	First Named Inventor	Rikard M. Kjellberg
	Art Unit	
	Examiner Name	
	Attorney Docket Number	185945.011700

	2	20010032335	A1	2001-10-18	Jones			

If you wish to add additional U.S. Published Application citation information please click the Add button. Add

FOREIGN PATENT DOCUMENTS Remove

Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] i	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1							

If you wish to add additional Foreign Patent Document citation information please click the Add button Add

NON-PATENT LITERATURE DOCUMENTS Remove

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1	K. H. Britton, et al., Transcoding: Extending e-business to new environments, IBM Systems J., Vol. 40, No. 1 (2001), pp.153-178	
	2	Andrew Perkis, et al., Universal Multimedia Access from Wired and Wireless Systems, Circuits Systems Signal Processing, Vol. 20, No. 3 (2001), pp.387-402	
	3	Rakesh Mohan, et al., Adapting Multimedia Internet Content for Universal Access, IEEE Transactions on Multimedia, Vol. 1, No. 1, (March 1999), pp.104-114.	
	4	Excepts from Image File Wrapper of U.S. Patent Application No. 10/600,746	
	5	Declaration of A.L. Narasimha Reddy, Ph.D.	

If you wish to add additional non-patent literature document citation information please click the Add button Add

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99)**		
	Application Number	
	Filing Date	2022-06-17
	First Named Inventor	Rikard M. Kjellberg
	Art Unit	
	Examiner Name	
	Attorney Docket Number	185945.011700

EXAMINER SIGNATURE			
Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	
	Filing Date	2022-06-17
	First Named Inventor	Rikard M. Kjellberg
	Art Unit	
	Examiner Name	
	Attorney Docket Number	185945.011700

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Andrew R. Sommer/	Date (YYYY-MM-DD)	2022-06-23
Name/Print	Andrew R. Sommer	Registration Number	53,932

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US007233790B2

(12) **United States Patent**
Kjellberg et al.

(10) **Patent No.: US 7,233,790 B2**
(45) **Date of Patent: Jun. 19, 2007**

(54) **DEVICE CAPABILITY BASED DISCOVERY, PACKAGING AND PROVISIONING OF CONTENT FOR WIRELESS MOBILE DEVICES**

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(73) Assignee: **Openwave Systems, Inc.**, Redwood City, CA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 753 days.

(21) Appl. No.: **10/600,746**

(22) Filed: **Jun. 19, 2003**

(65) **Prior Publication Data**

US 2004/0054786 A1 Mar. 18, 2004

Related U.S. Application Data

(60) Provisional application No. 60/393,024, filed on Jun. 28, 2002, provisional application No. 60/392,383, filed on Jun. 28, 2002, provisional application No. 60/393,041, filed on Jun. 28, 2002, provisional application No. 60/392,999, filed on Jun. 28, 2002.

(51) **Int. Cl.**
H04M 3/00 (2006.01)

(52) **U.S. Cl.** **455/419**; 455/418; 455/414.1

(58) **Field of Classification Search** 455/419, 455/418, 414.1

See application file for complete search history.

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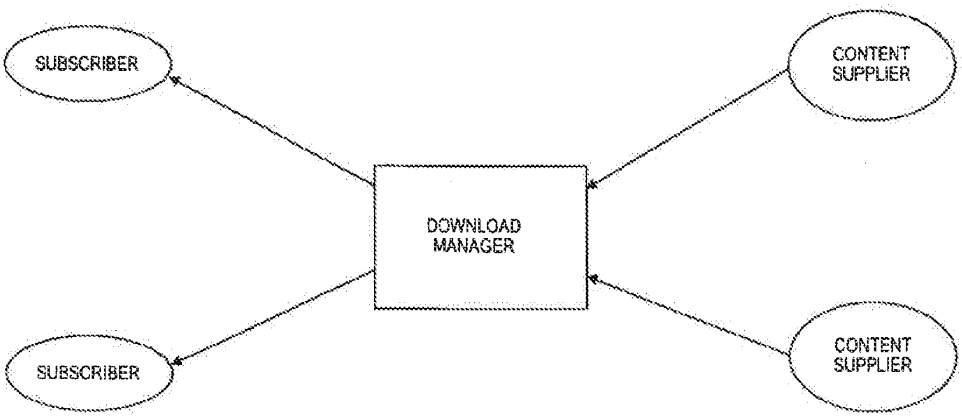
Primary Examiner—Creighton Smith
(74) *Attorney, Agent, or Firm*—Blakely Sokoloff Taylor & Zafman LLP

(57) **ABSTRACT**

A network server system includes a download manager that manages the publication, purchase and delivery of digital products from multiple suppliers to wireless services subscribers in multiple domains. Product suppliers can publish and manage their products on the server system via a computer network and make their products available to the subscribers for purchase or licensing. The subscribers in each domain can access the server remotely to purchase rights to download and use the products on associated wireless communication devices. Multiple different implementations of any product can be maintained, where each implementation corresponds to a different set of device capabilities. Each product can also be associated with multiple different provisioning models, each corresponding to a different set of device capabilities.

14 Claims, 14 Drawing Sheets



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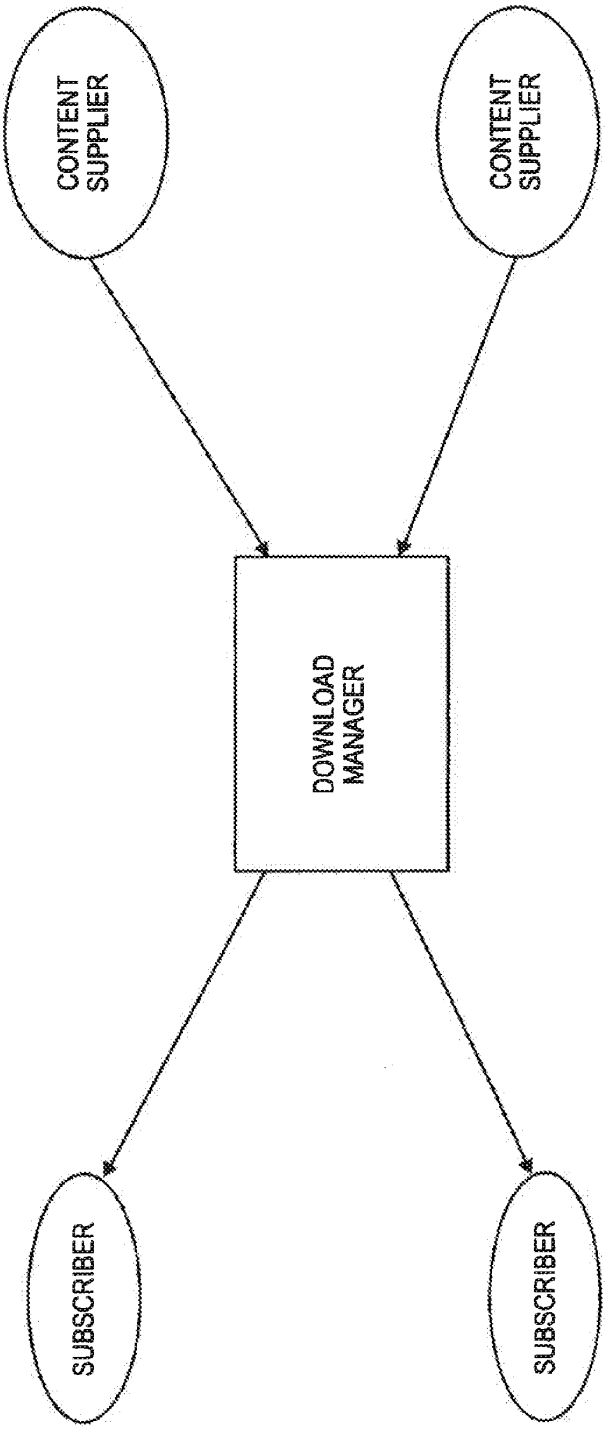
CONTENT SUPPLIER
CONTENT SUPPLIER
DOWNLOAD MANAGER
SUBSCRIBER
SUBSCRIBER

FIG. 1

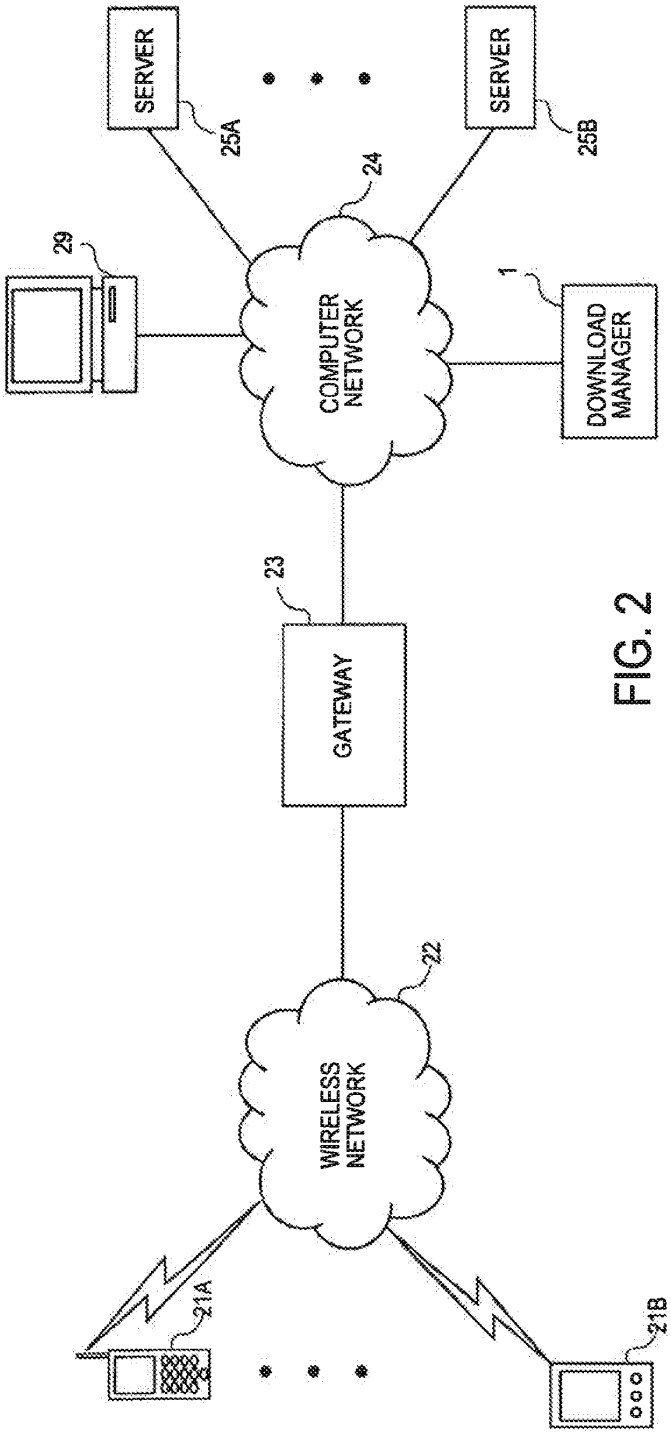
SERVER
25A
SERVER
25B
24
29
COMPUTER NETWORK
1
DOWNLOAD MANAGER
23
GATEWAY
22
WIRELESS NETWORK
21A
21B

FIG. 2

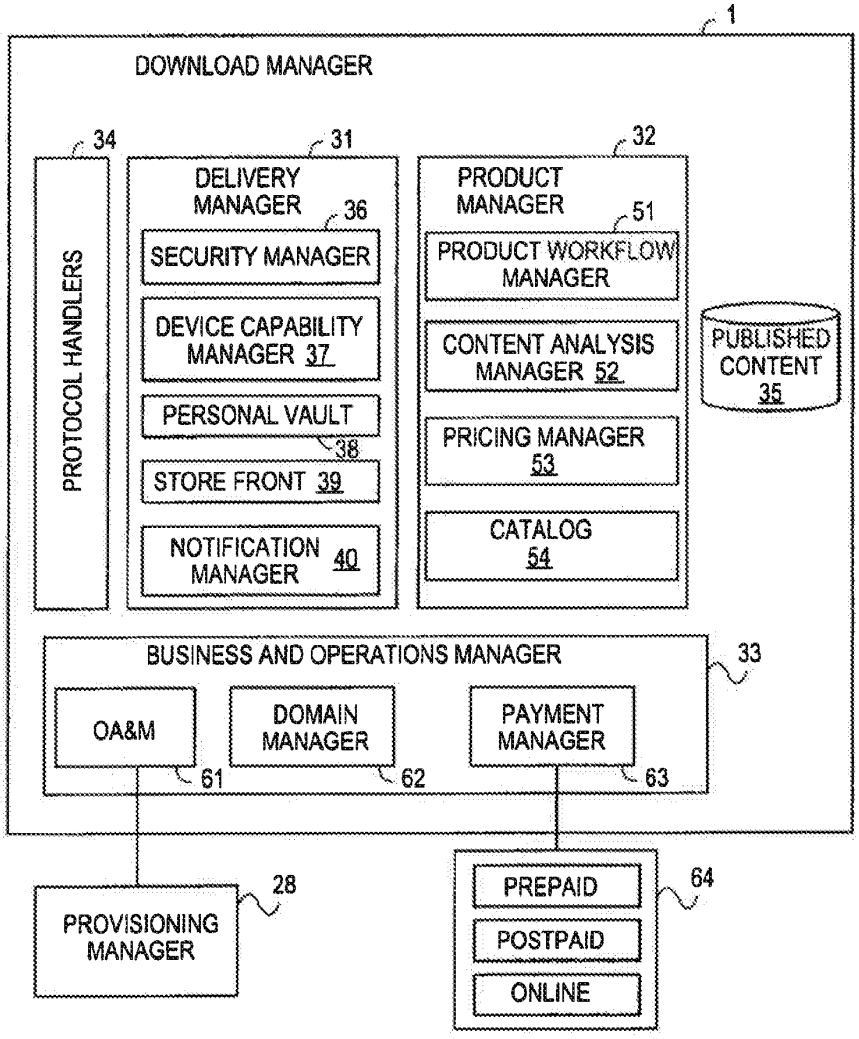
1
DOWNLOAD MANAGER
34
PROTOCOL HANDLERS
31
DELIVERY MANAGER
36
SECURITY MANAGER
DEVICE CAPABILITY MANAGER 37
PERSONAL VAULT
38
STORE FRONT 39
NOTIFICATION MANAGER 40
32
PRODUCT MANAGER
51
PRODUCT WORKFLOW MANAGER
CONTENT ANALYSIS MANAGER 52
PRICING MANAGER 53
CATALOG 54
PUBLISHED CONTENT 35
BUSINESS AND OPERATIONS MANAGER
33
OA&M
61
DOMAIN MANAGER
62
PAYMENT MANAGER
63
28
PROVISIONING MANAGER
PREPAID
POSTPAID
ONLINE
64

FIG. 3

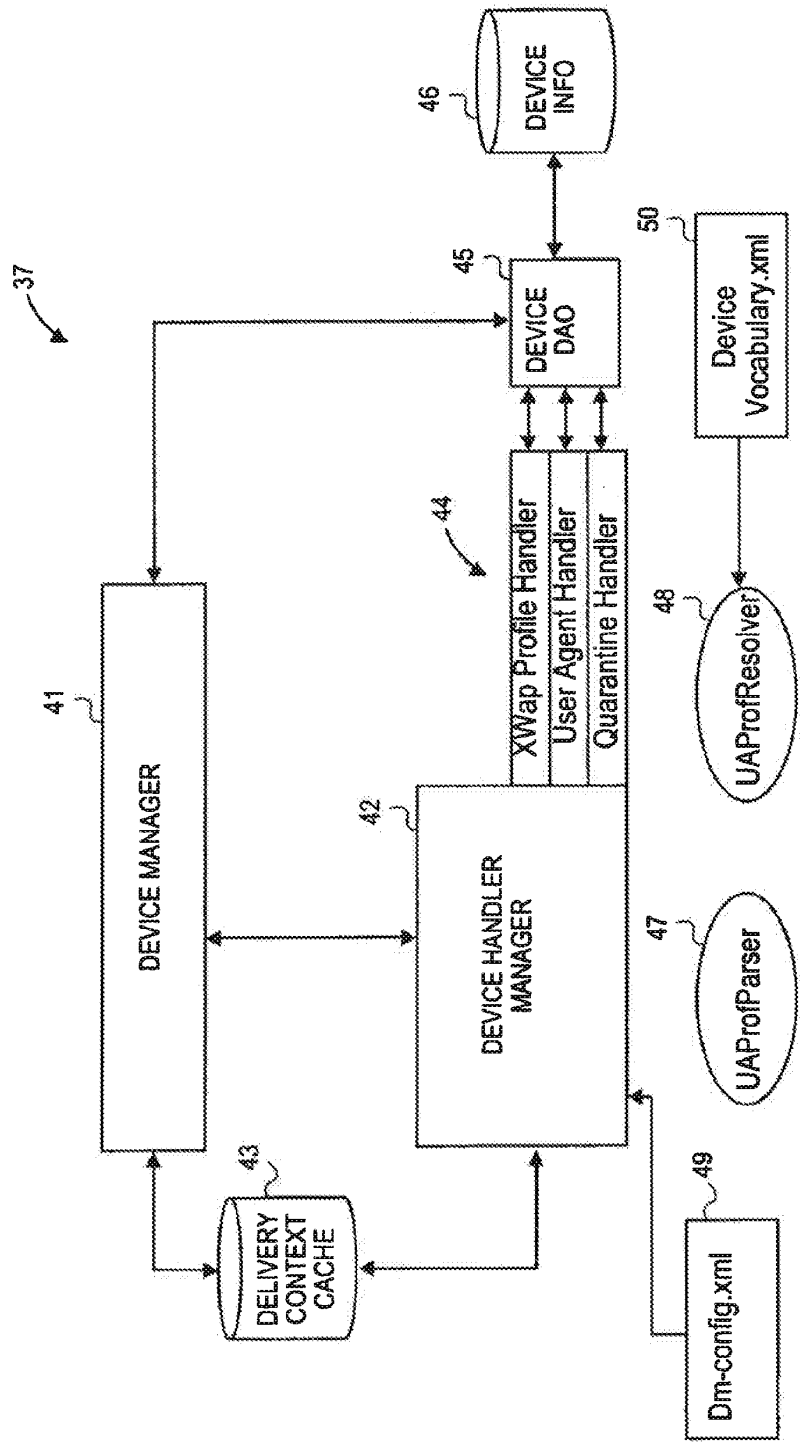
37
41
DEVICE MANAGER
42
DEVICE HANDLER MANAGER
43
DELIVERY CONTEXT CACHE
44
XWap Profile Handler
User Agent Handler
Quarantine Handler
45
DEVICE DAO
46
DEVICE INFO
47
UAProfParser
48
UAProfResolver
49
Dm-config.xml
50
Device Vocabulary.xml

FIG. 4

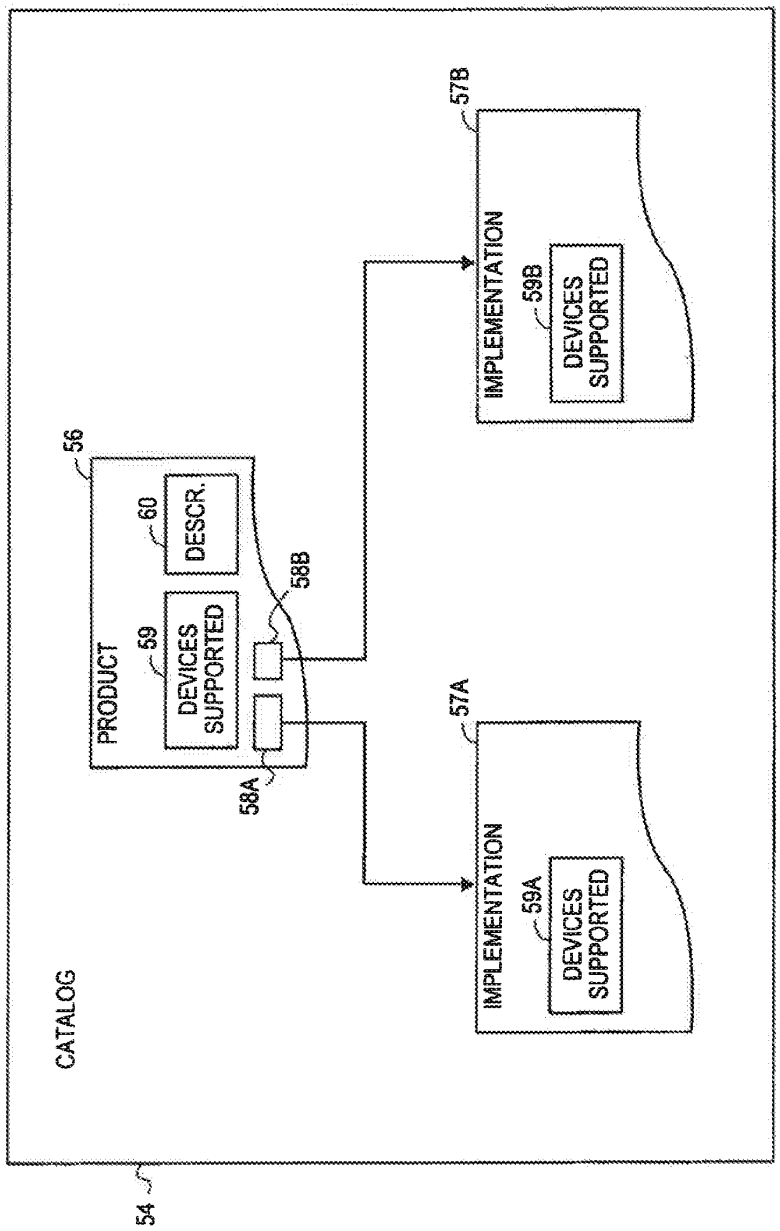
CATALOG
54
PRODUCT
56
DEVICES SUPPORTED
59
DESCR.
60
58A
58B
IMPLEMENTATION
57A
59A
DEVICES SUPPORTED
IMPLEMENTATION
57B
59B
DEVICES SUPPORTED

FIG. 5

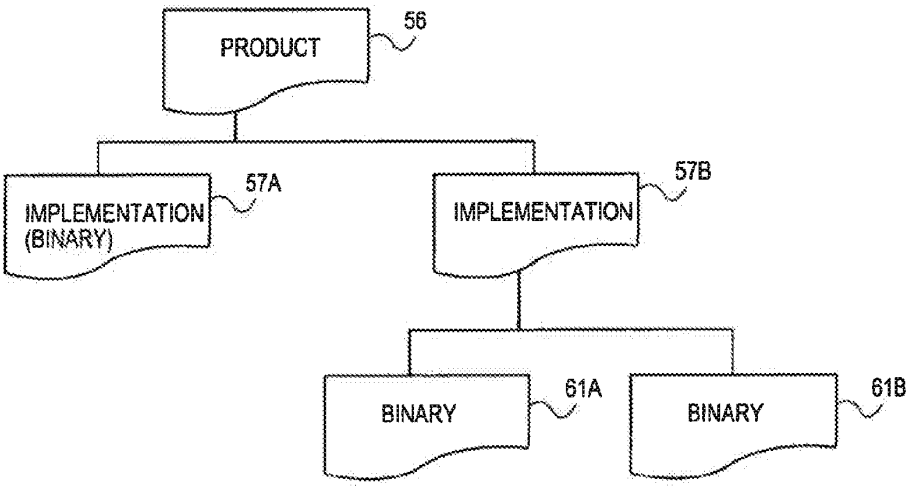
PRODUCT
56
IMPLEMENTATION (BINARY)
57A
IMPLEMENTATION
57B
BINARY
61A
BINARY
61B

FIG. 6

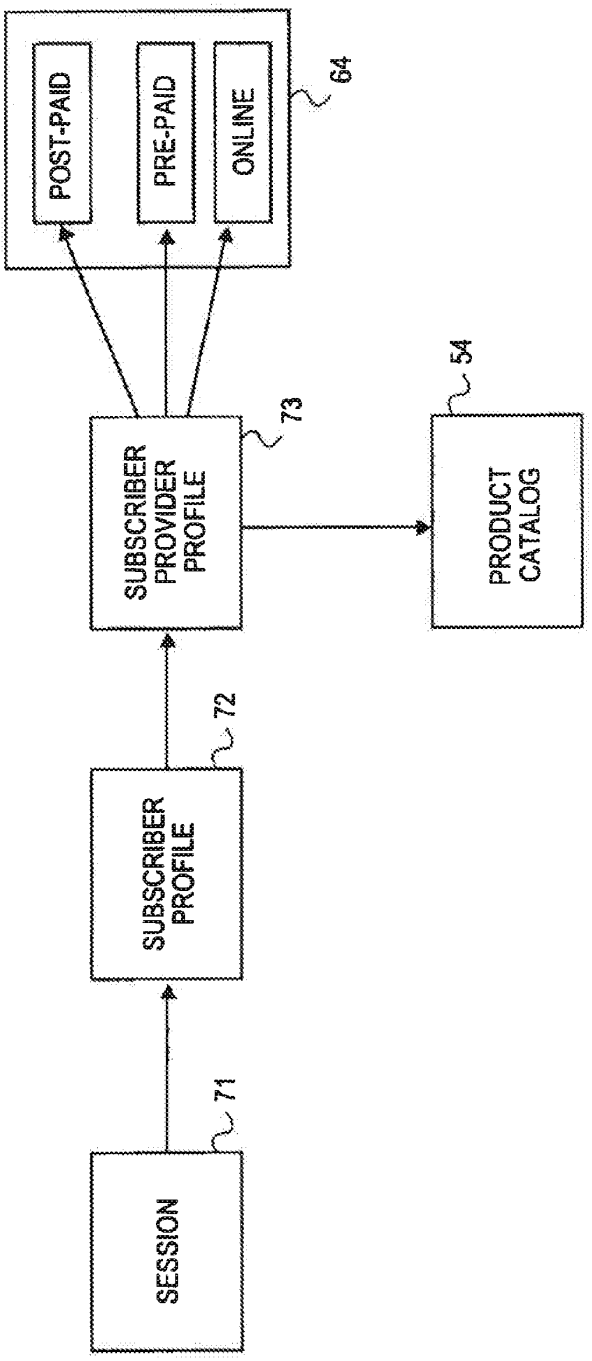
POST-PAID
PRE-PAID
ONLINE
64
SUBSCRIBER PROVIDER PROFILE
73
54
PRODUCT CATALOG
SUBSCRIBER PROFILE
72
SESSION
71

FIG. 7

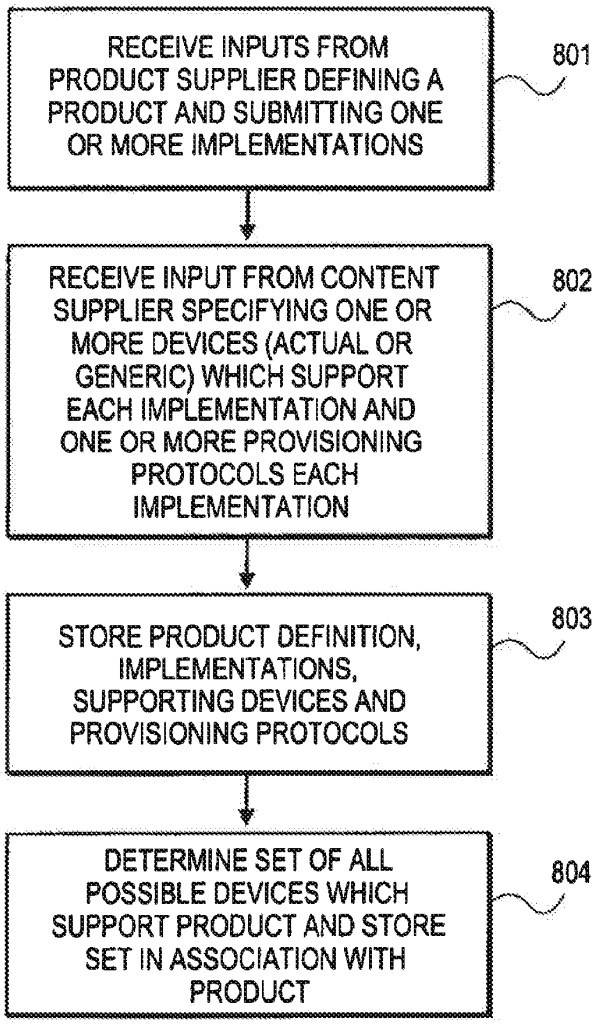
RECEIVE INPUTS FROM PRODUCT SUPPLIER DEFINING A PRODUCT AND SUBMITTING ONE OR MORE IMPLEMENTATIONS
801
RECEIVE INPUT FROM CONTENT SUPPLIER SPECIFYING ONE OR MORE DEVICES (ACTUAL OR GENERIC) WHICH SUPPORT EACH IMPLEMENTATION AND ONE OR MORE PROVISIONING PROTOCOLS EACH IMPLEMENTATION
802
STORE PRODUCT DEFINITION, IMPLEMENTATIONS, SUPPORTING DEVICES AND PROVISIONING PROTOCOLS
803
DETERMINE SET OF ALL POSSIBLE DEVICES WHICH SUPPORT PRODUCT AND STORE SET IN ASSOCIATION WITH PRODUCT
804

FIG. 8

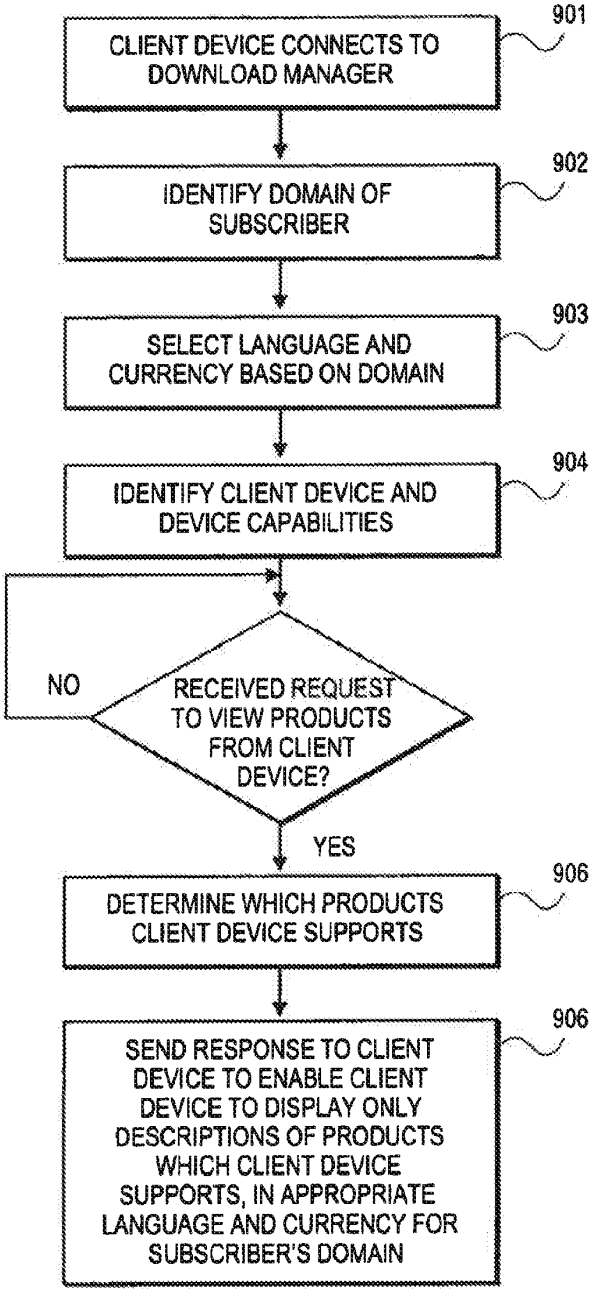
CLIENT DEVICE CONNECTS TO DOWNLOAD MANAGER
901
IDENTIFY DOMAIN OF SUBSCRIBER
902
SELECT LANGUAGE AND CURRENCY BASED ON DOMAIN
903
IDENTIFY CLIENT DEVICE AND DEVICE CAPABILITIES
904
RECEIVED REQUEST TO VIEW PRODUCTS FROM CLIENT DEVICE?
NO
YES
DETERMINE WHICH PRODUCTS CLIENT DEVICE SUPPORTS
906
SEND RESPONSE TO CLIENT DEVICE TO ENABLE CLIENT DEVICE TO DISPLAY ONLY DESCRIPTIONS OF PRODUCTS WHICH CLIENT DEVICE SUPPORTS, IN APPROPRIATE LANGUAGE AND CURRENCY FOR SUBSCRIBER'S DOMAIN
906

FIG. 9

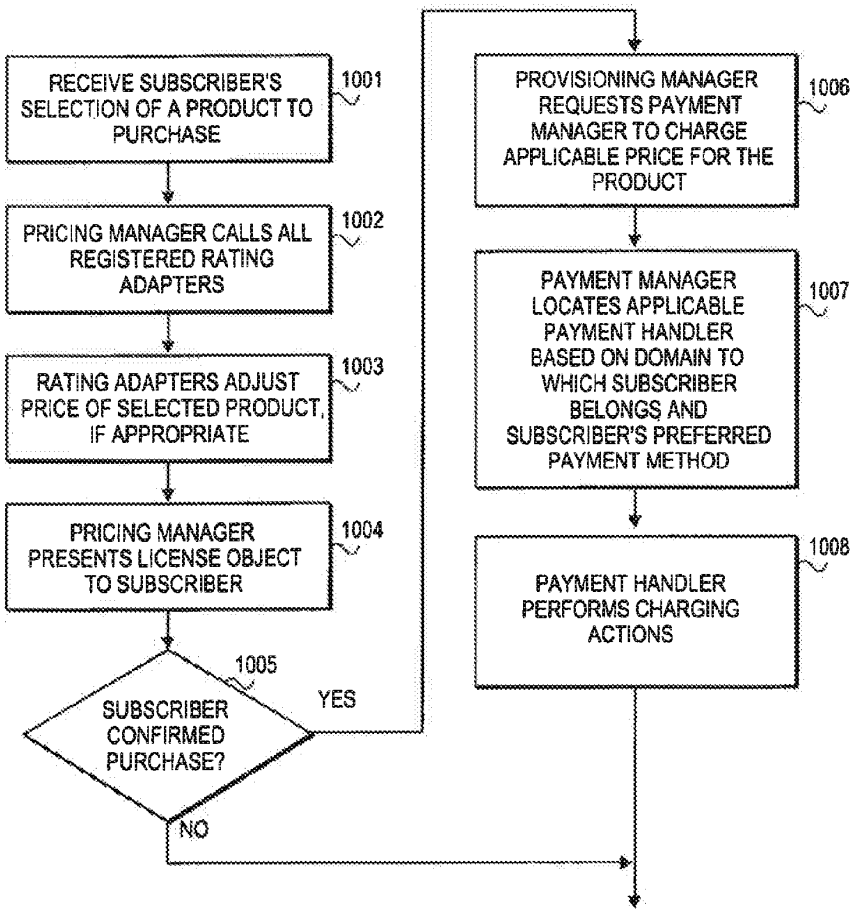
RECEIVE SUBSCRIBER'S SELECTION OF A PRODUCT TO PURCHASE
1001
PRICING MANAGER CALLS ALL REGISTERED RATING ADAPTERS
1002
RATING ADAPTERS ADJUST PRICE OF SELECTED PRODUCT, IF APPROPRIATE
1003
PRICING MANAGER PRESENTS LICENSE OBJECT TO SUBSCRIBER
1004
1005
SUBSCRIBER CONFIRMED PURCHASE?
YES
NO
PROVISIONING MANAGER REQUESTS PAYMENT MANAGER TO CHARGE APPLICABLE PRICE FOR THE PRODUCT
1006
PAYMENT MANAGER LOCATES APPLICABLE PAYMENT HANDLER BASED ON DOMAIN TO WHICH SUBSCRIBER BELONGS AND SUBSCRIBER'S PREFERRED PAYMENT METHOD
1007
PAYMENT HANDLER PERFORMS CHARGING ACTIONS
1008

FIG. 10

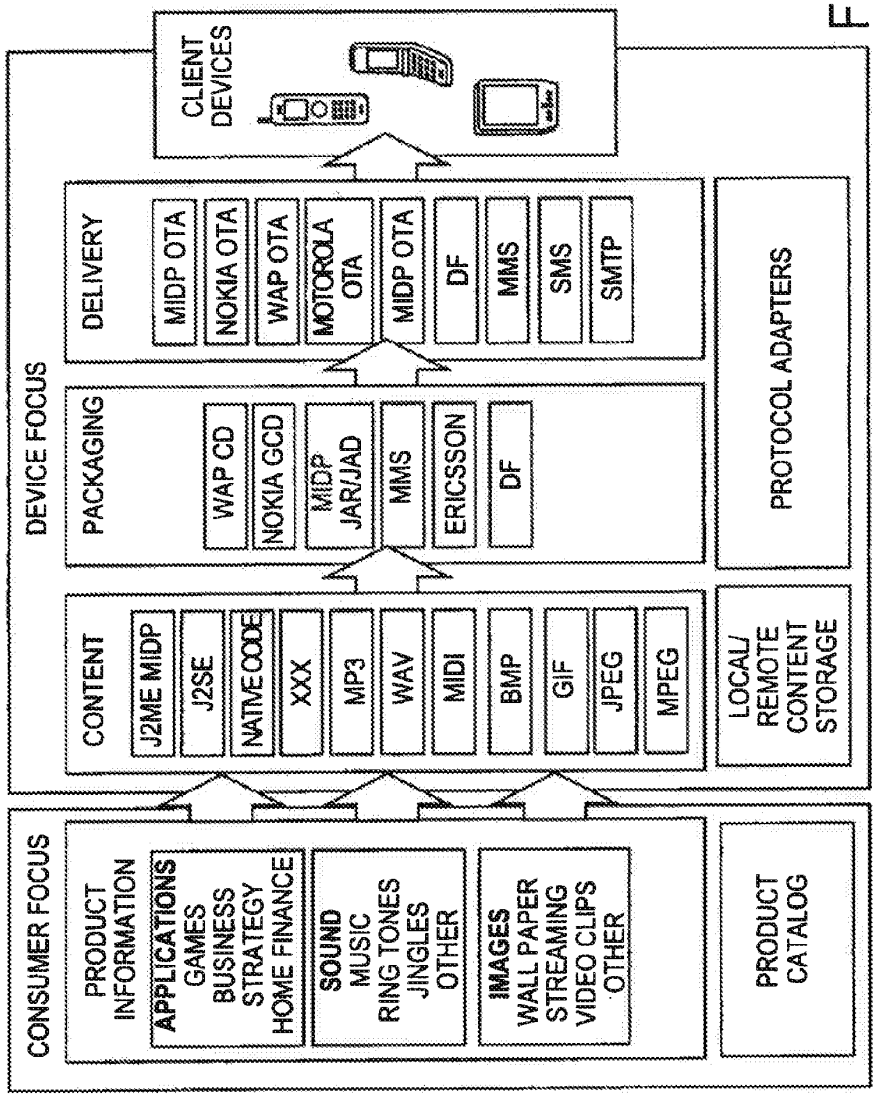
CONSUMER FOCUS
PRODUCT INFORMATION
APPLICATIONS
GAMES
BUSINESS
STRATEGY
HOME FINANCE
SOUND
MUSIC
RING TONES
JINGLES
OTHER
IMAGES
WALL PAPER
STREAMING
VIDEO CLIPS
OTHER
PRODUCT CATALOG
DEVICE FOCUS
CONTENT
J2ME MIDP
J2SE
NATIVE CODE
XXX
MP3
WAV
MIDI
BMP
GIF
JPEG
MPEG
LOCAL/ REMOTE CONTENT STORAGE
PACKAGING
WAP CD
NOKIA GCD
MIDP JAR/JAD
MMS
ERICSSON
DF
DELIVERY
MIDP OTA
NOKIA OTA
WAP OTA
MOTOROLA OTA
MIDP OTA
DF
MMS
SMS
SMTP
PROTOCOL ADAPTERS
CLIENT DEVICES

FIG. 11

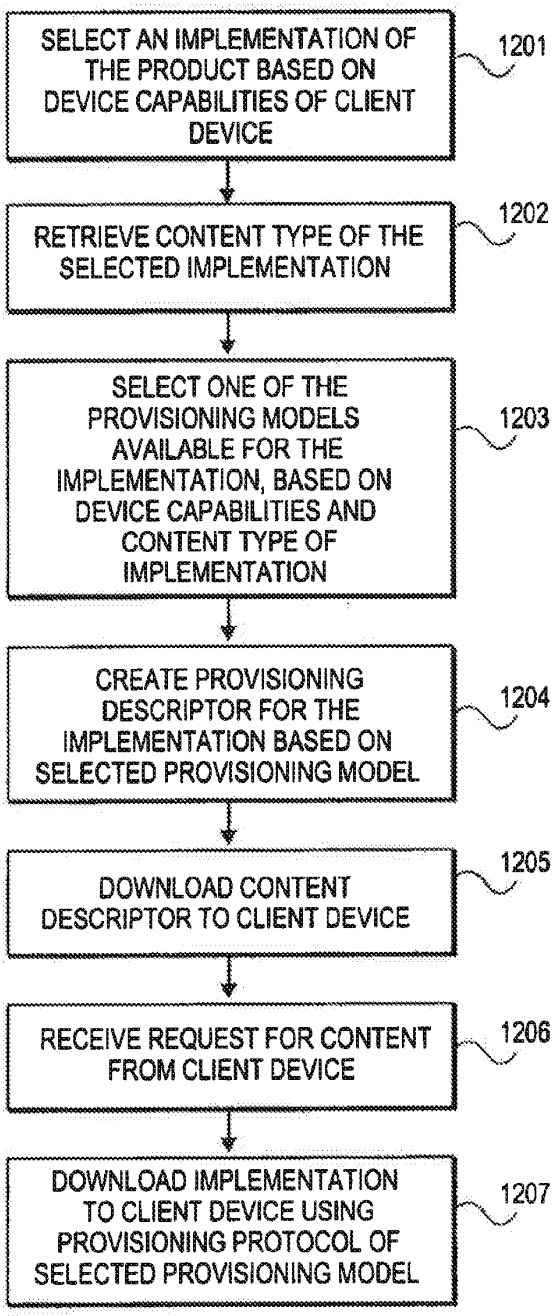
SELECT AN IMPLEMENTATION OF THE PRODUCT BASED ON DEVICE CAPABILITIES OF CLIENT DEVICE
1201
RETRIEVE CONTENT TYPE OF THE SELECTED IMPLEMENTATION
1202
SELECT ONE OF THE PROVISIONING MODELS AVAILABLE FOR THE IMPLEMENTATION, BASED ON DEVICE CAPABILITIES AND CONTENT TYPE OF IMPLEMENTATION
1203
CREATE PROVISIONING DESCRIPTOR FOR THE IMPLEMENTATION BASED ON SELECTED PROVISIONING MODEL
1204
DOWNLOAD CONTENT DESCRIPTOR TO CLIENT DEVICE
1205
RECEIVE REQUEST FOR CONTENT FROM CLIENT DEVICE
1206
DOWNLOAD IMPLEMENTATION TO CLIENT DEVICE USING PROVISIONING PROTOCOL OF SELECTED PROVISIONING MODEL
1207

FIG. 12

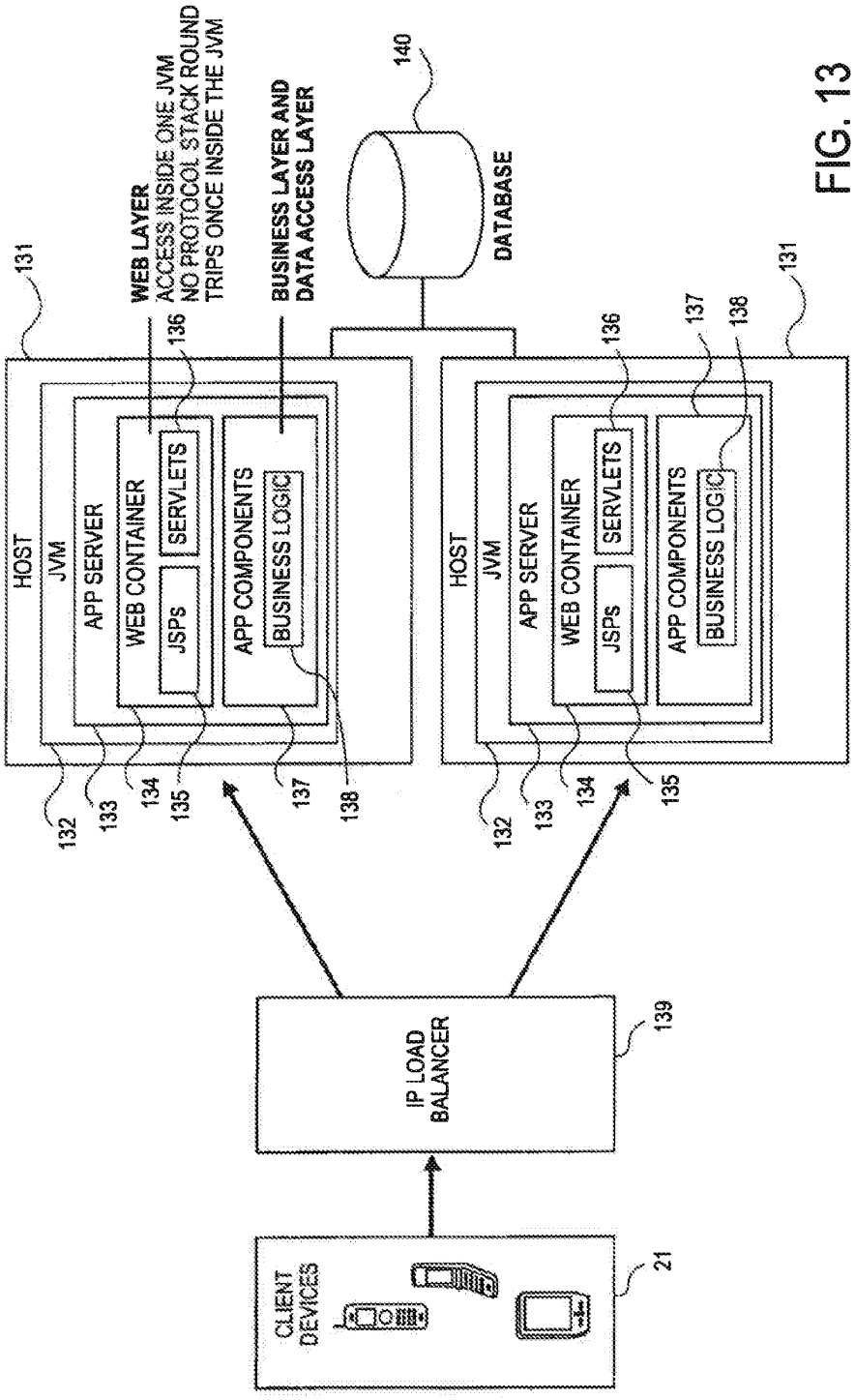
WEB LAYER
ACCESS INSIDE ONE JVM
NO PROTOCOL STACK ROUND
TRIPS ONCE INSIDE THE JVM
BUSINESS LAYER AND
DATA ACCESS LAYER
DATABASE
140
131
HOST
JVM
APP SERVER
WEB CONTAINER
JSPs
SERVLETS
APP COMPONENTS
BUSINESS LOGIC
136
137
138
132
133
134
135
IP LOAD
BALANCER
139
CLIENT
DEVICES
21

FIG. 13

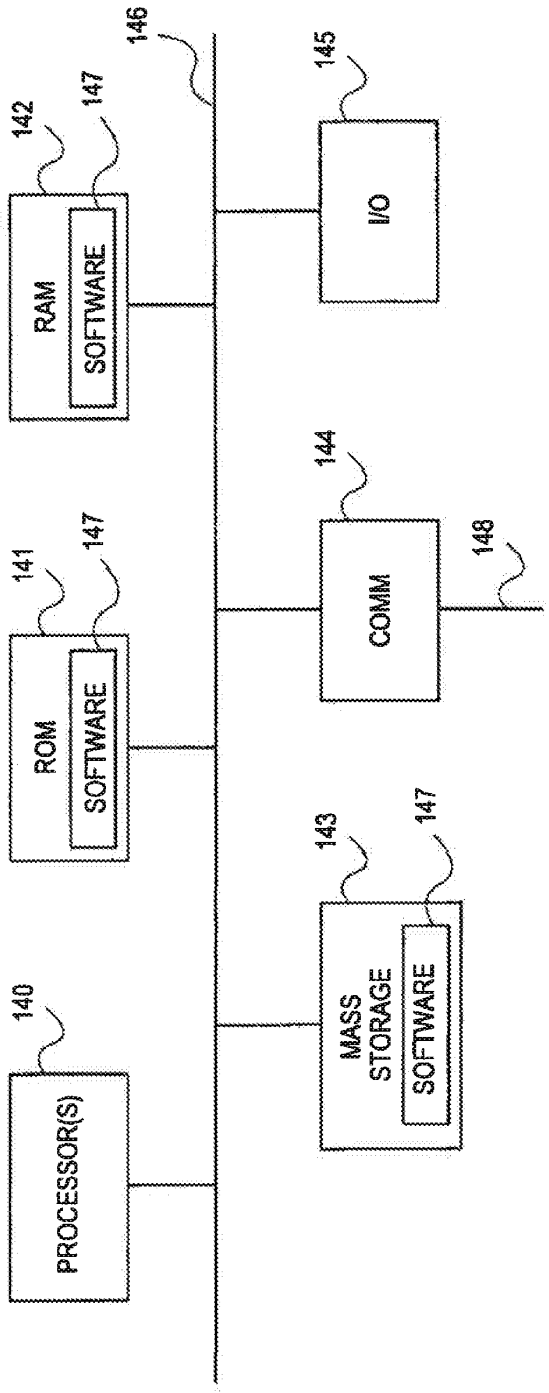
146
145
142
147
RAM
SOFTWARE
I/O
144
141
147
148
ROM
SOFTWARE
COMM
143
147
140
MASS
STORAGE
SOFTWARE
PROCESSOR(S)

FIG. 14

DEVICE CAPABILITY BASED DISCOVERY, PACKAGING AND PROVISIONING OF CONTENT FOR WIRELESS MOBILE DEVICES

This application claims the benefit of U.S. provisional patent applications Nos.: 60/393,024; 60/392,383; 60/393,041; and 60/392,999, each of which was filed on Jun. 28, 2002, and each of which is incorporated herein by reference.

FIELD OF THE INVENTION

At least one embodiment of the present invention pertains to systems and methods for providing digital content to wireless services subscribers, and more particularly, to facilitating management and delivery of digital content from multiple content suppliers to multiple wireless services subscribers in multiple domains.

BACKGROUND

Personal mobile communication/computing devices, such as cellular telephones, personal digital assistants (PDAs) and two-way pagers, have become commonplace in many countries. These devices are referred to collectively herein as "mobile devices" or "wireless devices". The current state-of-the-art of mobile devices has advanced far beyond that of their predecessors. For example, early cellular telephones were used analog signals to communicate over wireless telecommunications networks (or simply "wireless networks") and were nothing more than mobile telephones. Today's cellular telephones typically are all digital and provide many other functions in addition to telephony capability. For example, many of the latest generation of mobile telephones (and other mobile devices) allow their users to play games, access World Wide Web pages, exchange email, exchange and download files, exchange short messaging service (SMS) messages, and send and receive video.

With new mobile devices providing a wider range of capabilities, there is increasing demand among the users of these devices (i.e., wireless services subscribers) for new and interesting types of digital content that can be used on these mobile devices, such as games and other applications, images, ring tones, screensavers, wallpapers, etc. Although newer mobile devices often come pre-provisioned with certain digital products when first acquired by the subscriber, it is desirable to allow subscribers to acquire additional digital products for use in their mobile devices as such products become available. While this capability already exists, currently subscribers acquire digital content directly from the content suppliers (typically via the wireless network and the Internet). This process is inconvenient if a subscriber wishes to acquire various different items of digital content from different suppliers, since the subscriber must navigate to the web sites of different suppliers. Therefore, it is further desirable to make many different types of digital content available to subscribers at one time through a centralized "store".

From the content supplier's perspective, another impediment to the efficient distribution of digital content is the fact that different mobile devices often require different content packaging formats and provisioning protocols. In order to make a given item of digital content available to multiple mobile devices supporting different provisioning models, a digital content supplier will normally deploy that item of content multiple times, packaging it differently for each of the provisioning models. For example, an image to be delivered to Nokia-COD phones and Sprint-QCD OTA phones would be deployed twice, custom-packaged for each of those two delivery modes. It is very burdensome for digital content suppliers to have to package and provision the digital content they produce in a manner that is suitable for all of the devices in the marketplace. Moreover, it is difficult for content suppliers to keep up with the constant changes in device capabilities for the many mobile devices in the marketplace. Consequently, there is often a gap between the interoperability of a given digital product and how effective it can be used on a device. Therefore, the problem exists of how to efficiently allow many digital content providers to distribute many different types of digital content to subscribers using many different types of mobile devices.

A related problem is how to charge subscribers for the digital content they acquire. In one known system, the wireless carrier's system is capable of connecting to an external billing system and provides billing events to that system when a subscriber performs a chargeable action. However, this scenario assumes that all subscribers belong to a single organization that also owns the billing system. Furthermore, it assumes that a single currency is used. Yet many multi-national organizations have a parent company with subsidiaries in many countries. Different countries have different currencies, taxes and other charges. Each subsidiary may implement its own support/business infrastructure to deal with local regulations and customs, particularly with respect to the billing process. Consequently, the carrier's system must be able to generate billing events and direct them to the appropriate external billing system. Furthermore, it must be able to present the customer with a charge for each service, in the applicable currency and expressed in a way that is appropriate considering local taxes, fees and other regulations.

One way to address this problem, which only partially solves it, is to use credit card systems. In this scenario, the credit card company acts as an intermediary in the billing process. This approach consolidates all billing at one point. Settlement is done between the product/service provider and the subscriber provider (e.g., the wireless carrier) for a fee. This approach, however, does not handle the currency, taxes, fees and regulations issues mentioned above.

SUMMARY OF THE INVENTION

One aspect of the invention is a method and apparatus for providing access to content for use on wireless communication devices. Multiple items of content are stored in a server system, to be made available for use in wireless communication devices used by multiple wireless services subscribers. Each of the items of content is associated in the server system with multiple different provisioning models for provisioning the content in wireless communication devices. Each of the provisioning models corresponds to a different set of device capabilities.

In another aspect of the invention, multiple different implementations of at least one of the items of content are received, where each implementation corresponds to a different set of device capabilities. A product catalog containing a description of the items of content is also maintained. The product catalog includes, in association with each item of content, a reference to each implementation of the item of content.

Other features of the present invention will be apparent from the accompanying drawings and from the detailed description which follows.

BRIEF DESCRIPTION OF THE DRAWINGS

One or more embodiments of the present invention are illustrated by way of example and not limitation in the figures of the accompanying drawings, in which like references indicate similar elements and in which:

FIG. **1** illustrates the relationship between the download manager, content suppliers, and subscribers;

FIG. **2** shows a network architecture in which a download manager in accordance with the invention can be deployed;

FIG. **3** schematically shows the components of the download manager;

FIG. **4** shows the components of the device capability manager;

FIG. **5** shows the relationship between a product entry and implementations of the product in the product catalog;

FIG. **6** shows the relationship between a product and its implementations;

FIG. **7** shows how various data elements are used in the billing process;

FIG. **8** illustrates a simplified process by which a product can be listed in the product catalog in a way that facilitates device-tailored product discovery and provisioning;

FIG. **9** shows a process by which the product catalog is displayed to a subscriber;

FIG. **10** shows a process by which a purchase of a product can be made using the download manager;

FIG. **11** illustrates the separation, within the download manager, of content from how the content is provisioned;

FIG. **12** illustrates a process by which a product is provisioned in a client device using the appropriate one of various provisioning protocols;

FIG. **13** shows an example of the software deployment architecture of the download manager; and

FIG. **14** illustrates the hardware architecture of a computer system in which the download manager can be implemented.

DETAILED DESCRIPTION

A system and method for efficiently managing the publication, purchase and delivery of digital content from multiple content suppliers to multiple wireless services subscribers in multiple domains are described below. As used in this description, the terms "digital content", "digital product", "content", and "product" are used interchangeably and mean software and/or data embodying things such as games and other applications, applets or the like; images; screensavers; wallpaper; ring tones; etc., particularly (but not necessarily exclusively) those designed for use in mobile devices such as cellular telephones, personal digital assistants (PDAs), and other small-footprint wireless/mobile devices. For convenience the terms "purchase" or "buy" are used to mean either actual purchase or any other conventional way in which a subscriber can acquire rights to use digital content (e.g., by acquiring a license).

Overview

As described in greater detail below, a system which manages publication, purchase and delivery of digital content is implemented in a network server system that includes one or more server computer systems on a network. The server system includes an application server referred to herein as the "download manager". Digital content suppliers can publish and manage their products using the download manager via a computer network, such as the Internet, and can make their products available to wireless services subscribers through the download manager for purchase or licensing. Subscribers can access the server system via wireless networks to purchase rights to download and use the digital content on their wireless communication devices.

FIG. **1** illustrates the relationship between the download manager, content suppliers, and wireless services subscribers (users of mobile devices). The download manager **1** acts as an intermediary between multiple content suppliers **2** (e.g., **2**A, **2**B, etc.) and multiple customers (e.g., **3**A, **3**B, etc.), e.g., wireless services subscribers, belonging to multiple "domains". In the supply chain process for distribution of digital content, a content supplier **2** adds a digital product to the set of products managed by the download manager **1** (i.e., products "in the store"). The supplier **2** then associates various attributes with the product. Once the product has been submitted to the product store, a product administrator associated with the download manager **1** verifies its quality and determines whether it should be made available to the customers **2** or if it should be rejected. Once the product is approved, customers **2** can buy the product by accessing the download manager **1** from their client devices.

To facilitate description, it is henceforth assumed herein that the customers are users of mobile devices and, therefore, are subscribers of wireless services (although that need not be the case); thus, customers are henceforth called "subscribers" herein. Note, however, that the techniques described herein need not be limited to wireless services subscribers or mobile client devices.

Domains and Partner Management

Among other advantageous features, the download manager **1** facilitates partner management. A "partner", as the term is used herein, is an entity that holds a relationship to a subscriber for purposes of delivery of digital products, billing, returns, etc. For example, a partner can be an Internet portal, an Internet Service Provider (ISP), a wireless carrier, an application service provider (ASP), etc. A partner also appoints a number of content suppliers to supply products to the product store. Partner management is the concept of being able to assign responsibility for various parts of the digital product supply chain to different categories of users.

The entities "within the store" (managed by the download manager **1**) belonging to a partner are partitioned into entities called "domains". A "domain", as the term is used herein, is an entity, defined in the download manager **1**, that describes the billing relationship between a partner and a set of subscribers, as well as describing a partitioning of product space and administrative responsibilities. As such, a domain can represent a grouping of wireless services subscribers, such as a wireless carrier or a subsidiary of a wireless carrier, a business enterprise, or any other defined group of wireless services subscribers. The domain manager maintains a database of data defining the associations between domains and partners, administrators, subscribers and products.

Domains facilitate the proper billing of subscribers from multiple organizations and/or with multiple wireless carriers (or other subscriber providers), and facilitate presentation of product descriptions to subscribers in the languages and currencies appropriate for their local countries or regions.

The domain entity is also used in the download manager **1** to classify other entities as belonging to a domain 1-to-1, belonging to a domain 1-to-many, many-to-many, or not

belonging to a domain. In general, a domain captures the following relationships to the subscribers:

1) how subscribers are charged for the products they purchase and in which currency;
2) to which user groups the subscribers can belong;
3) from which product categories the subscribers can select products; and
4) which products are accessible to the subscribers.

In certain embodiments of the invention, a domain has the following properties:

a name (localized)
a description (localized)
a uniform resource locator (URL) to a web site giving further description of the domain
a contact address including contact person, contact telephone numbers, fax numbers and postal address
the currency to use for billing and display purposes
reference to handlers for various different payment models (e.g., online payment, pre-payment and post-payment)
a set of references to rating handlers used for adjustment of product prices

The name and the descriptions have localized values for the set of languages registered in the system.

The distinction between domain entities and non-domain entities also forms the basis for delegated administration. More specifically, for each domain, the responsibility for supplying products, approving or rejecting products, etc. can be delegated to different suppliers and administrators. Thus, each domain is associated with a set of administrators that handle the products in the store. In certain embodiments of the invention, these administrators include a system administrator, a domain administrator, a product administrator, and a customer care administrator.

The system administrator is the overall administrator for the download manager 1, who can create new domains and their respective domain administrators to help regulate it. He also maintains the ability to control non-domain entities such as devices, content types, etc. The domain administrator is the overall administrator for a given domain. He has the ability to manage all of the suppliers and subscribers for his domain as well as create product and customer care administrators for the domain. The product administrator is responsible for managing the entire product lifecycle for the content submitted by the domain's suppliers. The customer care administrator is responsible for managing subscribers belonging to the domain. Each subscriber belongs to only one domain and can only see products for the domain to which he belongs.

A partner appoints a number of content suppliers who provide products to the product store. A supplier can only submit products to the domain(s) to which he belongs. The relationship between suppliers and domains is many-to-many. Products are approved and deployed separately for each domain.

From the content supplier's perspective, all entities in the download manager 1 that are domain-related are only selectable based on the domains to which the supplier can provide products. For example, a supplier can only choose from among the product categories and license models that belong to the domains to which the supplier has the right to supply products.

Network Environment

FIG. 2 shows a network architecture in which a download manager in accordance with the invention can be advantageously deployed. One or more wireless networks 22 are connected to a computer network 24 through corresponding gateways 23. The computer network 24 may be the Internet, although alternatively, it could be essentially any other type of computer network, such as a corporate intranet, a local area network (LAN), etc., or a combination of such networks.

A number of mobile client devices 21 (e.g., 21A, 21 B, etc.) operate on each wireless network 22. A number of servers 25 (e.g., 5A, 5B, etc.) operate on the computer network 24 to provide a variety of services for the mobile devices 21 and/or to one or more non-mobile client devices 29 coupled to the computer network 24. For example, the servers 25 may include World Wide Web servers, file servers, application servers, etc.

Each gateway 23 is operated by the wireless carrier of the wireless network to which it is directly connected. Each gateway 23 provides an interface between a particular wireless network 22 and the computer network 24 (e.g., the Internet), providing routing and, if necessary, appropriate protocol translation and/or content transcoding. In some cases, the gateway 23 may be a standalone device or system. In other cases, the gateway 3 may be part of a more-capable server system that provides additional value-added services to users of client devices 21; such as a proxy service 27, a provisioning manager 28, etc.

A download manager 1 in accordance with the present invention is connected to the computer network 24, either directly (as shown) or indirectly. The download manager 1 can be, but does not have to be, operated by a wireless carrier.

Download Manager

FIG. 3 schematically shows the download manager in greater detail, according to certain embodiments of the invention. In the illustrated embodiment, the major components of the download manager include a delivery manager 31, a product manager 32, a business & operations manager 33, and multiple protocol handlers 34. Each of these components is preferably implemented as software, data, or a combination of software and data. However, in other embodiments, some or all of these components could be implemented in hardwired circuitry. The download manager 1 may also include a database 35 of published content, as shown, although at least some of the published content may instead be stored remotely.

The product manager 32 is the download manager's interface to the various content suppliers and provides centralized product cataloging (including enabling qualified content suppliers to register content for analysis and publication) and complete product life cycle support (i.e., management of content submission, analysis, approval, publication, use, maintenance, and eventual deactivation). The term "publication", as used herein, means making a product available on the download manager to wireless services subscribers for downloading to their client devices. The delivery manager 31 is the download manager's interface to the various subscribers and is responsible for delivering purchased digital content to subscribers, including invoking a protocol handler appropriate for communicating with each requesting mobile device. The protocol handlers 34 support multiple product discovery protocols and multiple product delivery protocols simultaneously. Hence, the protocol handlers 34 include product discovery handlers (e.g., a WAP handler, a Web handler, a Motorola Discovery handler) and product delivery handlers (e.g., a MIDP OTA handler, a Motorola OTA handler, a Nokia COD OTA handler). The business & operations manager 33 is mainly responsible for

managing domain information and processes for charging subscribers for purchases of content. These components are described further below.

As shown in FIG. **3**, the delivery manager **31** in certain embodiments includes a security manager **36**, a device capability manager **37**, a personal vault **38**, a storefront **39**, and a notification manager **40**. The storefront **39** is a conventional graphical user interface for allowing subscribers to make online purchases. It can be branded to a particular wireless carrier, for example, or other business entity. The security manager **36** is responsible for authentication of subscribers and client devices for purposes of purchasing content and preferably can support multiple authentication schemes, such as HTTP-based authentication, MSISDN/NIA based authentication, etc. The personal vault **38** stores, on a subscriber-by-subscriber basis, information to facilitate digital rights management (DRM), such as product licenses and/or other "purchase" information of the products purchased by each subscriber. This allows a subscriber to remove downloaded content from a mobile device without losing rights to the product, or to recover products on a device in cases of device hard reset, loss, etc.

The notification manager **40** can provide various types of notifications to subscribers using various communication channels, such as email, SMS, and WAP Push. The notification manager **40** can generate notifications automatically, such as notifications of new products or product upgrades, or in response to commands from a system administrator, such as account notifications, notifications of special promotions, etc.

The device capability manager **37** is responsible for device recognition (e.g., supporting device recognition through UAProf using Profile headers and Profile-Diff headers), device capability determination (e.g., retrieving device descriptors using best efforts and appending device capabilities to the session context), and device capability management (e.g., automated management of UAProf capable devices and quarantine of undefined or partially defined devices). As described further below, recognition of devices and their capabilities is used for a variety of purposes, such as to filter the set of available products that a subscriber can discover when connecting to the download manager **1**, to select the appropriate implementations of products that are purchased, and to select the appropriate provisioning model for provisioning a purchased product in a client device.

FIG. **4** shows the components of the device capability manager **37** according to an embodiment of the invention. The device capability manager **37** includes a device manager **41**, a device handler manager **42**, a delivery context cache **43**, a set of device recognition handlers **44**, a device data access object (DAO) **45**, a device information database **46**, a UAProf parser **47**, a UAProf resolver **48**, a dm-config.xml file **49**, and a DeviceVocabulary file **50**. The device information database **46** stores information identifying mobile devices and their corresponding capabilities. The device manager **41** contains all of the business logic that supports the user interface and the rest of the download manager **1**. The device DAO **45** contains all data logic and scripted query language necessary to communicate with the device information database **46**.

The device handler manager **42** is responsible for discovering and determining the types of devices accessing the download manager **1**. Upon startup of the download manager **1**, the device handler manager **42** loads the device recognition handlers **44** ordered by the dm-config.xml file **49**. This order is then used to determine which headers are to be processed first. The delivery context cache **43** is used to help improve performance on subsequent look-ups. If no device capabilities can be found or processed by the chain of handlers **44**, the device handler manager **42** then uses a default delivery context as defined by an administrative user interface.

The illustrated embodiment includes three device recognition handlers **44**: an XwapProfile handler, a UserAgent handler, and a quarantine handler. The XwapProfile handler is responsible for processing the "x-wap-profile" and "x-wap-profil-diff" request headers in requests from mobile (client) devices. It makes use of the UAProf parser **47** to parse RDF-compliant files and the UAProf resolver **48** to resolve the differences of the headers. The UAProf parser **47** parses RDF-compliant files. The UAProf resolver **48** reads resolution rules from the device-vocabulary.xml configuration file **50** and uses these rules to help merge x-wap-profile and x-wap-profile-diff headers.

The UserAgent handler is responsible for processing the "user-agent" request headers. It uses regular expression matching to best match the capabilities with the incoming "user-agent" header. If no user-agent header can be found or one is found but does not match to any existing capabilities, the request header is passed to the next handler in the chain.

The quarantine handler is responsible for processing any "accept" request headers. If the quarantine handler finds a user-agent header, it will add a new record in a device match table. Otherwise, it will simply return a delivery context with a set of capabilities determined by the "accept" headers and capabilities already defined by the default device profile.

The device capability manager **37** is capable of managing client devices in either of two categories: actual devices and generic devices. In response to client device requests, the device capability manager **37** uses actual device information from the request and any applicable stored generic device definitions to recognize the accessing client device and its capabilities. The system administrator can define devices (or device capabilities) in either category. An actual device is a particular make and model of client device, such as "Nokia 6310". Actual devices are identified solely from incoming requests, based on the UserAgent and x-wap-profile headers in the requests, for example. A generic device is a predefined device or set of device capabilities. Examples of some generic device definitions are: all Nokia devices (e.g., "vendorname=nokia"), all devices with display size >40, and all devices which support SMS. In response to client device requests, the device capability manager **37** uses the UserAgent or x-wap-profile header to identify the actual device accessing the system and to look up its corresponding capabilities in the device information database **46**, which are combined with any applicable generic device definitions to determine the capabilities of the client device. The use of this information is described further below.

It is useful now to define two types of device capabilities which the device capability manager is able to resolve: static capabilities and active capabilities. As defined in the download manager, "static" capabilities are the well-known set of attributes for a given device which are defined during pre-processing, not on-the-fly. These are associated with a client device as identified in the UserAgent or x-wap-profile headers. Generic devices, as defined above, only have static capabilities. "Active" capabilities represent a dynamic collection of attributes extracted during an interaction between the client device and the download manager, typically from the Accept headers. These two types of device capabilities are stored separately in the device information database **46**.

The ability for a user to discover content based on the static (well-known) capabilities of his device is valuable.

With the number of device manufacturers and content providers in the market, there is often a gap between the interoperability of a given content and how effective it can be run on a device. By using the system's unique ability to capture the capabilities of a device and for content suppliers to select compatible devices for their content, the download manager 1 is capable of targeting supported products to their respective devices for a subscriber. In addition, the download manager 1 is able to easily adapt to the ever-changing modifications to capabilities and requirements and is highly scalable as more devices and content are pushed into the system, without a substantial decrease in performance.

Referring again to FIG. 3, the product manager **32** in certain embodiments includes a product workflow manager **51**, a content analysis manager **52**, a pricing manager **53**, and a product catalog **54**. The product workflow manager **51** allows the system administrator to define and modify details of the product workflow for processing content submitted by content providers. An example of a product workflow is (in chronological order): 1) submission, 2) content analysis, 3) listing of content in the product catalog, 4) usage of the content, 5) maintenance of content, and 6) content retirement (i.e., cancellation or deletion).

The content analysis manager **52** manages the process of verifying content quality and compliance with various requirements when the content is initially submitted by the content supplier (e.g., compliance with its declared type, content structure resource utilization, etc.). Content must pass the content analysis process satisfactorily before being listed in the product catalog **54** (i.e., published).

The pricing manager **53** allows administrators to add, modify and delete license for products in the store. The pricing manager **53** also includes and invokes a set of rating handlers at the time of purchase, which can adjust the price of the product based on various factors (e.g., promotions, applicable rebates, etc.), as described further below.

The product catalog **54** contains descriptions of all published items of content (products). Referring to FIG. **5**, the catalog **54** includes, for each product entry **56**, a reference **58** to at least one implementation **57** of that product. An implementation **57** can be simply a binary file (a "binary") representing the product. In some cases, however, an implementation **57** may represent two or more binaries **61**, as shown in FIG. **6**. Also as represented in FIG. **5** and FIG. **6**, any particular product may have multiple implementations published on the download manager, each of which may be designed for a different specific client device or set of client devices.

Hence, any particular product entry in the catalog **54** can include references to multiple implementations of the product. However, the products shown to any particular subscriber when the subscriber views the catalog are filtered according to the device capabilities of the subscriber's device. More specifically, only those products that have at least one implementation compatible with the subscriber's device are shown to the subscriber. As shown in FIG. **5**, each implementation entry **57** also includes a list (**59A** or **59B**) of devices supported by that implementation. Each product entry **56** in the catalog **54** includes a list **59** of the devices that are supported by that product. Which represents the aggregation of all of the devices supported by all of the implementations **57** of that product.

In addition, for any particular product, the catalog may include a description **60** of the product in multiple different languages, to accommodate subscribers in different countries. Product descriptions **60** are shown to each subscriber in the appropriate language, and the prices of products are shown in the appropriate currency, according to the domain of which the subscriber is a member. The domain of the subscriber is identified by the domain manager **62**, as described below.

Referring again to FIG. **3**, the business & operations manager **33** in certain embodiments includes an operation administration and management (OA&M) module **61**, a domain manager **62**, and a payment manager **63**. The OA&M module **61** provides a Web based user interface for administering the download manager **1**. It supports role-based delegation of administration duties (e.g., system administrator, domain administrator, product administrator, customer care administrator, etc.) and interfaces with the provisioning manager to provide logging and reporting of key events and transactions.

The payment manager **63** is responsible for the process of charging subscribers when they purchase content and supports multiple different languages and currencies, partitioned by domain. The approach to billing and payment assumes that there are local billing mechanisms in place, each of which has an established relationship to the subscriber already. The local billing mechanism operates in the local currency using the local taxes, fees and other applicable charges for the subscriber's region. It also invoices at intervals that are customary for the region.

In certain embodiments of the invention, a subscriber can select the preferred payment model to use of three available payment models:

- Online payment—payment is performed 'just-in-time'. A typical implementation performs the payment transaction at the time of the purchase.
- Pre-paid payments—payment is performed before purchase and the purchase is deducted from the pre-paid amount.
- Post payments—payment is performed after the purchase by invoice.

A separate payment handler of a set of payment handlers **64** is accessible to the payment manager **63** for each of these payment models (see FIG. **3**), and the payment manager is responsible for invoking the appropriate payment handler **64** at the time of purchase.

Referring now to FIG. **7**, anytime a subscriber logs in to the download manager, a session **71** is created. The session **71** holds a reference to a unique subscriber profile **72** associated with the subscriber. Each subscriber has such a subscriber profile, which points to the organization that holds the billing relationship with the subscriber (i.e., the partner responsible for invoicing the subscriber) and an indication of the subscriber's selected payment model (i.e., post-paid, pre-paid, or online).

The download manager **1** also maintains a subscriber provider profile **73** for each subscriber provider (e.g., wireless carrier, etc.). Each subscriber provider profile **73** holds a reference to each of the payment handlers **64**, an indication of the local currency, and an indication of any value added tax and/or other charges that normally apply to the offered services in the region.

The product catalog **54**, as described above, holds the name, description and price of each product, as well as information indicating the supported devices. There is a separate entry for each supported local currency. There are no dependencies between the prices in various currencies for the same product.

This approach allows a product (or service) to have many different prices, on in each supported currency. There are no dependencies between prices other than that they all apply to

one product. This approach, therefore, supports localized pricing policies and local taxes, etc.

The payment manager **63** includes a set of rating handlers (not shown), which are responsible for adjusting the price of products based on various factors, such as promotional offers, applying rebates, etc. Prices of content may change from time to time, subject to factors such as rebates, promotions, etc. At the time of purchase, the price of the product is determined by invoking the rating handlers. Each rating handler is called by the payment manager **63** with a reference to the corresponding product license and a reference to the subscriber. The rating handler is responsible for adjusting the price, if appropriate, and returning a new price.

Each of the payment handlers includes a charge method. During purchase the charge method of the registered payment handler for the payment model selected by the subscriber is called. The argument to the charge method is a data structure, ChargeDetailRecord, generated by the payment manager **63**, which holds information about the subscriber, the product, the product license with the price, and the domain of the subscriber. The charge method can either approve the charge and, thus, allow the purchase, or it can deny the purchase.

Referring again to FIG. **3**, the domain manager **62** manages the associations between domains and partners, subscribers, suppliers, and products, and stores all of the domain information. As noted above, each domain can have the following properties:

- a name (localized)
- a description (localized)
- a uniform resource locator (URL) to a web site giving further description of the domain
- a contact address including contact person, contact telephone numbers, fax numbers and postal address
- the currency to use for billing and display purposes
- reference to handlers for online payment, pre-payment and post-payment
- a set of references to rating handlers

The domain manager **62** enables flexible business models to be implemented via revenue sharing between, and charging by, different stakeholders (partners).

Various aspects of the operation of the download manager **1** will now be described further with reference to FIGS. **8** through **13**. FIG. **8** illustrates a simplified process by which a product can be listed in the product catalog in a way that facilitates device-tailored product discovery and provisioning, according to an embodiment of the invention. Certain operations in the product workflow are not shown in FIG. **8** to facilitate explanation, such as content analysis and approval. Initially, at block **801** the download manager **1** receives inputs from a product supplier defining a product and one or more implementations of that product. At block **802**, the download manager receives inputs from the supplier specifying one or more devices (actual or generic) which support each implementation and one or more provisioning protocols to be used for each implementation. At block **803** the download manager **1** stores the product definition, the implementations, and a list of all of the supported devices and provisioning protocols. Finally, at block **804** the download manager **1** determines the set of all possible devices which support the product and stores this information in association with the product information in the product catalog **54**.

FIG. **9** shows a process by which the catalog is displayed to a subscriber, according to an embodiment of the invention. At block **901** a client device operated by the subscriber connects to the download manager **1**. The domain manager **62** then identifies the domain of the subscriber at bock **902** based on its stored domain and subscriber associations. At block **903**, the product manager **32** selects the language and currency to be used based on the domain of the subscriber (each domain has one language and currency). At block **904**, the device capability manager **37** identifies the client device (e.g., from the UserAgent or x-wap-profile header) and its corresponding set of static (well-known) device capabilities. When a request to view available products is received from the client device (block **905**), at block **906** the product manager **32** determines from the product catalog **54** which products are supported by the client device, based on the (static) capabilities of the client device. The download manager **1** then sends a response to the client at block **907**, to cause the client device to display product information relating to only those products supported by the client device, in the appropriate currency and language for the subscriber's domain.

FIG. **10** shows a process by which a purchase of a product can be made, according to an embodiment of the invention. After displaying the product catalog **54** to the subscriber, the download manager **1** receives the subscriber's selection of the product to purchase at block **1001**. At block **1002** the pricing manager **53** calls all of the registered rating adapters. The rating adapters then adjust the price of the selected product, if appropriate, at block **1003**. At block **1004** the pricing manager **53** then presents a license object indicating the price to the subscriber. If the subscriber confirms the purchase (block **1005**), then at block **1006** the provisioning manager requests the payment manager **63** to charge the applicable price for the product. The payment manager **63** responds at block **1007** by selecting the applicable payment handler **44** based on the domain to which the subscriber belongs and the subscriber's preferred payment model (pre-paid, post-paid, or online). Finally, at block **1008** the selected payment handler **44** performs the charge method to complete the transaction.

Multiple Provisioning Models

Different client devices often require different content provisioning protocols and packaging formats. In order to make a given item of digital content available to multiple mobile devices supporting different provisioning models, a digital content supplier would normally have to deploy that item of content multiple times, packaging it differently for each of the provisioning models. The download manager **1**, however, separates content from how it is provisioned to a device. As described above and as illustrated conceptually in FIG. **11**, in the download manager **1** the product information is separated from the content itself, the content is separated from how it is packaged for delivery, the packaged content is separated from the delivery mechanism, and the delivery mechanism is separated from the discovery mechanism (the mechanism by which the subscriber discovers a product). By virtue of this separation, a content supplier is able to deploy content only once, targeting a wide range of devices, and the download manager **1** will deliver the content to those devices over a wide range of provisioning protocols.

When a product is submitted to the download manager **1** by a supplier, the supplier specifies which devices are supported by each implementation of the product. This information is then stored by the download manager **1** and used to select the proper packaging and provisioning protocol when the product is subsequently purchased.

The provisioning model used to provision a particular product in a particular client device is based on the device capabilities of the client device as well as the content type

of the best-fit implementation. A provisioning "model", in this context, includes a particular provisioning protocol and a content packaging format. The ability to deliver the "best-fit" content based on "active" (dynamic) capabilities of a device is advantageous. Content provisioning provides the second part of targeting products to a given subscriber based on his device's capabilities. Whereas product discovery as described above relies on the "static" capabilities, provisioning relies on the "active" capabilities to determine the exact and often new enhancements of the client device. Given that a device can be fitted or enhanced with new features not described by the default set of capabilities originally intended for the device, the download manager **1** can use these active capabilities to find the best match content to provision to the device.

FIG. **12** illustrates a process by which a product is provisioned in a client device using the appropriate one of various provisioning protocols. At block **1201**, in response to a subscriber purchasing a product, the delivery manager **31** selects the best implementation of the product based on the device capabilities (static and active) of the client device. At block **1202** the download manager retrieves the content type of the selected implementation (e.g., MIDlet, EXE file, applet, iAppli, etc.). At block **1203** the download manager **1** selects the appropriate provisioning model available for that implementation, based on the device capabilities of the client device and the content type of the selected implementation. The provisioning manager **28** then creates a content descriptor for the implementation at block **1204**, based on the selected provisioning model. The content descriptor specifies the name of the content to be provisioned, the size of the content, a location (e.g., a URL) at which the content is stored, and the content type of the content. The content descriptor is unique to the provisioning handler (protocol) of the selected provisioning model.

The provisioning manager **28** then downloads the content descriptor to the client device at block **1205**. The client device parses the descriptor and then requests the content. When the provisioning manager **28** receives the request for the content from the client device at block **1206**, the provisioning manager **28** responds at block **1207** by downloading the content using the provisioning protocol of the selected provisioning model (e.g., COD OTA, Openwave Download Fun, MIDP OTA, etc.)

Download Manager Deployment Architecture

FIG. **13** shows an example of the software deployment architecture of the download manager **1** at a high level, according to an embodiment of the invention. Each instance of the download manager **1** resides on a host **131** that has access to a database **140**. The host **131** is a server-class computer system including an operating system (e.g., Solaris). The database **140** may represent multiple physical databases, which in aggregate store all of the data used by the download manager **1** (i.e., product information, subscriber information, partner information, domain information, etc.). In the illustrated embodiment, each host **131** includes a Java Virtual Machine (JVM) **132** which runs on top of the operating system and which hosts an application server **133**. On top of the application server **133** is a Web container **134** that contains Java Server Pages (JSPs) **135** and servlets **136** as well as application components **137** including the business logic and data access layer **138** of the download manager **1**.

The download manager **1** is formed by the Web container **134** and its contents, the application components **137**, and at least a portion of the database **140**. Horizontal scaling can be achieved by adding more hosts**131** hosting instances of the download manager **1**. In that case, an Internet Protocol (IP) load balancer **139** provides sticky load balancing, i.e., directing all session-specific traffic to the same host.

The above-described software architecture (i.e., the download manager) can be implemented in one or more conventional server-class computer systems. FIG. **14** illustrates the hardware architecture of such a computer system at a high-level. Note that this architecture is also representative of at least some client devices that access the download manager **1**. Note also that FIG. **14** is a conceptual representation which represents any of numerous possible specific physical arrangements of hardware components; however, the details of such arrangements are not germane to the present invention and are well within the knowledge of those skilled in the art.

The processing system shown in FIG. **14** includes one or more processors **140**, i.e. a central processing unit (CPU), read-only memory (ROM) **141**, and random access memory (RAM) **142**, each connected to a bus system **146**. Also coupled to the bus system **146** are a mass storage device **143**, a data communication device **144**, and in some embodiments, one or more additional input/output (I/O) devices **145**.

The processor(s) **140** may be, or may include, one or more programmable general-purpose or special-purpose microprocessors or digital signal processors (DSPs), microcontrollers, application specific integrated circuits (ASICs), programmable logic devices (PLDs), or a combination of such devices. The bus system **146** includes one or more buses or other physical connections, which may be connected to each other through various bridges, bus controllers and/or adapters such as are well-known in the art. For example, the bus system **146** may include a "system bus", which may be connected through one or more adapters to one or more expansion buses, such as a Peripheral Component Interconnect (PCI) bus, HyperTransport or industry standard architecture (ISA) bus, small computer system interface (SCSI) bus, universal serial bus (USB), or Institute of Electrical and Electronics Engineers (IEEE) standard 1394 bus (sometimes referred to as "Firewire"). In alternative embodiments, some or all of the aforementioned components may be connected to each other directly, rather than through a bus system.

The mass storage device **143** may be, or may include, any one or more devices suitable for storing large volumes of data in a non-volatile manner, such as a magnetic disk or tape, magneto-optical (MO) storage device, or any of various types of Digital Versatile Disk (DVD) or Compact Disk (CD) based storage, or a combination of such devices.

The data communication device **144** is a device suitable for enabling the processing system to communicate data with a remote processing system over a data communication link **148**, and may be, for example, a conventional telephone modem, a wireless modem, an Integrated Services Digital Network (ISDN) adapter, a Digital Subscriber Line (DSL) modem, a cable modem, a radio transceiver, a satellite transceiver, an Ethernet adapter, or the like.

The I/O devices **145** (which may be omitted in a system that operates exclusively as a server and provides no direct local user interface) may include, for example, one or more devices such as: a pointing device such as a mouse, trackball, touchpad, or the like; a keyboard; audio speakers; and/or a display device such as a cathode ray tube (CRT), a liquid crystal display (LCD), or the like. Other variations upon the illustrated set of components can be implemented in a manner consistent with the invention.

Software (including instructions and data) **147** to implement the techniques described above may be stored in one or more of ROM **141**, RAM **142**, and mass storage device **143**. In certain embodiments, the software **147** may be initially loaded into the processing system by downloading it from a remote system through the communication device **144**.

Thus, a system and method for managing the publication, purchase and delivery of digital content from multiple content suppliers to multiple wireless services subscribers in multiple domains have been described. Although the present invention has been described with reference to specific exemplary embodiments, it will be recognized that the invention is not limited to the embodiments described, but can be practiced with modification and alteration within the spirit and scope of the appended claims. Accordingly, the specification and drawings are to be regarded in an illustrative sense rather than a restrictive sense.

What is claimed is:

1. A method of providing access to content for use on wireless communication devices, the method comprising:

receiving and storing a plurality of items of content to be made available for use in wireless communication devices used by a plurality of wireless services subscribers, including receiving a plurality of different implementations of at least one of the items of content, where each implementation of any given item of content corresponds to a different set of device capabilities; and

maintaining a product catalog containing a description of the items of content, the product catalog including, in association with each item of content, a reference to each implementation of said item of content.

2. A method of providing access to digital content for use on wireless communication devices, the method comprising:

receiving and storing in a server system a plurality of items of digital content to be made available for use in wireless communication devices used by a plurality of wireless services subscribers, including receiving and storing a plurality of different implementations of at least one of the items of digital content, where each implementation of any given item of digital content corresponds to a different set of device capabilities;

operating the server system to maintain a product catalog containing a description of the items of digital content, wherein the product catalog includes, in association with each item of digital content, a reference to each implementation of said item of digital content;

receiving a request from a wireless device used by one of the subscribers;

in response to the request, selecting a portion of the product catalog to be presented to the subscriber, based on device capabilities of the wireless device used by the subscriber; and

presenting the selected portion of the product catalog to the subscriber via a wireless network, such that the selected portion, as presented to the subscriber, provides only a single description of each item of digital content in said portion, regardless of the number of implementations of each said item.

3. A method as recited in claim **2**, wherein said selecting a portion of the product catalog comprises:

in response to the request, determining the identity of the wireless device used by the subscriber, wherein each implementation of the plurality of items of digital content has been previously associated in the server system with at least one device identity, according to corresponding device capabilities supported by the implementation; and

selecting the portion of the product catalog to be presented to the subscriber based on the identity of the wireless device used by the subscriber.

4. A method as recited in claim **2**, further comprising:

receiving from the subscriber a request for one of the items of digital content in said portion of the product catalog;

selecting an implementation of the requested item of digital content, based on device capabilities of the wireless device used by the subscriber; and

downloading the selected implementation of the item of digital content to the wireless device used by the subscriber.

5. A method as recited in claim **4**, further comprising associating each of the items of digital content in the server system with a plurality of different provisioning models, each of the provisioning models corresponding to a different set of device capabilities, each provisioning model including a provisioning protocol and a corresponding set of provisioning attributes and descriptors for provisioning digital content in wireless devices.

6. A method as recited in claim **5**, further comprising:

receiving from the subscriber a request for one of the items of digital content in said portion of the product catalog;

identifying device capabilities of the wireless device used by the subscriber;

selecting one of a plurality of provisioning models associated with the requested item in the server system, based on the device capabilities of the wireless device used by the subscriber;

packaging the requested item according to the selected provisioning model; and

provisioning the requested item in the wireless device used by the subscriber according to the selected provisioning model.

7. A method as recited in claim **6**, wherein:

said packaging the requested item comprises creating a provisioning descriptor for the requested item according to the selected provisioning model, and associating the provisioning descriptor with the requested item; and

said provisioning the requested item in the wireless device comprises sending the packaged requested item to the wireless device used by the subscriber according to a provisioning protocol associated with the selected provisioning model.

8. A system comprising:

a network interface through which to communicate over a communication network; and

a download manager to

receive and store a plurality of items of content to be made available for use in wireless communication devices used by a plurality of wireless telecommunications subscribers, including receiving a plurality of different implementations of at least one of the items of content, where each implementation of any given item of content corresponds to a different set of device capabilities; and

maintain a product catalog containing a description of the items of content, the product catalog including, in association with each item of content, a reference to each implementation of said item of content.

9. A system comprising:

a processor; and

a storage facility accessible to the processor and containing code which, when executed by the processor, causes the processing system to

receive and store a plurality of items of digital content to be made available for use in wireless communication devices used by a plurality of wireless telecommunications subscribers, including receiving and storing a plurality of different implementations of at least one of the items of digital content, where each implementation of any given item of digital content corresponds to a different set of device capabilities;

maintain a product catalog containing a description of the items of digital content, wherein the product catalog includes, in association with each item of digital content, a reference to each implementation of said item of digital content;

receive a request from a wireless device used by one of the subscribers,

in response to the request, select a portion of the product catalog to be presented to the subscriber, based on device capabilities of the wireless device used by the subscriber; and

cause the selected portion of the product catalog to be presented to the subscriber via a wireless telecommunications network, such that the selected portion, as presented to the subscriber, provides only a single description of each item of digital content in said portion, regardless of the number of implementations of each said item.

10. A system as recited in claim 9, wherein selection of said portion of the product catalog comprises:

in response to the request, determining the identity of the wireless device used by the subscriber, wherein each implementation of the plurality of items of digital content has been previously associated in the server system with at least one device identity, according to corresponding device capabilities supported by the implementation; and

selecting the portion of the product catalog to be presented to the subscriber based on the identity of the wireless device used by the subscriber.

11. A system as recited in claim 10, wherein said storage facility further contains code which, when executed by the processor, causes the processing system to:

receive from the subscriber a request for one of the items of digital content in said portion of the product catalog;

select an implementation of the requested item of digital content, based on device capabilities of the wireless device used by the subscriber; and

download the selected implementation of the item of digital content to the wireless device used by the subscriber.

12. A system as recited in claim 11, wherein said storage facility further contains code which, when executed by the processor, causes the processing system to:

associate each of the items of digital content in the server system with a plurality of different provisioning models, each of the provisioning models corresponding to a different set of device capabilities, each of the provisioning models including a provisioning protocol and a corresponding set of provisioning attributes and descriptors for provisioning digital content in wireless devices.

13. A system as recited in claim 12, wherein said storage facility further contains code which, when executed by the processor, causes the processing system to:

receive from the subscriber a request for one of the items of digital content in said portion of the product catalog;

identify device capabilities of the wireless device used by the subscriber;

select one of a plurality of provisioning models associated with the requested item in the server system, based on the device capabilities of the wireless device used by the subscriber;

package the requested item according to the selected provisioning model; and

provision the requested item in the wireless device used by the subscriber according to the selected provisioning model.

14. A system as recited in claim 13, wherein packaging the requested item comprises creating a provisioning descriptor for the requested item according to the selected provisioning model, and associating the provisioning descriptor with the requested item; and

wherein provisioning the requested item in the wireless device comprises sending the packaged requested item to the wireless device used by the subscriber according to a provisioning protocol associated with the selected provisioning model.

* * * * *

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re patent of Rikard M. Kjellberg *et al.*	§	Attorney Docket No.: 185945.011700
U.S. Patent No. 7,233,790	§	Customer No.: 67395
Issue Date: June 19, 2007	§	
Filing Date: June 19, 2003	§	
For: DEVICE CAPABILITY BASED DISCOVERY PACKAGING AND PROVISIONING OF CONTENT FOR WIRELESS MOBILE DEVICES	§	

DECLARATION OF A.L. NARASIMHA REDDY, PH.D. IN SUPPORT OF REQUEST FOR *EX PARTE* REEXAMINATION OF U.S. PATENT 7,233,790

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IX. CLAIMS 1 AND 8 WOULD HAVE BEEN OBVIOUS OVER SENOH IN VIEW OF AGRAHARAM 34

A. Claim 1 34

1. [1P] A method of providing access to content for use on wireless communication devices, the method comprising: 34

2. [1Ai] receiving and storing a plurality of items of content to be made available for use in wireless communication devices used by a plurality of wireless services subscribers, ... 36

3. [1Aii] including receiving a plurality of different implementations of at least one of the items of content, where each implementation of any given item of content corresponds to a different set of device capabilities; and 37

4. [1B] maintaining a product catalog containing a description of the items of

content, the product catalog including, in association with each item of content, a reference to each implementation of said item of content. 40

5. Senoh in view of Agraharam Renders Claim 1 Obvious; Motivation to Combine/Modify Senoh 44

B. Claim 8 51

1. [8P] A system comprising: 51

2. [8A] a network interface through which to communicate over a communication network; and 51

3. [8B] a download manager to 52

4. [8Bi] receive and store a plurality of items of content to be made available for use in wireless communication devices used by a plurality of wireless telecommunications subscribers, ...52

5. [8Bii] including receiving a plurality of different implementations of at least one of the items of content, where each implementation of any given item of content corresponds to a different set of device capabilities; and..53

6. [8Biii] maintain a product catalog containing a description of the items of content, the product catalog including, in association with each item of content, a reference to each implementation of said item of content. 53

7. Senoh in view of Agraharam Renders Claim 8 Obvious; Motivation to Combine/Modify Senoh 53

X. CLAIMS 1-2, 4, AND 8-9 WOULD HAVE BEEN OBVIOUS OVER SENOH IN VIEW OF KENNER 54

A. Claim 1 54

1. [1P] A method of providing access to content for use on wireless communication devices, the method comprising: 54

2. [1Ai] receiving and storing a plurality of items of content to be made available for use in wireless communication devices used by a plurality of wireless services subscribers, ...54

3. [1Aii] including receiving a plurality of different implementations of at least one of the items of content, where each implementation of any given item of content corresponds to a different set of device capabilities; and..54

4. [1B] maintaining a product catalog containing a description of the items of content, the product catalog including, in association with each item of content, a reference to each implementation of said item of content. 57

5. Senoh in view of Kenner Renders Claim 1 Obvious; Motivation to Combine/Modify Senoh 59

B. Claim 2 67

1. [2P] A method of providing access to digital content for use on wireless communication devices, the method comprising: 67
2. [2Ai] receiving and storing in a server system a plurality of items of digital content to be made available for use in wireless communication devices used by a plurality of wireless services subscribers, ... 67
3. [2Aii] including receiving and storing a plurality of different implementations of at least one of the items of digital content, where each implementation of any given item of digital content corresponds to a different set of device capabilities; 68
4. [2B] operating the server system to maintain a product catalog containing a description of the items of digital content wherein the product catalog includes, in association with each item of digital content, a reference to each implementation of said item of digital content; 68
5. [2C] receiving a request from a wireless device used by one of the subscribers; 69
6. [2D] in response to the request, selecting a portion of the product catalog to be presented to the subscriber, based on device capabilities of the wireless device used by the subscriber; and 69
7. [2E] presenting the selected portion of the product catalog to the subscriber via a wireless network, such that the selected portion, as presented to the subscriber, provides only a single description of each item of digital content in said portion, regardless of the number of implementations of each said item. 70
8. Senoh in view of Kenner Renders Claim 2 Obvious; Motivation to Combine/Modify Senoh 71

C. Claim 4 71

1. [4P] A method as recited in claim 2, further comprising: 71
2. [4A] receiving from the subscriber a request for one of the items of digital content in said portion of the product catalog; 71
3. [4B] selecting an implementation of the requested item of digital content, based on device capabilities of the wireless device used by the subscriber; and 73

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4. [4C] downloading the selected implementation of the item of digital content to the wireless device used by the subscriber. 74
D. Claim 8 74
1. [8P] A system comprising: 74
2. [8A] a network interface through which to communicate over a communication network; and 75
3. [8B] a download manager to 75
4. [8Bi] receive and store a plurality of items of content to be made available for use in wireless communication devices used by a plurality of wireless telecommunications subscribers, ...75
5. [8Bii] including receiving a plurality of different implementations of at least one of the items of content, where each implementation of any given item of content corresponds to a different set of device capabilities; and..75
6. [8Biii] maintain a product catalog containing a description of the items of content, the product catalog including, in association with each item of content, a reference to each implementation of said item of content. 76
7. Senoh in view of Kenner Renders Claim 8 Obvious; Motivation to Combine/Modify Senoh 76
E. Claim 9 76
1. [9P] A system comprising: 76
2. [9A] a processor; and 77
3. [9B] a storage facility accessible to the processor and containing code which, when executed by the processor, causes the processing system to.78
4. [9Bi] receive and store a plurality of items of digital content to be made available for use in wireless communication devices used by a plurality of wireless telecommunications subscribers, ...78
5. [9Bii] including receiving and storing a plurality of different implementations of at least one of the items of digital content, where each implementation of any given item of digital content corresponds to a different set of device capabilities; 79
6. [9Biii] maintain a product catalog containing a description of the items of digital content, wherein the product catalog includes, in association with each item of digital content, a reference to each implementation of said item of digital content; 79

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7. [9Biv] receive a request from a wireless device used by one of the subscribers;....79
8. [9Bv] in response to the request, select a portion of the product catalog to be presented to the subscriber, based on device capabilities of the wireless device used by the subscriber; and....80
9. [9Bvi] cause the selected portion of the product catalog to be presented to the subscriber via a wireless telecommunications network, such that the selected portion, as presented to the subscriber, provides only a single description of each item of digital content in said portion, regardless of the number of implementations of each said item....80
10. Senoh in view of Kenner Renders Claim 9 Obvious; Motivation to Combine/Modify Senoh....80

XI. CLAIMS 1-2, 4, AND 8-9 WOULD HAVE BEEN OBVIOUS OVER SENOH IN VIEW OF LI....81

A. Claim 1....81

1. [1P] A method of providing access to content for use on wireless communication devices, the method comprising:....81
2. [1Ai] receiving and storing a plurality of items of content to be made available for use in wireless communication devices used by a plurality of wireless services subscribers,....81
3. [1Aii] including receiving a plurality of different implementations of at least one of the items of content, where each implementation of any given item of content corresponds to a different set of device capabilities; and..81
4. [1B] maintaining a product catalog containing a description of the items of content, the product catalog including, in association with each item of content, a reference to each implementation of said item of content. 85
5. Senoh in view of Li Renders Claim 1 Obvious; Motivation to Combine/Modify Senoh....88

B. Claim 2....94

1. [2P] A method of providing access to digital content for use on wireless communication devices, the method comprising:....94
2. [2Ai] receiving and storing in a server system a plurality of items of digital content to be made available for use in wireless communication devices used by a plurality of wireless services subscribers, ...95

3. [2Aii] including receiving and storing a plurality of different implementations of at least one of the items of digital content, where each implementation of any given item of digital content corresponds to a different set of device capabilities; 95
4. [2B] operating the server system to maintain a product catalog containing a description of the items of digital content wherein the product catalog includes, in association with each item of digital content, a reference to each implementation of said item of digital content;....96
5. [2C] receiving a request from a wireless device used by one of the subscribers;....96
6. [2D] in response to the request, selecting a portion of the product catalog to be presented to the subscriber, based on device capabilities of the wireless device used by the subscriber; and....97
7. [2E] presenting the selected portion of the product catalog to the subscriber via a wireless network, such that the selected portion, as presented to the subscriber, provides only a single description of each item of digital content in said portion, regardless of the number of implementations of each said item....99
8. Senoh in view of Li Renders Claim 2 Obvious; Motivation to Combine/Modify Senoh....101

C. Claim 4....101
1. [4P] A method as recited in claim 2, further comprising: 101
2. [4A] receiving from the subscriber a request for one of the items of digital content in said portion of the product catalog; 101
3. [4B] selecting an implementation of the requested item of digital content, based on device capabilities of the wireless used by the subscriber; and.102
4. [4C] downloading the selected implementation of the item of digital content to the wireless device used by the subscriber. 103

D. Claim 8....104
1. [8P] A system comprising:....104
2. [8A] a network interface through which to communicate over a communication network; and....104
3. [8B] a download manager to....105
4. [8Bi] receive and store a plurality of items of content to be made available

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for use in wireless communication devices used by a plurality of wireless telecommunications subscribers, ... 105

5. [8Bii] including receiving a plurality of different implementations of at least one of the items of content, where each implementation of any given item of content corresponds to a different set of device capabilities; and 105
6. [8Biii] maintain a product catalog containing a description of the items of content, the product catalog including, in association with each item of content, a reference to each implementation of said item of content. 105
7. Senoh in view of Li Renders Claim 8 Obvious; Motivation to Combine/Modify Senoh 105

E. Claim 9 106

1. [9P] A system comprising: 106
2. [9A] a processor; and 106
3. [9B] a storage facility accessible to the processor and containing code which, when executed by the processor, causes the processing system to 107
4. [9Bi] receive and store a plurality of items of digital content to be made available for use in wireless communication devices used by a plurality of wireless telecommunications subscribers, ... 108
5. [9Bii] including receiving and storing a plurality of different implementations of at least one of the items of digital content, where each implementation of any given item of digital content corresponds to a different set of device capabilities; 108
6. [9Biii] maintain a product catalog containing a description of the items of digital content, wherein the product catalog includes, in association with each item of digital content, a reference to each implementation of said item of digital content; 109
7. [9Biv] receive a request from a wireless device used by one of the subscribers; 109
8. [9Bv] in response to the request, select a portion of the product catalog to be presented to the subscriber, based on device capabilities of the wireless device used by the subscriber; and 109
9. [9Bvi] cause the selected portion of the product catalog to be presented to the subscriber via a wireless telecommunications network, such that the selected portion, as presented to the subscriber, provides only a single

description of each item of digital content in said portion, regardless of the number of implementations of each said item. 110

10. Senoh in view of Li Renders Claim 9 Obvious; Motivation to Combine/Modify Senoh 110

XII. CONCLUSION 110

XIII. DECLARATION IN LIEU OF OATH 111

EXHIBITS CONSIDERED

Exhibit No.	Description
Ex. 1001	U.S. Patent No. 7,233,790 to Kjellberg et al. ("the '790 Patent" or "the Challenged Patent")
Ex. 1003	File History Excerpts from U.S. Patent Application No. 10/600,746 obtained from PAIR
Ex. 1004	U.S. Patent Application Publication No. 2002/0078178 to Senoh ("Senoh")
Ex. 1005	U.S. Patent No. 6,035,339 to Agraharam et al. ("Agraharam")
Ex. 1006	U.S. Patent No. 6,421,726 to Kenner et al. ("Kenner")
Ex. 1007	U.S. Patent No. 6,345,279 to Li et al. ("Li")
Ex. 1008	K. H. Britton, et al. *Transcoding: Extending e-business to new environments*, IBM Systems J. Vol. 40, No. 1, 2001, pp.153-178.
Ex. 1009	Andrew Perkis, et al., *Universal Multimedia Access from Wired and Wireless Systems*, Circuits Systems Signal Processing, Vol. 20, No. 3, 2001, pp.387-402
Ex. 1010	Rakesh Mohan, et al., *Adapting Multimedia Internet Content for Universal Access*, IEEE Transactions on Multimedia, Vol. 1, No. 1 (Mar. 1999), pp.104-114
Ex. 1011	U.S. Patent No. 7,551,913 to Chien
Ex. 1012	U.S. Patent Application Publication No. 2001/0032355 to Jones

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I, A.L. Narasimha Reddy, Ph.D., hereby declare under penalty of perjury:

I. BACKGROUND, QUALIFICATIONS, ASSIGNMENT, COMPENSATION

1. I have been retained on behalf of Unified Patents, LLC to provide my opinions regarding the patentability of claims 1, 2, 4, and 8-9 of U.S. Patent No. 7,233,790. I refer to this patent as the '790 patent in this declaration. As part of this assignment, I was asked to provide some background information regarding the subject matter claimed in the '790 patent. And, I was asked to provide opinions about the obviousness of claims 1, 2, 4, and 8-9 in view of certain prior art techniques related to content distribution described in some patents and printed publications. A list of the materials that I evaluated appears at the beginning of this declaration.

2. Attached as Appendix A to this declaration is a true and correct copy of my Curriculum Vitae. This document provides further details about my education, experience, and publications.

A. Overview

3. I am currently the J.W. Runyon Professor of Electrical and Computer Engineering at Texas A&M University in College Station, Texas. I have over 25 years of experience in a wide variety of technologies and industries relating to data communications, storage systems, distributed systems, including the development of multimedia servers.

B. Academic Background

4. My academic credentials include a Bachelor's of Technology Degree in Electronics and Electrical Communications Engineering from the Indian Institute of Technology, in Kharagpur, India, in August 1985. I then received a Master's of Science and a Ph.D. degree in Computer Engineering from the

University of Illinois at Urbana-Champaign in May 1987 and August 1990, respectively.

C. Professional Experience

5. I have worked for over 25 years in the field of Electrical Engineering. My primary focus and research interest has been on Computer Networks, Storage Systems, Multimedia systems, and Computer Architecture. I have authored and coauthored over a hundred technical papers and several book chapters related to several of these interests, including on such topics as multipath routing, route control, high-speed networks, congestion, packet management, quality of service regulation, network security, network modeling, differentiated services, storage system enhancements, caching strategies, and multimedia system enhancements to name a few examples. I am listed as an inventor on five patents in the field of multi-node communication networks.

6. My employment history following my graduation from the University of Illinois at Urbana-Champaign began at the IBM Almaden Research Center in San Jose, California in 1990. At IBM, I worked on projects related to disk arrays, multiprocessor communication, hierarchical storage systems and video servers.

7. In 1995, I joined the faculty of the department of Electrical Engineering at Texas A&M University initially as an Associate Professor and was later promoted to a full, tenured professor. At Texas A&M, I am Associate Agency Director for Strategic Initiatives and Centers for the Texas A&M Engineering Experiment Station (TEES), which engages in engineering and technologyoriented research and educational collaborations. Further, I currently serve as Associate Dean for Research.

8. At Texas A&M, I have taught dozens of courses related to computer networking and communications, as well as computer architecture, multimedia systems and networks, topics in networking security, multimedia storage and

delivery, as well as networking for multimedia applications. I have also served on various committees for the benefit of the scientific community and the Texas A&M University community.

9. I am a member of a number of professional societies, including the Institute of Electrical and Electronic Engineers (IEEE), where I have been elevated to an IEEE Fellow, and the Association for Computing Machinery (ACM). I have been responsible for chairing or co-chairing numerous conferences and programs, as well as presenting research at major IEEE and ACM conferences. For example, I served as program co-chair for the 2008 5th International Conference on Broadband Communications, Networks and Systems, panels co-chair for the 2008 3rd International Conference on Communication Systems Software & Middleware, and panel chair of the IEEE Conference of High Performance Computer Architecture.

10. My recent presentations include a Keynote speech at International Conference on Information Technology-New Generations in 2013, a Keynote speech at IEEE International Symposium on Computers and Communications 2010, several invited talks including Georgia Tech (2013), COMSNETS Conference (2013), Int. Conf. on Networking and Communications (2012), Samsung (2011), Korea University (2011), Aijou University (2011), Catedra Series talk at University of Carlos III, Madrid (2009), Thomson Research, Paris (2009), Telefonica Research, Barcelona (2009) and a Distinguished seminar at IBM Austin Research Lab (2008).

11. I have received multiple awards in the field of networks and computer architecture. I received the NSF Career Award from 1996-2000. I received an outstanding professor award by the IEEE student branch at Texas A&M during 1997-1998, an outstanding faculty award by the department of Electrical and Computer Engineering during 2003-2004, a Distinguished Achievement award for

teaching from the former students association of Texas A&M University, and a citation "for one of the most influential papers from the 1st ACM Multimedia conference."

D. Compensation

12. I am being compensated for my services and reimbursed for reasonable expenses that I may incur while working on this matter. I have no financial interest in the outcome of this matter or any other matter that may exist between Unified Patents, on one hand and VideoLabs, Inc. on the other. My compensation does not depend in any way on the conclusions I reach or the outcome of this proceeding.

II. MATERIALS CONSIDERED

13. In developing my opinions relating to the '790 patent, I have considered the materials cited herein, including those itemized in the "Exhibits Considered" list preceding this declaration.

III. LEVEL OF ORDINARY SKILL IN THE ART

14. I have been asked to provide an opinion about what the qualifications of a person of ordinary skill in the art ("POSITA") in the field of the '790 patent would have been. The field of the '790 patent is generally directed to a system for distributing content online in formats that can be viewed by a diverse set of mobile devices. Ex. 1001, 1:13-18 ("At least one embodiment of the present invention pertains to systems and methods for providing digital content to wireless subscribers, and more particularly, to facilitating management and delivery of digital content from multiple suppliers to multiple wireless services subscribers in multiple domains."). By way of background, the '790 patent explains that a variety of mobile devices like "personal digital assistants (PDAs), and two-way

pagers, have become commonplace." Ex. 1001, 1:22-25. And, these wireless devices were able to provide a variety of functions to users, such as allowing them to play games, exchange email, download files, and send and receive video. Ex. 1001, 1:24-39.

15. For the purposes of my opinion regarding the qualifications of a POSITA, I have been asked to assume that the relevant date for determining the knowledge and qualifications of such a person for purposes of the '790 patent is the filing date of the four provisional applications cited on the face of the '790 patent—June 28, 2002. *See* Ex. 1001, cover.

16. I understand that the factors considered in determining the ordinary level of skill in the art include: (i) the levels of education and experience of persons working in the field; (ii) the types of problems encountered in the field; and (iii) the sophistication of the technology. I understand that a person of ordinary skill in the art is not a specific real individual, but rather a hypothetical individual having the qualities reflected by the factors above. This hypothetical person has knowledge of all prior art in the relevant field as if it were arranged on a workshop wall and takes from each reference what it would teach to a person having the skills of a person of ordinary skill in the art.

17. A POSITA would have had at least a bachelor's degree in electrical engineering or a similar field, such as physics, computer science, or computer engineering with two years of experience in delivery of digital content over wireless communications networks such as cellular, WiFi, or other wireless networks like Bluetooth. This person would have been knowledgeable about requirements for utilizing data received over the networks on a variety of different mobile devices as this was an issue that was discussed substantially in the literature as I explain below. *See Infra* §VIII.A. A person with more education and less industry experience could qualify as a POSITA if the educational experiences

provide some practical experience with content delivery over wireless links. These are not rigid qualifications, and a person with less education but more relevant hands-on experience may have been able to get sufficient exposure to the technical subject matter of the '790 patent to develop ordinary skill in the art with some equivalent combination of education and hands-on experience.

18. My opinions are supported by my education, including studies related to video data distribution systems and the relevant prior art identified in the list at the front of this declaration, and my reading of the '790 patent.

19. Because a person of ordinary skill in the art is presumed to have knowledge of all relevant prior art, a person of ordinary skill in the art would have been familiar with each of the references cited herein and the full range of teachings they contain. A person of ordinary skill in the art would have reviewed the various publications and patents I discuss herein at least because these prior art references address solutions to problems of ensuring various content is rendered properly on wireless devices.

20. As of June 2002, I had more than ordinary skill in the subject matter of the '790 patent. I am familiar with the skills and knowledge possessed by those I would have considered to be of ordinary skill in the art in the June 2002 time frame. When I refer to the understanding of a person of ordinary skill in the art, I am referring to the understanding of a person of ordinary skill in the art as of this effective filing date.

IV. OVERVIEW OF RELEVANT ASPECTS OF THE '790 PATENT

21. In this section, I provide an overview of some aspects of the '790 patent. The '790 patent describes a way of distributing "digital products from multiple suppliers to wireless services subscribers . . . ." Ex. 1001, Abstract. Using the system and methods of the '790 patent, "[p]roduct suppliers can publish and

manage their products on the server system via a computer network and make their products available to the subscribers for purchase or licensing." Ex. 1001, Abstract. "Multiple different implementations of any product can be maintained, where each implementation corresponds to a different set of device capabilities." Ex. 1001, Abstract.

22. Wireless devices according to the '790 patent had "become commonplace" and included "cellular telephones, personal digital assistants (PDAs) and two-way pagers . . . ." Ex. 1001, 1:22-25. The capabilities of these devices allowed users to play games, send email, download files, and "send and receive video." Ex. 1001, 1:34-39 (describing the "latest generation of mobile telephones (and other mobile devices)").

23. The '790 patent explains that end-users needed to obtain content directly from content suppliers via a wireless network using the Internet. Ex. 1001, 1:45-53. This was inconvenient insofar as it required users desiring multiple items of content from different sources to have to navigate to each of those sources to obtain the content. Ex. 1001, 1:53-59.

24. There were many types of devices available to end-users and these devices had a range of capabilities. Thus, another issue identified by the '790 patent was that content providers needed to deploy content multiple times and package it differently for each of the various devices on the market because those devices had different capabilities and provisioning models. Ex. 1001, 1:60-2:4.

25. The '790 patent explains that an embodiment of the invention included a step in which "multiple different implementations of at least one of the items of content are received, where each implementation corresponds to a different set of device capabilities." Ex. 1001, 2:60-63. Instead of going to each content provider individually, a product catalog is maintained which includes a description of the items of content and reference to "each implementation of the

item of content." Ex. 1001, 2:65-67. This technique is "implemented in a network server system that includes one or more server computer systems on a network" that includes "an application server referred to . . . as the 'download manager'." Ex. 1001, 3:63-4:1. Using the sever-based download manager application, content providers can make their content available to subscribers. Ex. 1001, 4:1-8.

26. Figure 1 of the '790 patent shows a "[t]he download manager 1" which "acts as an intermediary between multiple content suppliers . . . and multiple customers . . . , e.g., wireless services subscribers . . . ." Ex. 1001, 4:9-14.

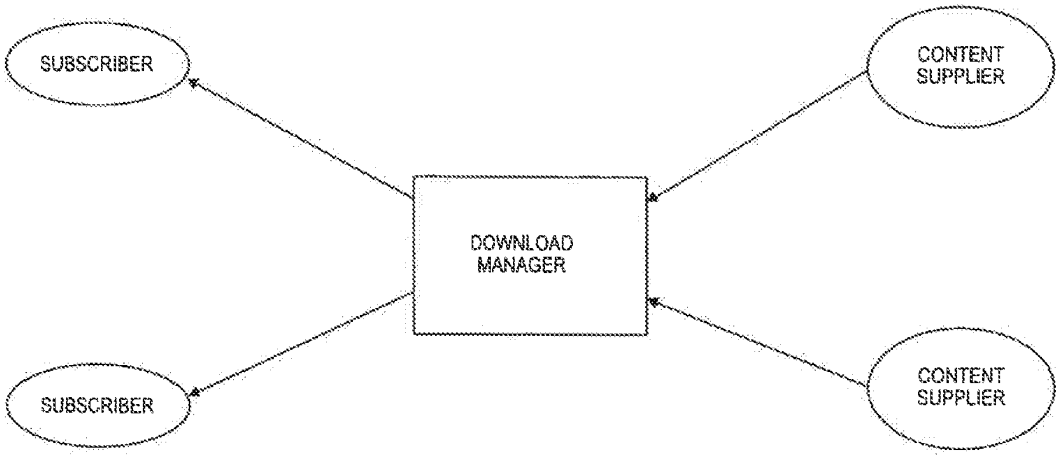
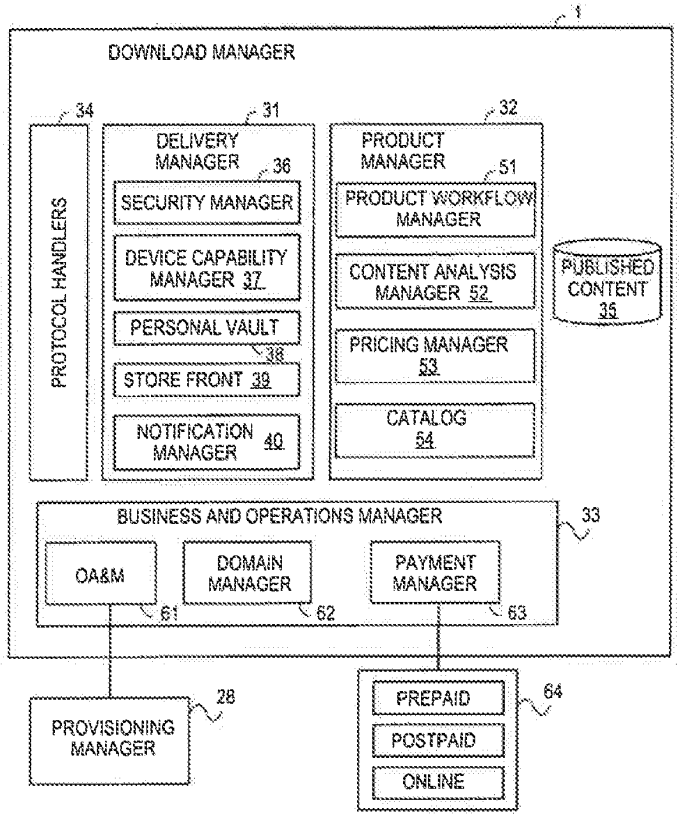


FIG. 1

Ex. 1001, FIG. 1.

27. Figure 3 of the '790 patent shows "a network architecture in which a download manager in accordance with the invention can be deployed." Ex. 1001, 3:13-14.



Ex. 1001, FIG. 3.

28. The download manager is an "application server" in a server system. Ex. 1001, 3:66-4:1. The download manager includes a "device capability manager" that is "responsible for device recognition (e.g., supporting device recognition through UAProf using Profile headers and Profile-Diff headers), device capability determination (e.g., retrieving device descriptors using best efforts and appending device capabilities to the session context), and device capability management (e.g., automated management of UAProf capable devices and quarantine of undefined or partially defined devices." Ex. 1001, 7:4-7, 7:31-39; *see also* Ex. 1001, 8:30-52. The identification of devices allows selection of "the appropriate implementations of products that are purchased," and further allows the system to "filter the set of

available products that a subscriber can discover." Ex. 1001, 7:39-45.

29. A product catalog includes "descriptions of all published items of content (products)" and references to "at least one implementation 57 of that product. Ex. 1001, 9:37-40. Multiple implementations of items may be published on the download manager and each may be "designed for a different specific client device or set of client devices." Ex. 1001, 9:44-48. "FIG. 5 shows the relationship between a product entry and implementations of the product in the product catalog." Ex. 1001, 3:19-20.

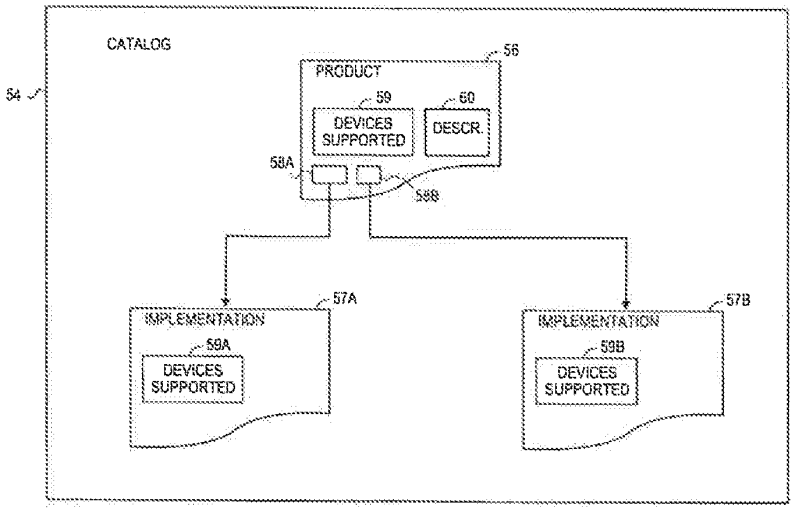


FIG. 5

Ex. 1001, FIG. 5. Here, "the catalog 54 includes, for each product entry 56, a reference 58 to at least one implementation 57 of that product." Ex. 1001, 9:38-40. The implementation can be a binary file, or two or more binaries, as shown in Figure 6:

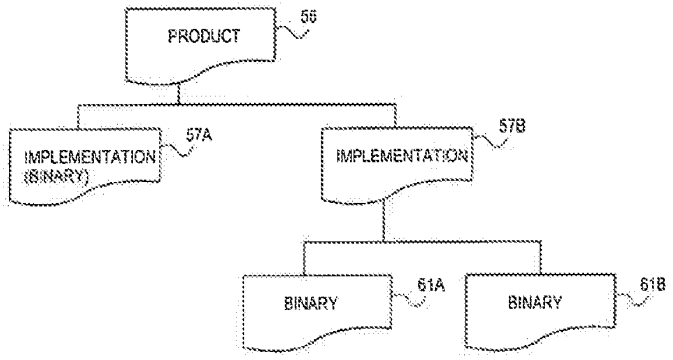


FIG. 6

Ex. 1001, FIG. 6. "Also represented in FIG. 5 and FIG. 6, any particular product may have multiple implementations published on the download manager, each of which may be designed for a different specific client device or set of client devices." Ex. 1001, 9:44-48.

V. THE PROSECUTION HISTORY

30. The application that led to the '790 patent was U.S. Patent Application No. 10/600,746. Ex. 1001, cover. The application was filed with 11 claims and they were all related to methods. Ex. 1003, pp.50-53. The first office action rejected claims 1-4 and 9. Ex. 1003, pp.21-23. But, claims 5-8 were allowed and 10-11 were objected to. Ex. 1003, pp.21-23. Original independent claims 5 and 6 are provided below:

> **Application Claim 5.** A method of providing access to content for use on wireless communication devices, the method comprising:
>
> receiving and storing a plurality of items of content to be made available for use in wireless communication devices used by a plurality of wireless services subscribers,
>
> including receiving a plurality of different implementations of at least one of the items of content,

where each implementation of any given item of content corresponds to a different set of device capabilities; and

maintaining a product catalog containing a description of the items of content, the product catalog including, in association with each item of content, a reference to each implementation of said item of content.

Application Claim 6. A method of providing access to digital content for use on wireless communication devices, the method comprising:

receiving and storing in a server system a plurality of items of digital content to be made available for use in wireless communication devices used by a plurality f wireless services subscribers, including receiving and storing a plurality of different implementations of at least one of the items of digital content, where each implementation of any given item of digital content corresponds to a different set of device capabilities;

operating the server system to maintain a product catalog containing a description of the items of digital content, wherein the product catalog includes, in association with each item of digital content, a reference to each implementation of said item of digital content;

receiving a request from a wireless device used by one of the subscribers;

in response to the request, selecting a portion of the product catalog to be presented to the subscriber, based on device capabilities of the wireless device used by the subscriber; and

presenting the selected portion of the product catalog to the subscriber via a wireless network, such that the selected portion, as presented to the subscriber,

provides only a single description of each item of digital content in said portion, regardless of the number of implementations of each said item.

Ex. 1002, Page 22 of 144

Ex. 1003, pp.51-53.

31. Dependent claims 7-8 and 11 depended directly or indirectly (through other dependent claims) on claim 6.

32. After the rejection, the Applicant added claims 12 and 13, which are directed to systems and include "limitations substantially similar to those in claims 5 and 6, respectfully." Ex. 1003, pp.12-13, 16. Claim 5 is issued claim 1. Claim 6 is issued claim 2. Claim 12 is issued claim 8. And claim 13 is issued claim 9. Ex. 1003, p.4.

33. When the examiner allowed the claims, he stated

> The prior art fails to disclose a method and system of accessing content on a wireless communication device, that specifically includes receiving and storing a plurality of different implementations of the items of content. Neither does the prior art teach maintaining a catalog describing the items of content. No obvious. combination of references found would have taught one of ordinary skill in the art to make and use applicant's method and system as claimed.

Ex. 1003, p.3. As explained below, I believe that there was important prior art that the patent examiner did not consider when allowing the claims. These prior art references show that the reasons that the examiner allowed the claims were incorrect.

VI. THE CLAIMS DISCUSSED IN THIS DECLARATION

34. I have been asked to render my opinion on the patentability of claims 1, 2, 4, and 8-9 of the '790 patent. Specifically I understand that claims 1, 2, 8, and 9 are independent claims. Claim 4 depends from claim 2, and thus includes all of the limitations of claim 2.

VII. LEGAL PRINCIPLES

35. I understand that a claim may be invalid under § 103(a) if the subject matter described by the claim as a whole would have been obvious to a hypothetical person of ordinary skill in the art in view of a prior art reference, or in view of a combination of references at the time the claimed invention was made. Therefore, I understand that obviousness is determined from the perspective of a hypothetical person of ordinary skill in the art, and that the asserted claims of the patent should be read from the point of view of such a person at the time the claimed invention was made. I further understand that a hypothetical person of ordinary skill in the art is assumed to know and to have all relevant prior art in the field of endeavor covered by the patent in suit and all analogous prior art. I understand that the standard for obviousness is by a preponderance of the evidence.

36. I also understand that an analysis of whether a claimed invention would have been obvious should be considered in light of the scope and content of the prior art, the differences (if any) between the prior art and the claimed invention, and the level of ordinary skill in the pertinent art involved. I understand as well that a prior art reference should be viewed as a whole. I understand that in considering whether an invention for a claimed combination would have been obvious, I may assess whether there are apparent reasons to combine known elements in the prior art in the manner claimed in view of interrelated teachings of multiple prior art references, the effects of demands known to the design community or present in the market place, and/or the background knowledge possessed by a person of ordinary skill in the art. I also understand that other principles may be relied on in evaluating whether a claimed invention would have been obvious, and that these principles include the following:

- A combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results;
- When a device or technology is available in one field of endeavor, design

incentives and other market forces can prompt variations of it, either in the same field or in a different one, so that if a person of ordinary skill in the art can implement a predictable variation, the variation is likely obvious;

- If a technique has been used to improve one device, and a person of ordinary skill in the art would have recognized that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill;
- An explicit or implicit teaching, suggestion, or motivation to combine two prior art references to form the claimed combination may demonstrate obviousness, but proof of obviousness does not depend on or require showing a teaching, suggestion, or motivation to combine, *see, e.g.*, Manual of Patent Examining Procedure § 2143(G);
- Market demand, rather than scientific literature, can drive design trends and may show obviousness;
- In determining whether the subject matter of a patent claim would have been obvious, neither the particular motivation nor the avowed purpose of the named inventor controls;
- One of the ways in which a patent's subject can be proved obvious is by noting that there existed at the time of invention a known problem for which there was an obvious solution encompassed by the patent's claims;
- Any need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed;
- "Common sense" teaches that familiar items may have obvious uses beyond their primary purposes, and in many cases a person of ordinary skill in the

Ex. 1002, Page 25 of 144

EX1014 - Page 286

art will be able to fit the teachings of multiple patents together like pieces of a puzzle;

- A person of ordinary skill in the art is also a person of ordinary creativity, and is not an automaton;
- A patent claim can be proved obvious by showing that the claimed combination of elements was "obvious to try," particularly when there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions such that a POSITA would have had good reason to pursue the known options within his or her technical grasp; and
- One should be cautious of using hindsight in evaluating whether a claimed invention would have been obvious.

37. I understand that, in making a determination as to whether or not the claimed invention would have been obvious to a person of ordinary skill in the art, the Board may consider certain objective factors if they are present, such as: commercial success of product(s) practicing the claimed invention; long-felt but unsolved need; teaching away; unexpected results; copying; and praise by others in the field. These factors are generally referred to as "secondary considerations" or "objective indicia" of non-obviousness. I understand, however, that for such objective evidence to be relevant to the obviousness of a claim, there must be a causal relationship (called a "nexus") between the claim and the evidence. I also understand that this nexus must be based on a novel element of the claim rather than something in the prior art. I also understand that there are instances when secondary considerations are unable to overcome primary evidence of obviousness (*e.g.*, motivation to combine with predictable results) that is sufficiently strong.

VIII. OVERVIEW OF THE PRIOR ART

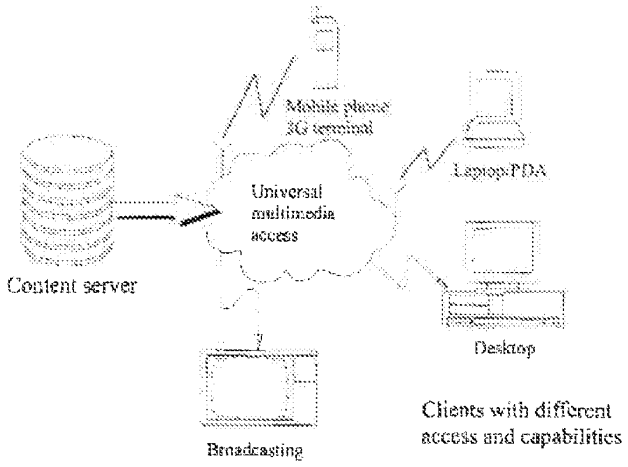
38. I have analyzed various prior art as summarized below. I also cite additional materials to show how a POSITA would have understood the disclosure of the references. I start my discussion with an overview of certain aspects of the technology that would have been understood by a POSITA when reading the prior art.

A. Technical Background

39. A POSITA was aware that there were a growing number of devices being used to access Web-based content, including devices that operated over wireless networks. As an article by Perkis explains "[p]ersonal computing and communication devices such as computers, personal digital assistants (PDAs), and mobile phones are moving to their next generation in which the end-user will be able to access a multitude of information with a single device either locally or through a network." Ex. 1009, p.387; *see also* Ex. 1001, 1:22-24 ("Personal mobile communication/computing devices, such as cellular telephones, personal digital assistants (PDAs) and two-way pagers, have become commonplace . . . ."); Ex. 1010, p.104. ("Some current examples of network appliances are hand-held computers (HPC's), personal digital assistants (PDA's), set-top boxes, screen telephones, smart cellular telephones and network computers."). These devices vary "widely in their features such as screen size, resolution, color depth, computing power, storage and software." Ex. 1010, p.104. And, in exchange for portability, wireless devices of the time had certain reduced capabilities to favor portability. *See* Ex. 1008, p.153 ("[T]he rapid appearance of wireless and other new networks with widely varying characteristics and the preponderance of new devices with a wide variety of capabilities creates new constraints on the solution. Devices that are designed to be easily carried and used in the field trade off some capabilities to gain this portability.").

40. Because of the diversity of devices, researchers were working on

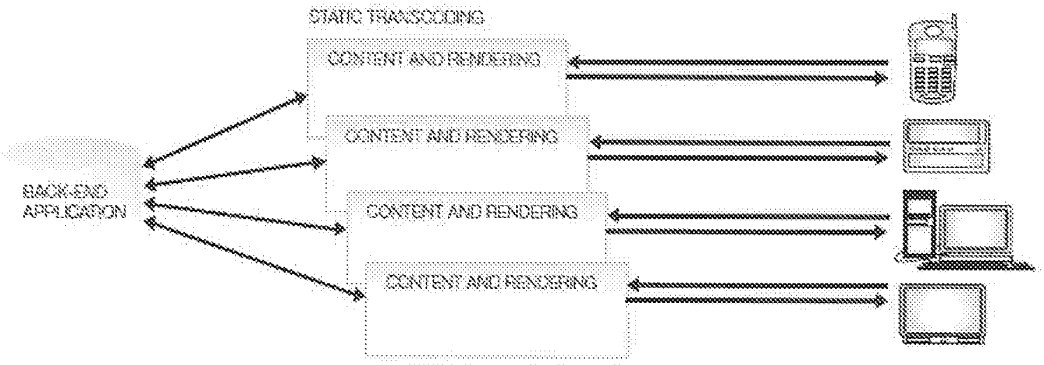
developing a concept called "universal multimedia access" or "UMA," which is a "concept for accessing multimedia content through a variety of possible schemes" to allow adaptation of the delivered content "when users attempt to access their choice irrespective of their terminal characteristics and communication infrastructure, as opposed to the assumption that the content remains fixed and the objective is to deliver the original content at all times." Ex. 1009, p.387; ("Universal multimedia access (UMA) [26] deals with the delivery of images, video, audio, and multimedia content under different network conditions, user and publisher preferences, and capabilities of terminal devices. A major motivation behind UMA is to enable terminals with limited communication, processing, storage, and display capabilities to access rich multimedia content," Ex. 1009, p.388.); ("The problem of adapting or customizing existing content to new applications and deliveries is not new," Ex. 1008, p.153); ("[T]echnologies that can adapt multimedia content to diverse client devices will become critical in the coming pervasive computing era," Ex. 1010, p.104). This concept is illustrated below:



Ex. 1009, p.389 (FIG. 1).

41. To make content available to a diverse set of devices, a POSITA knew that some form of "conversion of the original multimedia content" was required "to change from one modality to another," or content could be "scaled between different spatial and temporal resolutions." Ex. 1009, pp.390-392 ("One of the important issues in access to multimedia content across platforms and terminal capabilities is media conversion. It consists of converting the original data to different modalities and resolution versions."). "Transcoding, or adapting content from one form to another, is a key part of meeting these requirements for rapid, inexpensive deployment of new ways to access existing content." Ex. 1008, p.154.

42. An article by Britton explained that there are two principal categorical ways to perform the conversions of content. One way is what Britton called "static" transcoding, which entails taking a version of the content and creating various versions of that content before they are requested by user devices. This is illustrated below:



Ex. 1008, p.155. "With static transcoding of static content, different versions of the same content are produced by a designer, generally using various studio tools, and stored in the file system of the Web server." Ex. 1008, pp.155-156. This leaves the system having to select which version of the content to make available to the user's device. Ex. 1008, p.156. One way to do this was to create a "special home page"

with a "set of links" to content that is appropriate for the device. Ex. 1008, p.156. Dynamic content can also be transcoded using a static technique and the version to be provided "is based on information from the incoming request that describes the device." Ex. 1008, p.156. This technique had several advantages including "quality of presentation and performance," and allowed designers to ensure that their content appeared as they wanted it to and because "transcoding is done at the design time, the information is generated directly in the form required by the user's device. This reduces the run-time processing required to generate the information." Ex. 1008, p.156; Ex. 1010, pp. 105 ("The system generates transcoded versions of the content items prior to any requests; thus it can handle media items such as video and audio which are difficult to handle in proxies. The off-line transcoding also leads to lower response latencies than proxies."), 107 ("Transcoding is done off-line, unlike in previous proxy-based systems . . . ").

43. The other technique described by Britton was to use dynamic transcoding, which "consists of a set of techniques for tailoring the information generated for a user to match the specific presentation requirements of a given user on a given device on a given level of network service." Ex. 1008, p.156. "Both dynamic and static transcoding have a place in creating effective e-business sites." Ex. 1008, p.156.

44. A POSITA knew that using a combination of dynamic and static transcoding in the same system was another option. For instance, Britton explains that "[b]oth static and dynamic transcoding have a place in creating effective e-business sites. Some pages will be accessed frequently and will be seen as the signature pages for a business. For these, hand design will often be important. However, there are a number of considerations that will make dynamic transcoding more cost-effective." Ex. 1008, p.156. Agraharam, which I discuss below in more detail, teaches an example of a system where some content is transcoded before a

request for it is made and other, less popular implementations are created on the fly. For instance, Agraharam explains that "[b]ased on parameters such as most often requested information and specific characteristics of the information to be formatted, information may be formatted into predetermined formats for efficient delivery to the end-user," Ex. 1005, 4:39-43. "Cases that require formats other than the predetermined formats may be handled by formatting the information 'on-the-fly' to ensure optimal information delivery to, and reproduction by the end-user terminal 114." Ex. 1005, 4:53-57.

B. U.S. Patent Application Publication No. 2002/0078178 to Senoh

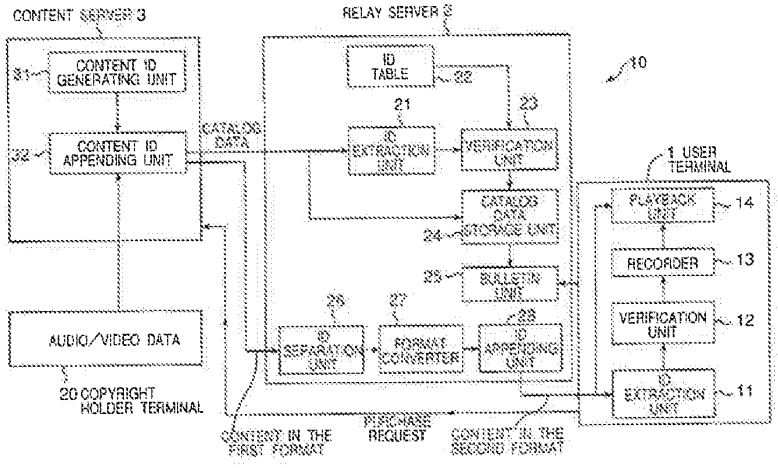
45. Senoh describes a way to engage in content distribution over a network "in a format enabling viewing and enjoyment at the user terminal." Ex. 1004, Abstract. In an older, conventional way to make content available, Senoh explains that "the content owner loads a catalog of the available content onto a web site and solicits users wanting the content." Ex. 1004, ¶[0004]. These items are available for a user to buy. Ex. 1004, ¶[0004]. According to Senoh, these prior art systems had no way to ensure that the requested content was compatible with the terminal making the request: "when the specifications of the distributed content differ from the specifications of the content that is viewable on the user's terminal or monitor," the user will be "unable to enjoy the content." Ex. 1004, ¶[0008]. One example of this was distribution of HD (high definition) content when the receiving device only had the ability to display in SD (standard definition). Ex. 1004, ¶[0008].

46. For full-length content such as audio and video, Senoh's solution to this problem was to generate content "in a first format specification," sent to a relay server and "content in a second format specification" is generated based on the characteristics of the terminal. Ex. 1004, ¶[0011]. Senoh's "content distribution

system" includes a user terminal, relay server, and content server. Ex. 1004, ¶[0029]. "[T]he content server 3 provides the content available for distribution (selling) on the relay server 2. Users can view the content published on the relay server 2 and purchase the desired content." Ex. 1004, ¶[0029]. Once the user requests a specific item of content from the relay server, the content server "sends the requested content to the relay server 2 in a first format specification." Ex. 1004, ¶[0029]. Then, "[t]he relay server 2 converts the content received from the content server 3 in the first format to a second format specification, and sends the reformatted content to the user terminal 1." Ex. 1004, ¶[0029]. Even though Senoh shows only one terminal in the figures "plural user terminals can be connected." Ex. 1004, ¶[0029].

47. Senoh's Figure 2 (below) shows the content distribution system including the content server, relay server, and user terminals.

Fig.2



Ex. 1004, FIG. 2.

48. The relay server 2 includes a "catalog data storage unit 24," which stores data received from content providers. Ex. 1004, ¶[0046]; Ex. 1004, ¶[0044] ("[T]he relay server 2 is a server computer accessible from the network and storing

a compiled catalog of plural catalog data entries."). Thus, the user can access the relay server and identify items that the user wants to purchase/license.

49. As a POSITA would have understood, the product catalog maintained by Senoh is kept "in order to market the content to a wider audience." Ex. 1004, ¶[0043]. Catalog data includes "previews of content highlights, a copyright notice, the title, content type, price, and where to contact to purchase the content." Ex. 1004, ¶[0043]. "If the content contains video, the relay server 2 preferably enables the content highlights to be previewed. If the content is audio (music), a selection of a particular length could be provided as a preview." Ex. 1004, ¶[0044]. Figure 4 shows "[a] sample catalog compiling plural catalog data entries."

Fig.4

CONTENT NAME	CONTENT 1	CONTENT 2	...
PREVIEW	PREVIEW OF CONTENT 1 (WITH DIGITAL WATERMARK)	PREVIEW OF CONTENT 2 (WITH DIGITAL WATERMARK)	...
CONTENT RECORDING DATE	2000.6.17	1999.12.31	...
WHO RECORDED THE CONTENT	TARO YAMASHITA	HANAKO UENO	...
TITLE	BATTLE IN PEBBLE BEACH	COUNTDOWN 2000	...
GENRE	SPORTS	EVENT	...
CONTENT TYPE	FINAL (GOLF TOURNAMENT)	NEW YEAR'S EVE	...
DUPLICATION FEE	$10	$5	...
...	...	...	...
CONTACT ADDRESS FOR THE BUYER	abc@def	ghi@jkl	...
			...
WARNING	UNAUTHORIZED ACT OF COPYING IS SUBJECT TO PENALTY		

CATALOG

Ex. 1004, FIG. 4.

50. The user can view the catalog data from their user terminal, which can be a "cellular phone." Ex. 1004, ¶¶[0045], [0057], [0060], [0074]. After viewing previews of the content, the user can elect to purchase the full-length content by contacting the content server. Ex. 1004, ¶¶[0045], [0057]. The content server also "requests the format supported by the user terminal 1 for viewing the content." Ex. 1004, ¶[0057]. The content is then provided from the content server to the relay

server. Ex. 1004, ¶[0058]. "If the format of the content received from the content server 3 is the same as format specified by the user, the relay server 2 simply sends the content directly to the user terminal 1." Ex. 1004, ¶[0058]. And, "[i]f the format of the content sent to the relay server 2 differs from the format required by the user terminal 1, the relay server 2 converts the received format to the format viewable from the terminal 1, and then transmits the content to the user terminal." Ex. 1004, ¶[0059]. Senoh explains that the term "viewable" means "that the user terminal 1 supports the format in which the content will be reproduced, or can display the content at the performance of the output display (the display performance of the monitor) of the user terminal 1." Ex. 1004, ¶[0059].

51. Senoh provides a discussion of the techniques involved in the format conversion process, and indicates that conversion may occur between different video formats and from video to still image. *See* Ex. 1004, ¶¶[0060]-[0061], [0064]-[0072]. Although Senoh focuses on ensuring that the full-length content requested by the user is converted into a format that can be viewed on the user's terminal, Senoh does not address the analogous issue of how to ensure that the catalog previews, which include pre-stored, shorter versions of the same content are matched to user devices. Thus, the POSITA would have seen that Senoh's system could be improved by techniques to ensure that catalog preview content is tailored in a way that can be viewed on various terminals including wireless devices like cellular phones.

C. U.S. Patent No. 6,035,339 to Agraharam et al.

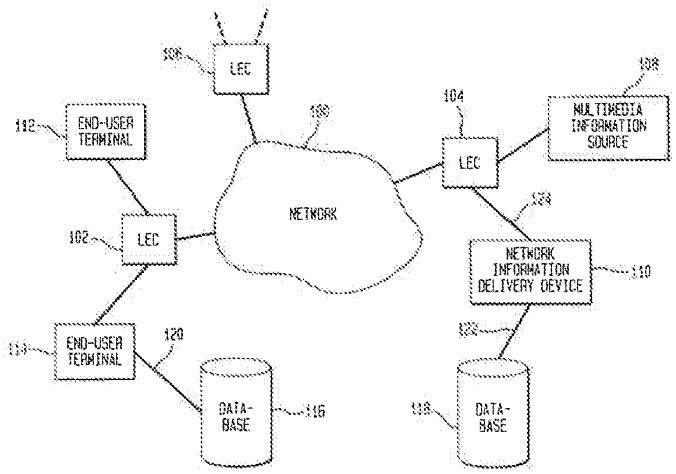
52. Agraharam describes a "network information delivery system" that "automatically determines end-user information output requirements based on predetermined data corresponding to each requesting end-user terminal." Ex. 1005, Abstract. According to Agraharam, prior art techniques required a content provider to solicit information about the user terminal capabilities via a menu. Ex. 1005,

1:11-14. After receiving the information from the user, "if choices are available," the requested content will be delivered to the user in the most compatible pre-formatted form. Ex. 1005, 1:20-23. But, requiring the user to declare the user terminal capabilities was "very inconvenient," and it may exceed the technical sophistication of the end-user. Ex. 1005, 1:24-28. "Thus, there is a need to provide a method and apparatus to more conveniently determine the user terminal capabilities and to deliver information so that the user terminal capabilities may be most effectively used." Ex. 1005, 1:31-35.

53. Agraharam thus proposes an "information delivery system that automatically determines end-user information output requirements based on predetermined data corresponding to each requesting end-user terminal," based on the contents of an "end-user profile" which is stored in a database. Ex. 1005, 1:38-44.

54. The content can be pre-formatted into a number of different formats for delivery to the user's terminal. Ex. 1005, 1:56-60 ("The information to be delivered to end-users may be pre-formatted into predetermined formats. The predetermined formats may be determined based on how often a particular format of the information is requested and characteristics of the information."), *see also* Ex. 1005, 4:39-43. Figure 1 shows Agraharam's network:

FIG. 1

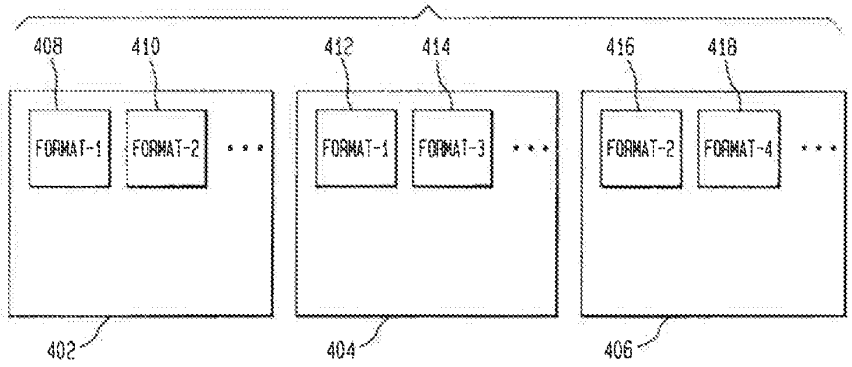


Ex. 1005 (Agraharam), FIG. 1, 2:26-30.

55. The network can include a wireless network. Ex. 1005, 2:30-33. "When an end-user using the end-user terminal 114 requests information such as multimedia information from the network information delivery device 110, the network information delivery device 110 first searches the contents of database 118 to determine information output requirements corresponding to the end-user terminal 114." Ex. 1005, 2:43-48. Based on the requirements, the multimedia data can be packaged and delivered according to the requirements of the end-user's terminal. Ex. 1005, 2:52-58.

56. As taught by Agraharam "end-user terminal requirements can be grouped which allows information such as multimedia information to be preformatted into predetermined formats," thus permitting "efficient delivery to the end-user." Ex. 1005, 4:39-43. Agraharam's Figure 4 shows "multimedia information 402, 404 and 406 being formatted in a plurality of formats such as format-1 to format-4," which can be for example, AVI or QuickTime formats. Ex. 1005, 4:44-49. Besides the pre-formatted data, data may also be formatted "on-the-fly" to ensure optimal information delivery to certain terminals. Ex. 1005, 4:49-57.

FIG. 4



Ex. 1005, FIG. 4.

D. U.S. Patent No. 6,421,726 to Kenner et al.

57. Kenner relates to "[a] system and method for the selection and retrieval of various types of video data from distributed delivery sites." Ex. 1006, Abstract. The delivery sites "maintain[] copies of the data in several alternative file formats." Ex. 1006, Abstract. "The appropriate file format is automatically selected based on the capabilities of a user terminal making a request for data." Ex. 1006, Abstract.

58. Kenner recognizes that the Web "has begun to host highly sophisticated types of multimedia content, such as audio and video data, and computer software," which have "extremely high storage and bandwidth requirements." Ex. 1006, 1:56-59.

59. To accommodate the size and bandwidth constrains, compression is used to reduce the data requirements. Ex. 1006, 1:60-2:3. Numerous compression formats are available. Ex. 1006, 1:67-2:3. Data is compressed using a CODEC, which is a coder-decoder. Because the techniques to encode a file must be precisely reversed to recover the compressed data (or at least part of the compressed data if lossy compression is used), the encoder and decoder need to match. Thus, Kenner explains that to decompress a file compressed in a particular

format, a specific codec is usually needed. Ex. 1006, 2:4-10 ("[A] single CODEC program can only recognize and decompress a single compression format."). "When a video clip is stored for transmission in a format which can be decompressed by the CODEC at a user terminal, delivery of the video clip to the user can proceed smoothly." Ex. 1006, 2:11-14. Kenner also explains that "when a service begins to make video clips available over the Internet, it is more likely that the video clips will be requested by a non-subscribing user whose multimedia terminal does not have the service provider's preferred CODEC." Ex. 1006, 2:19-24. This can lead the user to need to need to search for the correct CODEC and install it, which "can be difficult, time-consuming, or inconvenient . . . ." Ex. 1006, 2:26-32.

60. Kenner proposes a solution to allow the user device to access video clips using a codec installed on the user terminal. For example, Kenner explains that "a video clip is stored in a number of different formats at individual delivery sites connected to the Internet." Ex. 1006, 7:28-30. The terminal determines which codecs are installed and requests a video clip stored in the appropriate format. Ex. 1006, 7:37-40.

61. Kenner Figure 1 shows "an illustrative network topology of a system according to the invention including multiple users and multiple content providers." Ex. 1006, 7:49-51.

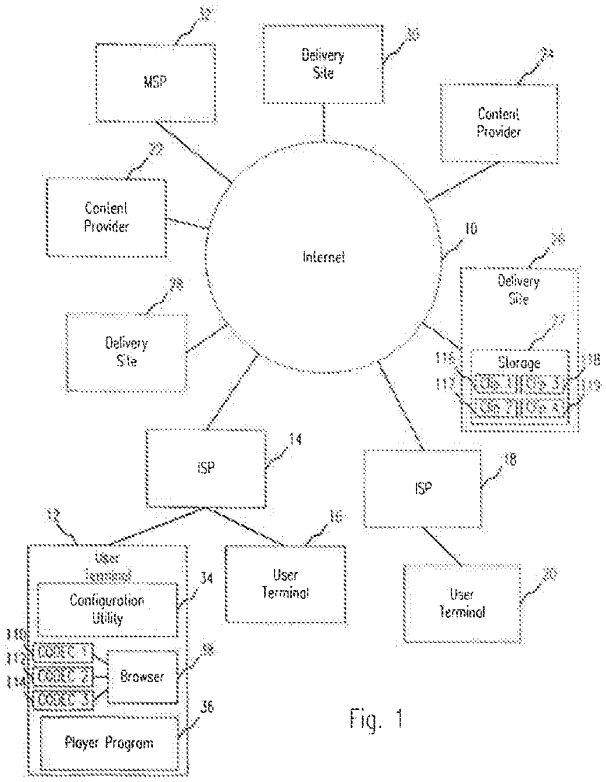


Fig. 1

Ex. 1006, FIG. 1.

62. The delivery site (26) "includes a storage module 27 for storing content such as audio/video clips." Ex. 1006, 8:45-46. Kenner's format selection technique "attempts to identify one o the video clips 116-119 as being in a preferred format that is both stored in the storage module 127 (FIG. 1) and supported by one of the CODECs (110-114) (FIG. 1)." Ex. 1006, 18:20-24.

63. Kenner's technique is summarized as follows. A web page can include an embedded reference to a video clip, and may also include an embedded software program. Ex. 1006, 18:18-24. When the web page is loaded, the program executes and provides a prioritized order of preferred CODECs for accessing the video. Ex. 1006, 18:36-42.

If one of the preferred CODECs is installed (step 126), a

> URL is created from the storage location of the video clip (step 128). For example, such a created URL might be 'http://www.deliverysite.com/clips/watchme". Note that the created URL does not have a format type extension. The created URL is then modified (step 130) by appending a format type extension (e.g. '.mpg' for MPEG-formatted clips, or '.avi' for Microsoft Video for Windows-formatted clips) to the location of the video clip. The format type extension used depends on the selected CODEC. The resulting URL (e.g., 'http://www.deliverysite.com/clips/watchme.mpg') uniquely specifies a video clip file in a format recognized by the preferred CODEC installed on the user terminal. This URL is then transmitted to the delivery site specified by the URL, and the clip is downloaded (step 132) and played (step 134). When the video clip file is received, the browser automatically invokes the proper CODEC for its display.

Ex. 1006, 18:48-65.

E. U.S. Patent No. 6,345,279 to Li et al.

64. Li deals with various types of content including "video, images, graphics, text and audio." Ex. 1007, 1:24-26. Li is concerned with providing universal access to Internet content. Universal access to multimedia needs to address the "wide variety of devices over a wide range of network environments" and this includes devices like "personal computers on a local area network (LAN), personal digital assistants (PDAs) on dial-up modems and smart cellular phones," which have different screen sizes, resolution, color depth, network bandwidth, and computing power. Ex. 1007, 1:26-36. Universal multimedia delivery methods "need to account for the composite nature of Web documents, and the variety of client platform capabilities, user interests, network constraints and authoring policies." Ex. 1007, 1:37-42.

65. Li's disclosed invention "relates to delivery of multimedia content to

client devices, and more particularly, to methods and apparatus for adapting such multimedia content for diverse client devices." Ex. 1007, 1:18-21. More specifically, Li describes "[a] method of adapting multimedia content to a client device wherein the multimedia content includes one or more items and the client device has capabilities and resources associated therewith . . . ." Ex. 1007, Abstract. The multimedia content is transcoded "into a plurality of transcoded content versions, wherein the plurality of transcoded content versions have different modalities and resolutions associated therewith." Ex. 1007, Abstract. When a transcoded version of the content is not compatible with the client device's capabilities, it is "filtered out." Ex. 1007, Abstract; *see also* Ex. 1007, 6:50-56, 10:63-67.

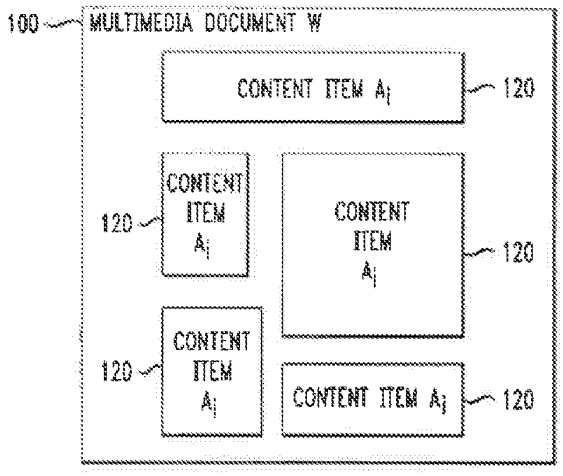
66. Content is initially authored in one or more modalities, such as text or an image. Ex. 1007, 2:21-23. Each content item is "transcoded into multiple resolution and modality versions so that they can be rendered on different devices." Ex. 1007, 2:23-25. For instance "a video item is transcoded into a selected set of images so that it can be rendered on a device not capable of displaying video." Ex. 1007, 2:25-28. "Each version of a content item requires different resources from the client device." Ex. 1007, 2:29-30. "If the client has limited resources, e.g., such as a PDA or pager, some of the content items may not get any resources assigned and thus not be delivered to the client." Ex. 1007, 2:34-39.

67. According to one embodiment, Li uses a data structure called an "InfoPyramid" to represent the different transcoded versions of the content and to use it in connection with the allocation of resources. Ex. 1007, 2:40-48. The invention has certain advantages including the ability of the "content author" to "edit and replace transcoded versions of content items generated by the automated transcoding systems," thus allowing control over customization and giving the publisher control over the content. Ex. 1007, 2:56-62. And, to enable more

efficient handling of audio and video content, "the invention permits the transcoded versions of the content items to be generated prior to any requests." Ex. 1007, 3:4-6. "This off-line transcoding also leads to lower response latencies than proxies." Ex. 1007, 3:8-10.

68. Li's Figure 1 shows "an example of a multimedia document." Ex. 1007, 4:4-5.

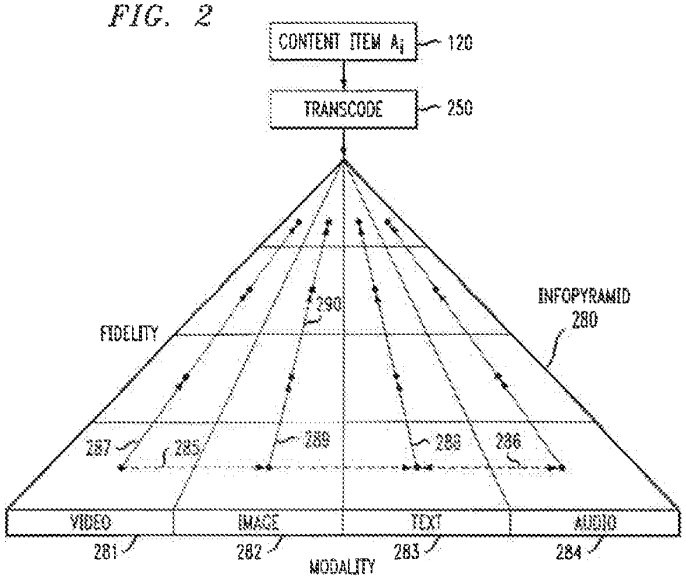
FIG. 1



Ex. 1007, FIG. 1. The document is identified as 100 and includes content items Ai identified as number 120. Ex. 1007, 4:4-14. "Each content item Ai, can be an atomic unit of media such as, for example, an image." Ex. 1007, 4:14-16.

69. Figure 2 is "a diagram illustrating an example of transcoding a content item into an InfoPyramid according to the invention . . . ." Ex. 1007, 4:20-23.

FIG. 2

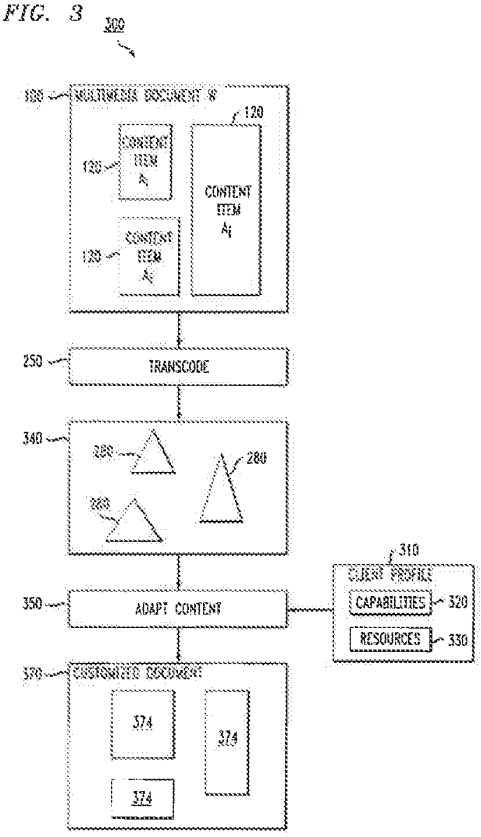


Ex. 1007, FIG. 2. "A content item 120 is transcoded . . . into an InfoPyramid 280" which is shown here as having several different resolutions and modalities. Ex. 1007, 4:21-26; Ex. 1007, 5:6-8 ("The transcoding process 250 populates the InfoPyramid 280 structure with multi-resolution, multi-modal versions of the content item . . . ."). "A specific version of a multimedia item can be referred to be one of the cells." Ex. 1007, 4:66-67.

70. Li's Figure 3 shows "a flow chart of a method 300 of adapting multimedia document 100 to a client device according to the invention . . . ." Ex. 1007, 5:63-65. The client device has a client profile 310 which specifies capabilities and resources. Ex. 1007 5:65-66, 6:8-9. Capabilities include things like image, video, and audio display capabilities, color capabilities. Ex. 1007, 6:9-19. Resources include things like screen size, bandwidth, and storage capacity. Ex. 1007, 6:19-29. The client device provides a profile through any one of a "number of mechanisms." Ex. 1007, 7:30-31. Content items 120 are transcoded into different modalities and fidelities to generate a set of info pyramids. Using the

client device profile, the correct modality and fidelity of the content item can be chosen from the InfoPyramids. Ex. 1007, 6:42-67.

FIG. 3



Ex. 1007, FIG. 3.

IX. CLAIMS 1 AND 8 WOULD HAVE BEEN OBVIOUS OVER SENOH IN VIEW OF AGRAHARAM

A. Claim 1

1. [1P] A method of providing access to content for use on wireless communication devices, the method comprising:

71. I understand that this portion of the claim is called the preamble. I further understand that there are certain legal principles that must be applied to

determine if the preamble of a claim is a limitation or not. I have not been asked to apply those principles. Instead, I have been asked to assume that the preamble of the claim is a limitation for the purposes of my analysis and I have done so.

72. The preamble is disclosed and rendered obvious by Senoh.

73. Senoh describes *a method of providing access to content for use on wireless communication devices*. On example of a user terminal described by Senoh is a "cellular phone." Ex. 1004, ¶[0060], [0074] & Table 1. A cellular phone is a *wireless communication device*.

74. Senoh discloses or renders obvious that there are multiple wireless communication devices by explaining that although the illustrations show only one user terminal in Figure 1, "[i]t will be obvious to one with ordinary skill in the related art that while only one user terminal 1 is shown in the figure, plural user terminals can be connected." Ex. 1004, ¶[0029]. The skilled artisan would understand this to mean that multiple cellular phones—i.e., wireless communication devices—can be connected to Senoh's network including relay and content servers.

75. Senoh's methods allow wireless communications devices to access content for use on the devices. For instance, Senoh explains that "catalog data" is generated and sent from a content server to the relay server. Ex. 1004, ¶[0043]. "The catalog data could contain previews of content highlights," Ex. 1004, ¶[0043], which may include "content highlights" or "a selection of a particular length" to be provided to a user's terminal when viewing the product catalog, Ex. 1004, ¶[0044]. The catalog's content, such as previews, can be accessed by the wireless communication devices via a "common bulletin board" from which "[u]sers can select desired content by accessing the bulletin board on the relay server 2 and view the catalog" before selecting an item to purchase. Ex. 1004, ¶[0045].

2. *[1Ai] receiving and storing a plurality of items of content to be made available for use in wireless communication devices used by a plurality of wireless services subscribers,*

76. Senoh discloses this limitation or at least renders it obvious. For example, Senoh explains that samples or previews of content, which are examples of items of content, are received and stored at the relay server:

> The content server 3 then generates and sends catalog data for the content to the relay server 2 in order to market the content to a wider audience. The catalog data could contain previews of content highlights . . . .

Ex. 1004, ¶[0043].

> Referring again to FIG . 2, the relay server 2 is a server computer accessible from the network and storing a compiled catalog of plural catalog data entries. If the content contains video, the relay server 2 preferably enables the content highlights to be previewed. If the content is audio (music), a selection of a particular length could be provided as a preview.

Ex. 1004, ¶[0044].

77. Because the content server "generates and sends" the catalog data including previews to the relay server, the relay server is a server "storing a compiled catalog of plural catalog data entries," Ex. 1004, ¶¶[0043]-[0044], the POSITA would have understood that a step is performed of *receiving and storing items of content*—i.e., catalog previews. These items are *made available for use in wireless communication devices used by a plurality of wireless services subscribers* because they are part of the catalog that is "accessible from the network" and accessed by users accessing the relay server 2:

> A sample catalog compiling plural catalog data entries is shown in FIG. 4. The catalog can be posted to a common bulletin board (electronic bulletin board) accessible form

> the network. Users can then select desired content be accessing the bulletin board on the relay server 2 and viewing the catalog.

Ex. 1004, ¶[0045].

78. As I explained above in connection with the preamble [1P], Senoh discloses and renders obvious using multiple cellular phones with are *wireless communication devices*. At the time of the alleged invention in or around June 2002, cellular phone service was provided by wireless or cellular carriers as a subscription service. Therefore, the POSITA would have understood that the cellular phones disclosed by Senoh are used by wireless service subscribers. At the very least, it would have been obvious to allow cellular services subscribers to access the relay server because subscription cellular services were prevalent. Indeed, a component of a GSM-enabled phone was known as the "subscriber identity module" or SIM and was used to identify the subscriber's device to the network. Ex. 1011, 2:5-7 ("A subscriber identity module (SIM) includes a user identifier and a transmitter is configured to transmit the user identifier.").

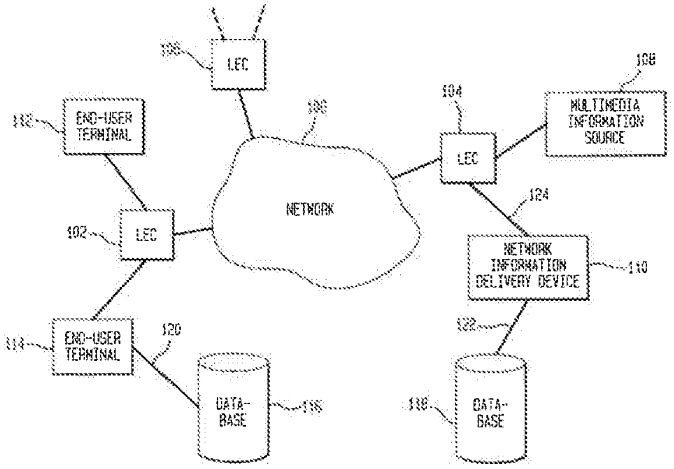
> 3. *[1Aii] including receiving a plurality of different implementations of at least one of the items of content, where each implementation of any given item of content corresponds to a different set of device capabilities; and*

79. Senoh describes receiving a plurality of items of content as discussed above in connection with limitation [1Ai]. And while Senoh explains how to ensure that the full-length content requested by the user from the content server conforms to device requirements, Ex. 1004, ¶¶[0057]-[0059], Senoh does not describe *receiving a plurality of different implementations of at least one of the items of content, where each implementation of any given item of content corresponds to a different set of device capabilities* in connection with the provision of video previews that are stored as part of the catalog data on the relay

server. This aspect of the claim would have been obvious over Agraharam.

80. Agraharam teaches *receiving a plurality of different implementations of at least one of the items of content, where each implementation of any given item of content corresponds to a different set of device capabilities*. "Information source 108" is the source of content in Agraharam's system.

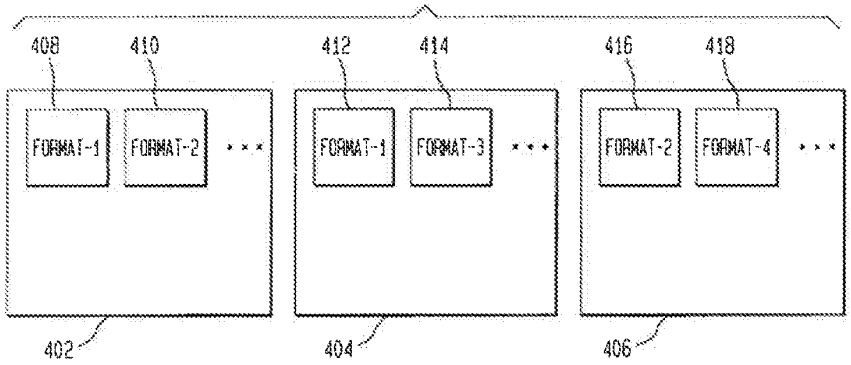
FIG. 1



Ex. 1005, FIG. 1, 2:39, 2:53-55, 4:31-33.

81. Content—which Agraharam calls "multimedia information"—is stored at the information source in different predetermined formats "for efficient delivery to the end-user." Ex. 1005, 4:39-43. An example of this is shown in Agraharam's Figure 4:

FIG. 4



Ex. 1005, FIG. 4. Here, "multimedia information" is indicated as items 402, 404, and 406. Ex. 1005, 4:44-57. And, different formats of that information is shown as items 408, 410, 412, 414, 416, and 418. Ex. 1005, 4:44-57. This content is "preformatted" for specific types of devices. Ex. 1005, 4:35-39. Thus, for example, items 408 and 410 are *different implementations of at least one of the items of content*, i.e., item 402.

82. In Agraharam, the differently formatted implementations of this content is then "deposited in the information delivery database" of the "information delivery device 110." Ex. 1005, 4:60-67. This information delivery device has a similar function to Senoh's relay server in that it "sends packaged information to the end-user terminal 114 through the network 100." Ex. 1005, 2:58-60. Thus, Agraharam teaches *receiving* the different implementations, which are then stored for later use when requested by a user.

83. Moreover, Agraharam teaches that *each implementation of any given item of content corresponds to a different set of device capabilities* because Agraharam explains that "end-user terminal requirements can be grouped which allows information such as multimedia information to be preformatted into predetermined formats." Ex. 1005, 4:35-39. The preformatting of content into

different formats based on "end-user terminal requirements" which are "grouped" shows that the different implementations correspond to *different set[s] of device capabilities*. This is confirmed by the fact that for certain devices which may not be reflected in the different implementations (formats) stored in the database, "formatting the information 'on-the-fly'" is used to "ensure optimal information delivery to, and reproduction by the end-user terminal 114." Ex. 1005, 4:53-57.

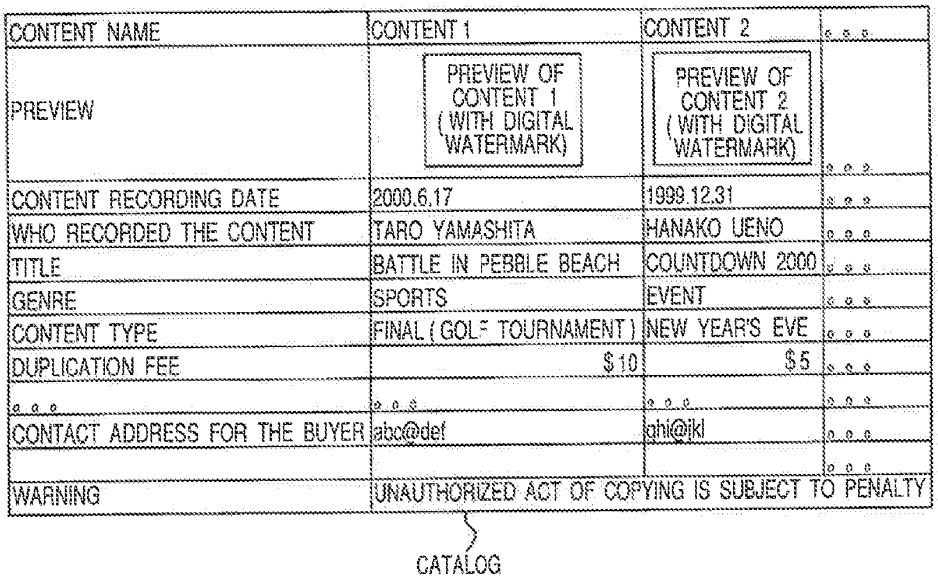
84. A POSITA would have found it obvious to perform a method including a step of *receiving a plurality of different implementations of at least one of the items of content, where each implementation of any given item of content corresponds to a different set of device capabilities* based on the combined teachings of Senoh and Agraharam, for the reasons I discuss in detail below in §IX.A.5.

> 4. *[1B] maintaining a product catalog containing a description of the items of content, the product catalog including, in association with each item of content, a reference to each implementation of said item of content.*

85. Senoh discloses *maintaining a product catalog containing a description of items of content*. But, Senoh does not disclose *the product catalog including, in association with each item of content, a reference to each implementation of said item of content*. This latter aspect of the claim would have been obvious over the combined teachings of Senoh and Agraharam, as I discuss below.

86. First, Senoh discloses *maintaining a product catalog containing a description of items of content*. This is illustrated in Senoh's Figure 4:

Fig.4



Ex. 1004, FIG. 4. This product catalog is maintained at the relay server, as explained by Senoh:

> The content server 3 then generates and sends catalog data for the content to the relay server 2 in order to market the content to a wider audience. The catalog data could contain previews of content highlights . . . .

Ex. 1004, ¶[0043].

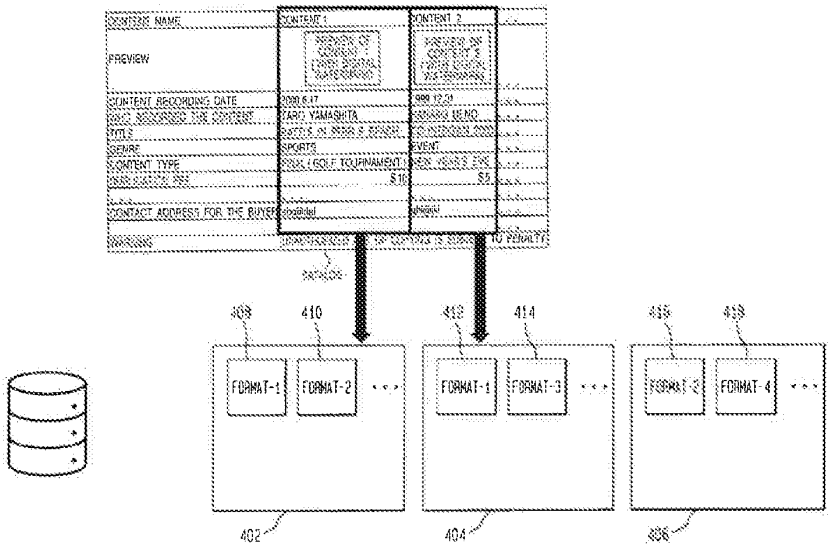
> Referring again to FIG . 2, the relay server 2 is a server computer accessible from the network and storing a compiled catalog of plural catalog data entries. If the content contains video, the relay server 2 preferably enables the content highlights to be previewed. If the content is audio (music), a selection of a particular length could be provided as a preview.

Ex. 1004, ¶[0044]. Therefore, Senoh describes a method that includes *maintaining a product catalog containing a description of items of content*, such as "Content 1" and "Content 2" as illustrated in FIG. 4. The description includes a preview of the

content, as explained above.

87. Based on the combined teachings of Senoh and Agraharam, it would have been obvious to include a *reference to each implementation of each item of content* in the product catalog as recited in this claim. First, as I have explained above, and in detail below, it would have been obvious to receive multiple implementations of the items of content and store them at Senoh's relay server as part of the product catalog. *Supra* §IX.A.3; *Infra* §IX.A.5. Based on this obvious modification, a POSITA would have understood and found it obvious to ensure that Senoh's product catalog referenced not only each item of content stored in the relay server database, but also each implementation of each item of content.

88. The following illustration shows how a POSITA would have combined the concepts from Agraharam with Senoh's product catalog to allow access to versions of the preview content in a manner that can be best displayed on the user's terminal.



At the top of the illustration is a copy of Senoh's product catalog illustration shown as FIG. 4. This includes multiple items of content, namely "Content 1" and

"Content 2." Ex. 1004, FIG. 4. A POSITA having stored multiple versions of the product previews in Senoh's relay server would have understood that each entry in the catalog including a preview would have pointed to—or referenced—the different implementations for each item of content so that they could be retrieved and served to the user terminal from the relay server's storage. Ex. 1004, ¶[0044] (referring to "the relay server 2 is a server computer accessible from the network and storing a compiled catalog of plural catalog data entries"). This is shown in the bottom of the illustration in which I have reproduced Figure 4 from Agraharam to show how each item of content from Senoh corresponds to the items of content from Agraharam, and how each item of content will reference each of the implementations of that content. In this way, the combined Senoh-Agraharam system would have performed a step of maintaining a product catalog that included *in association with each item of content, a reference to each implementation of said item of content*, as shown in the illustration above. Indeed, this reference to data stored at the relay server is the same as the reference described in the '790 patent, which appears to merely be a reference to data stored in a database:

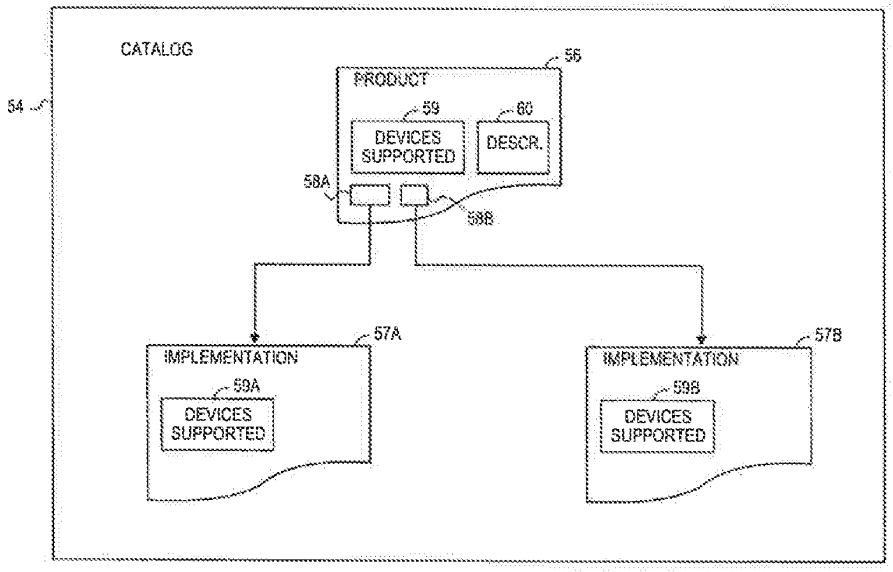


FIG. 5

Ex. 1001, FIG. 5, 938-40 ("Referring to FIG. 5, the catalog 54 includes, for each product entry 56, a reference 58 to at least one implementation 57 of that product."). As explained in detail below, this would have allowed Senoh's relay server to serve a preview that best fit the capabilities of the terminal to, among other things, improved the user experience.

89. It would have been obvious to implement Senoh's catalog to refer to each implementation of the items of content based on the combined teachings of Senoh and Agraharam for the reasons that I explain in detail in the next section.

5. Senoh in view of Agraharam Renders Claim 1 Obvious; Motivation to Combine/Modify Senoh

90. As explained above, Senoh does not explicitly disclose (1) *receiving a plurality of different implementations of at least one of the items of content, where each implementation of any given item of content corresponds to a different set of device capabilities*, or (2) *the product catalog including, in association with each*

item of content, a reference to each implementation of said item of content.

91. Although Senoh does not teach *receiving a plurality of different implementations of at least one of the items of content, where each implementation of any given item of content corresponds to a different set of device capabilities* it would have been obvious to modify Senoh's catalog stored in the relay server such that the relay server received (and stored) a plurality of different implementations of at least one of the items of content, where each implementation of any given item of content corresponds to a different set of device capabilities for several reasons based on the teachings of Agraharam. There are several things that support my conclusion.

92. First, that different devices have different capabilities was well known and a problem that POSITAs had been working on addressing in the years leading up to the June 2002 provisional application filing date as I have explained above. *Supra* §VIII.A. This problem began to significantly manifest with increasing frequency as diverse types of mobile devices with a wide range of capabilities began to be able to access the Internet and the Internet began including a variety of multimedia content. *Supra* §VIII.A.

93. Based on this, POSITAs would have understood that when reading Senoh, that Senoh's previews should be delivered to devices in a format that the devices could interpret and display or playback. Senoh does not explain how to ensure that various user terminals, , having different viewing requirements and device capabilities can view the various previews in the catalog, although this was a known problem as I have explained above and which Senoh deals with as well for full-length content. *Supra* §VIII.A. A POSITA would have looked for a way to ensure that previews stored at Senoh's relay server were displayed in a format that is best suited for the device accessing it, such as various cellular phones or other wireless communication devices. A solution to this problem was taught in

Agraharam as explained above.

94. Based on Agraharam, a POSITA would have been motivated to perform a step of receiving (and storing) preview data in different implementations corresponding to different devices that access Senoh's catalog so that a wide variety of devices would have been able to preview the content from the catalog in an optimal format, thus further disseminating the content to a variety of users. Indeed, maximizing the distribution of the content was one of the goals of Senoh's catalog. Ex. 1004, ¶[0043] (explaining that the catalog is for marketing "content to a wider audience"). This would have allowed Senoh's product catalog to be accessed by a wider audience.

95. The POSITA would have recognized that Senoh's video previews could be made more efficient and would have looked to Agraharam's more efficient solution of predetermined formats for previews stored at the relay server for several reasons.

96. First, the POSITA would have found the Agraharam solution attractive because POSITAs knew that content creators wanted to ensure that their content displayed the way that they wanted it to display. This is discussed above, and is taught as one of the primary advantages of the technique that the Britton article calls "static transcoding." Ex. 1008 (Britton), p.156 ("The primary advantages of static transcoding are quality of presentation and performance. . . . Each page is constructed by a human designer, generally working with tools that show how the application will look or sound and thus allowing the presentation to be hand-tailored for each environment."); *supra* §VII.A. The better the preview looked and displayed on the device and the faster it was served to the user, the more likely the user would be to purchase the content. Conversely, the POSITA would have appreciated that if the preview rendered poorly or slowly on the device, the perceived quality of the original content would be worse and thus

decrease the likelihood of a user purchasing it. Therefore, the POSITA would have seen receiving different, preformatted implementations of the content as taught by Agraharam to be beneficial in initially marketing the content.

97. Second, because the previews are accessible from different content creators at the relay server via the catalog, the POSITA would have understood that the previews originated from a variety of sources. This is clear from Senoh, which explains that the copyright holder terminal 20 and the content server 3 could be the same computer, that each copyright holder is assigned a unique copyright holder ID, and presenting an illustration of the ID table in the relay server with numerous copyright holder IDs. Ex. 1004, ¶¶[0032], [0035], [0054], and FIG. 5. Therefore, the POSITA would have understood that attempting to fetch and dynamically transcode a variety of preview content for viewing on the end-user terminal would have added latency to the system, perhaps resulting in one preview being accessible significantly before another, as the content from the catalog is retrieved by the relay server, transcoded, and then downloaded to the user terminal. Latency impacts the user experience when browsing the Web. Moreover, while a user may be willing to wait for transcoding and downloading of a full-length item of content like a movie, the same user is unlikely to wait that long to preview content in the catalog as they quickly view multiple previews searching for content of interest. Therefore, using a transcoding technique like that disclosed in Agraharam on the Senoh content previews would have been seen as a way to reduce latency, particularly in cases in which resource intensive coding for audio or video was being performed.

98. Third, storing multiple implementations of an item of content (previews) is one of a finite number of predictable solutions available to the POSITA for enabling content to be tailored to the user terminals requesting Senoh's previews. Besides receiving and storing different implementations of

items of content, one implementation could be received and transcoded at the relay server; implementations may be transcoded on the fly from a single implementation, or the catalog content could be kept at content servers and either transcoded there statically or dynamically. *Id.*. These solutions all had predictable results as the concepts of "static" transcoding and "dynamic" transcoding were discussed in the literature and had known implications. *See, e.g.*, Ex. 1008, pp.154-157. Additionally, it was not uncommon for these solutions to be used in combination in the same systems. As I explained above, the Britton article explains that "[b]oth static and dynamic transcoding have a place in creating effective e-business sites. Some pages will be accessed frequently and will be seen as the signature pages for a business. For these, hand design will often be important. However, there are a number of considerations that will make dynamic transcoding more cost-effective." Ex. 1008, p.156. Agraharam, teaches an example of a system where some content is transcoded before a request for it is made and other, less popular implementations are created on the fly. For instance, Agraharam explains that "[b]ased on parameters such as most often requested information and specific characteristics of the information to be formatted, information may be formatted into predetermined formats for efficient delivery to the end-user." Ex. 1005, 4:39-42. Agraharam also explains that"[c]ases that require formats other than the predetermined formats may be handled by formatting the information 'on-the-fly' to ensure optimal information delivery to, and reproduction by the end-user terminal 114." Ex. 1005, 4:53-57.

99. The POSITA would have recognized that Agraharam's technique of encoding different implementations of items of content and storing them at a location in a network was a known, predictable technique. Applying the Agraharam technique to Senoh's system would have led the POSITA to store multiple implementations of the preview content items in a database/repository in

Senoh's relay server and would have merely applied a known technique to Senoh's known system. As explained in the preceding paragraphs, Senoh's system would have benefited from this improvement and was thus ready for improvement by the POSITA.

100. Agraharam provides a known solution to a problem that the POSITA would have seen in Senoh's catalog system. Specifically, as I have explained above, Senoh's catalog previews could be improved to be rendered well on diverse terminals by transcoding into different formats for a variety of user terminals. Applying Agraharam's technique to Senohs' previews by transcoding the previews into different formats for different terminal capabilities would have provided only predictable results—namely better ensuring that user terminals could view the preview content on their terminals and support a broad range of terminal types and capabilities.

101. Moreover, the POSITA would have had a reasonable expectation of succeeding in combining the teachings of Agraharam and Senoh the Agraharam technique it provides a known simple technique to provide multimedia content to diverse device types in an efficient manner and would have been easily incorporated into Senoh's system using existing transcoding and data communication techniques.

102. Additionally, it also would have been obvious to include a reference to each implementation of each item of content as recited in this claim based on the combined teachings of Senoh and Agraharam. Based on the modification I have discussed above in which Senoh's relay server would have received multiple implementations of the content items tailored to different device types, it would have been further obvious that Senoh's catalog would reference not only each item of content stored in the relay server database, but also each implementation of each item of content. I provided an illustration above to show how a POSITA would

have understood the combined teachings of Senoh and Agraharam, and how a reference to each implementation would have allowed Senoh's product catalog to be conveyed with the correct content tailored for the particular end terminal formatted in the best format possible for the device.

103. A POSITA would have found it obvious to implement Senoh's catalog to refer to each implementation of said item of content because such an arrangement would allow the system to select specific previews in a specific format in a manner that allows the system to provide the desired content to the user in a format that was best-suited for the user's terminal. In other words, it would enable the Senoh-Agraharam system to provide the implementation appropriate for the user terminal to the terminal viewing the catalog as contemplated by Senoh. Ex. 1004, ¶[0059] ("If the format of the content sent to the relay server 2 differs from the format required by the user terminal 1, the relay server 2 converts the received format to the format viewable by the user terminal 1, and then transmits the content to the user terminal 1."); Ex. 1005, 4:27-30 ("[T]he network information delivery device 110 can automatically determine the best information delivery parameters required for effective delivery of the information requested by the end-user.").

104. A POSITA would have been motivated to associate references to the stored implementations of the items of the content and thus references to each implementation of the items of content with the listings of those items of content in the catalog because doing so would have allowed the combined system to provide requested content to the end-user in a format that is viewable by the end-user on their terminal. Additionally, the POSITA would have expected to succeed in adding references to multiple implementations in the product catalog because references allowed access to stored content and had been routinely used to access databases to retrieve content based on the references well before the '790 patent.

B. Claim 8

1. *[8P] A system comprising:*

105. I understand that this portion of the claim is called the preamble. I further understand that there are certain legal principles that must be applied to determine if the preamble of a claim is a limitation or not. I have not been asked to apply those principles. Instead, I have been asked to assume that the preamble of the claim is a limitation for the purposes of my analysis and I have done so.

106. The preamble is disclosed by Senoh because Senoh describes *a system*, namely "an electronic content distribution system." Ex. 1004, Abstract, FIG. 2, ¶[0022] (FIG. 2 shows "a specific configuration of [the] content distribution system").

2. *[8A] a network interface through which to communicate over a communication network; and*

107. Senoh discloses or renders obvious a *network interface through which to communicate over a communication network.*

108. Senoh explains that "[c]ontent distribution system 10 has a user terminal 1, relay server 2, and content server 3. The user terminal 1, relay server 2, and content server 3 are each connected to a communication network 4, such as the Internet through which they can communicate with each other." Ex. 1004, ¶[0029]. The interface between hardware connected to the network and the network itself is a network interface, as a POSITA would have understood. *See, e.g.*, Ex. 1012, ¶[0051] ("A network interface is a component or mechanism by which a device connects to a network."). The POSITA would have appreciated there is a network interface in each of the relay server, content server, and user terminal that allows data to be physically communicated from these systems over the network such as the Internet as taught in Senoh. Ex. 1004, ¶¶[0043] ("The content server 3 generates and sends . . . ."), [0044] ("the relay server 2 is a server computer

accessible from the network"), [0058] ("the content server 3 . . then sends the content desired by the user to the relay server 2 . . . the relay server 2 simply sends the content directly to the user terminal 1"). Therefore, a POSITA would have understood Senoh to disclose a network interface that permitted the various network entities to physically exchange data with one another.

3. [8B] a download manager to

109. The '790 patent describes a download manager as follows: "The server system includes an applications server referred to here as the 'download manager'." Ex. 1001, 3:66-4:1. Senoh teaches an application server called a relay server that is part Senoh's server system and constitutes a download manager. Senoh explains that the "relay server 2 converts the content received form the content server 3 in the first format to a second format specification, and sends the reformatted content to the user terminal 1." Ex. 1004, ¶[0029]. Senoh explains that the relay server performs the functionality of receiving catalog data, storing it, and providing the catalog to end-user terminals. Ex. 1004, ¶¶[0043]-[0045]. A POSITA would have understood that the relay server in Senoh is a download manager because it is an application server that provides data to end-user clients over a network.

4. [8Bi] receive and store a plurality of items of content to be made available for use in wireless communication devices used by a plurality of wireless telecommunications subscribers,

110. This limitation is not different from Limitation [1Ai] in any material way. I have discussed that limitation above. My analysis of that limitation of claim 1 is equally applicable here.

5. [8Bii] including receiving a plurality of different implementations of at least one of the items of content, where each implementation of any given item of content corresponds to a different set of device capabilities; and

111. This limitation is not different from Limitation [1Aii] in any material way. I have discussed that limitation above. My analysis of that limitation of claim 1 is equally applicable here.

6. [8Biii] maintain a product catalog containing a description of the items of content, the product catalog including, in association with each item of content, a reference to each implementation of said item of content.

112. This limitation is not different from Limitation [1B] in any material way. I have discussed that limitation above. My analysis of that limitation of claim 1 is equally applicable here.

7. Senoh in view of Agraharam Renders Claim 8 Obvious; Motivation to Combine/Modify Senoh

113. The differences between the subject matter of claim 1 and Senoh and Agraharam are discussed above in §IX.A.5. The same differences are present between claim 8 and Senoh and Agraharam. The reasons that the claimed subject matter would have been obvious, including reasons that the POSITA would have found claim 8 obvious are the same as those that I have provided with respect to claim 1 and I incorporate by reference my analysis of claim 1 here. *See supra* §IX.A.

X. CLAIMS 1-2, 4, AND 8-9 WOULD HAVE BEEN OBVIOUS OVER SENOH IN VIEW OF KENNER

A. Claim 1

1. [1P] A method of providing access to content for use on wireless communication devices, the method comprising:

114. I understand that this portion of the claim is called the preamble. I further understand that there are certain legal principles that must be applied to determine if the preamble of a claim is a limitation or not. I have not been asked to apply those principles. Instead, I have been asked to assume that the preamble of the claim is a limitation for the purposes of my analysis and I have done so.

115. The preamble is disclosed and rendered obvious by Senoh for the same reasons I have discussed above in my discussion about the combination of Senoh and Agraharam. *See supra* §IX.A.1. I incorporate that discussion here by reference.

2. [1Ai] receiving and storing a plurality of items of content to be made available for use in wireless communication devices used by a plurality of wireless services subscribers,

116. This limitation is disclosed and rendered obvious by Senoh for the same reasons I have discussed above in my discussion about the combination of Senoh and Agraharam. *See supra* §IX.A.2. I incorporate that discussion here by reference.

3. [1Aii] including receiving a plurality of different implementations of at least one of the items of content, where each implementation of any given item of content corresponds to a different set of device capabilities; and

117. Senoh describes receiving a plurality of items of content as discussed above in connection with my discussion of the combination of Senoh and

Agraharam, limitation [1Ai]. *Supra* §IX.A.3. And while Senoh explains how to ensure that the content requested by the user from the content server conforms to device requirements, Ex. 1004, ¶¶[0057]-[0059], Senoh does not describe *receiving a plurality of different implementations of at least one of the items of content, where each implementation of any given item of content corresponds to a different set of device capabilities* in connection with the provision of video previews that are stored as part of the catalog data on the relay server. In fact, Senoh does not explain how to ensure that different user terminals having different capabilities can access and view the previews. This aspect of the claim would have been obvious over Kenner.

118. Like Senoh, Kenner describes "[a] system and method for the selection and retrieval of various types of video data from distributed delivery sites . . . ." Ex. 1006, Abstract. Kenner describes the servers that store content like video "Smart Mirror" sites. Ex. 1006, Abstract. These Smart Mirror sites store "copies of . . . data in several alternative file formats." Ex. 1006, Abstarct. To allow a variety of different devices having different capabilities (and specifically installed CODECs) to access the content, Kenner describes a technique that allows "[t]he appropriate file format [to be] automatically selected based on the capabilities of a user terminal making a request for data." Ex. 1006, Abstract. The technique avoids difficulties and inconvenience of having a user need to locate and install an appropriate codec for particular content. Ex. 1006, 2:26-32.

119. Kenner's "format selection scheme" is used "to automatically select a video clip file compressed in a format recognized by a CODEC program already installed and operative on a user terminal." Ex. 1006, 6:1-4.

120. Kenner explains the following:

> A Web page hosting an embedded video clip also includes code to activate the Smart Mirroring and format selection

> schemes. Accordingly, a video clip selection and retrieval system according to the invention stores each video clip at various locations in a number of different compression formats. A format selection module comprises software programs that instruct the user terminal to determine which CODEC programs are installed at a user terminal, select a preferred CODEC for use, locate video clips stored in a compression format recognized by the preferred CODEC, and redirect or modify a video request so the video delivery system can locate and retrieve the desired clip. Where no appropriate CODEC is detected, the format selection module prompts the user to download and install a preferred CODEC.
>
> In a first embodiment of the format selection module, a video clip is stored in a number of different compression formats at individual delivery sites connected to the Internet. The video clip and its address are referenced on a Web page providing access to the server. The Web page also contains an embedded software program for querying the user terminal to determine what CODECs are installed at the terminal. The embedded program is automatically executed when the user requests a video clip which is referenced on the Web page. If the query detects the presence of a CODEC that can decompress a video clip stored by one of the servers, the embedded program will select that CODEC and request the appropriate video clip.

Ex. 1006, 7:14-40. Thus, Kenner teaches that a *content item* is stored in different *implementations* (i.e., "different compression formats") at various delivery sites around the Internet. Ex. 1006, 18:6-13 (explaining that the delivery site "includes storage for a plurality of video clips in different formats"). Moreover, by explaining that "a video clip selection and retrieval system according to the invention stores each video clip at various locations in a number of different compression formats," Ex. 1006, 7:16-19, 7:28-30, the POSITA would have understood that the content is received at the Kenner Mirror Sites from the content

provider for storage. Even if the content is transcoded at the Mirror Sites, a POSITA would have found it obvious to receive the various implementations of the items of content at the Mirror Sites from the content providers to maximize the control that content providers have over the look of the data. *Infra* §IX.A.5.

121. Therefore, a POSITA would have understood Kenner to describe a method including receiving and storing a plurality of different implementations of at least one of the items of digital content by explaining that "a video clip selection and retrieval system according to the invention stores each video clip at various locations in a number of different compression formats." Ex. 1007, 7:16-19, 7:28-30. Kenner teaches that different formats correspond to different device capabilities: "The appropriate file format is automatically selected based on the capabilities of a user terminal making a request for data." Ex. 1006, Abstract. And, even if Kenner did not explicitly disclose a step of receiving the content at the Mirror Sites, it would have been obvious to do so as mentioned above.

122. Based on the teachings of Kenner, a POSITA would have found it obvious to perform a step of *receiving a plurality of different implementations of at least one of the items of content, where each implementation of any given item of content corresponds to a different set of device capabilities* for the reasons that I discuss further below in detail. *Infra* §X.A.5.

4. *[1B] maintaining a product catalog containing a description of the items of content, the product catalog including, in association with each item of content, a reference to each implementation of said item of content.*

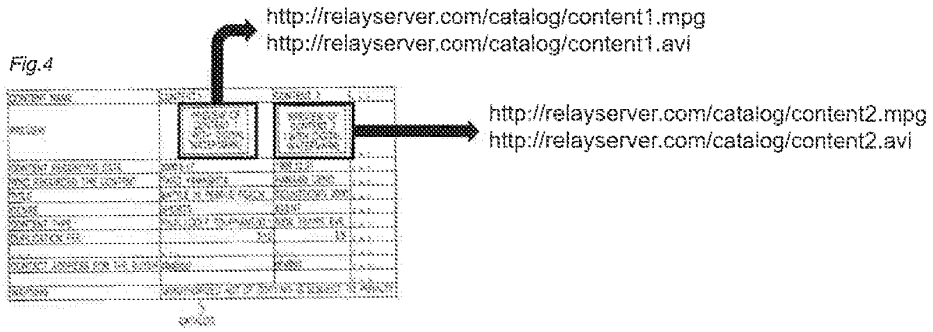
123. Senoh discloses *maintaining a product catalog containing a description of items of content* for the reasons I have explained above in connection with my discussion of this limitation of claim 1 in connection with my discussion of Senoh and Agraharam. But, as I mentioned earlier, Senoh does not disclose *the*

product catalog including, in association with each item of content, a reference to each implementation of said item of content. This latter aspect of the claim would have been obvious over the combined teachings of Senoh and Kenner, as I discuss below.

124. Kenner teaches that if an acceptable CODEC is installed on the end-user's terminal, "a URL is created from the storage location of the video clip (step 128)." Ex. 1006, 18:48-50. "For example, such a created URL might be "http://deliverysite.com/clips/watchme." Ex. 1006, 18:48-51. When the URL is generated it is missing the "format type extension," such as ".mpg" or ".avi." Ex. 1006, 18:50-56. Those are added when the device capabilities (i.e., specific installed compatible CODEC) is identified. Ex. 1006, 18:51-65.

125. The POSITA would have found it obvious to implement Senoh's product catalog using the Kenner techniques to allow for compatible previews to be identified in the relay server and presented to the user via the user's user terminal. For instance, to implement Senoh's product catalog previews each preview would be stored in a particular directory associated with that preview (e.g., /clips/watchme in the context of Kenner's example). The directory structure including /clips/watchme" refers to each implementation of the digital content called "watchme" because it unambiguously identifies all the files stored in that directory with the name "watchme." Thus, the directory and file name (without extension) is /clips/watchme and this identifies each implementation of watchme and where it is stored including watchme.mpg and watchme.avi.

126. An illustration of how a POSITA would have implemented the combined teachings of Senoh and Kenner is reflected in the illustration below:



Here, the previews associated with content 1 and content 2 are stored in different locations on the relay server and they are accessed using different references. For instance, preview 1 is stored at a URL such as "http://relayserver.com/catalog/content 1." which the POSITA would have understood reference to the storage location for all versions of content 1 on the relay server identified by the resolved address relayserver.com at port 80 (the standard port for HTTP). These versions would have included for instance content1.avi and content1.mpg. The second preview might be stored in the illustrative location "http://relayserver.com/catalog/content2," which provides a reference to each version of "content2" stored on the relay server. This would have been a predictable easily-codable manner of referring to content on a server using only common Internet coding techniques.

127. It would have been obvious to implement Senoh's catalog to refer to each implementation of the items of content based on the combined teachings of Senoh and Agraharam for the reasons that I explain in detail in the next section.

5. Senoh in view of Kenner Renders Claim 1 Obvious; Motivation to Combine/Modify Senoh

128. As explained above, Senoh does not explicitly disclose (1) *receiving a plurality of different implementations of at least one of the items of content, where each implementation of any given item of content corresponds to a different set of*

device capabilities, or (2) *the product catalog including, in association with each item of content, a reference to each implementation of said item of content.*

129. Although Senoh does not teach *receiving a plurality of different implementations of at least one of the items of content, where each implementation of any given item of content corresponds to a different set of device capabilities* it would have been obvious to modify Senoh's catalog such that it received (and stored) a plurality of different implementations of at least one of the items of content, where each implementation of any given item of content corresponds to a different set of device capabilities for several reasons based on the teachings of Kenner. There are several things that support my conclusion.

130. That different devices have different capabilities was well known and a problem that POSITAs had been working on addressing in the years leading up to the June 2002 provisional application filing date as I have explained above. *Supra* §VII.A. This problem began to significantly manifest with increasing frequency as diverse types of mobile devices with a wide range of capabilities began to be able to access the Internet and the Internet began including a variety of multimedia content. *Supra* §VII.A.

131. Based on this, POSITAs would have understood that Senoh's previews should be delivered to devices in a format that the devices could interpret and display or playback. Senoh teaches an online catalog for browsing multimedia content. Ex. 1004, ¶¶[0043]-[0044]. The catalog has previews of the audio or video. Ex. 1004, ¶[0044]. But, that catalog content is not described as being tailored to any specific user terminals.

132. A POSITA would have looked for a way to ensure that previews were served from the relay server catalog in a format that could be rendered by the device accessing it, such as various cellular phones or other wireless devices. Kenner teaches a technique for identifying the correct implementation of a video

file for serving to a user's device such that the version served matches a CODEC installed on the device. Kenner's technique for retrieving content of a particular format that corresponded to a requesting device's capabilities to reproduce the data would have provided Senoh with the ability to provide content in a format that was accessible to the user terminal when the user terminal accessed the Senoh product catalog. This would have allowed Senoh's product catalog to be more accessible to user terminals having various CODECs installed on them and more user-friendly to access.

133. The POSITA would have recognized that Senoh's technique of sending the full-length content to the relay sever, transcoding it and sending it to the user terminal would not have been efficient for use with Senoh's previews, and would have looked to Kenner for a more efficient solution for previews stored at the relay server for several reasons.

134. First, the POSITA would have recognized that Kenner provides a way to store multimedia content at a server which hosts a webpage in which the content is embedded. Ex. 1006, 18:8-11 (server stores "a plurality of video clips in different formats"), 18:20-24. Kenner's technique can ensure that the end-user's terminal can play the content back by looking to the device capabilities in terms of the installed CODEC.

135. The POSITA would have understood that Senoh's catalog stored on the electronic bulletin board would have been implemented using, for example, a web page. Ex. 1004, ¶[0045]. To view a web page, a request is made from the client (e.g., cellular phone), and the page is returned by the server to the client. *See* Ex. 1006 (Kenner), 18:32-33 ("First, the Web page containing the video clip is loaded by the user terminal (step 120)."). Kenner's technique ensures that files (with a specific example of video files) that are referenced in the web page can be displayed on the user terminal.

136. Applying this concept to Senoh's FIG. 4, the webpage would include one or more links or references to audio or video content in the form of previews of the items of content. *See* Ex. 1004, FIG. 4. To ensure that the user terminal's browser can view the video if possible, a POSITA would have found it obvious to employ Kenner's embedded script, which "specifies a sequence of preferred CODECs and corresponding video clip format types." Ex. 1006, 18:33-39. Based on the execution of this script, "a URL is created from the storage location of the video clip" on the server. Ex. 1006, 18:48-50. Then, the appropriate file format extension is appended to it to allow the identification of a format of the file that can be played back on the user terminal. Ex. 1006, 18:51-61 ("Note that the created URL does not have a format type extension. The created URL is then modified (step 130) by appending a format type extension (e.g. ".mpg" for MPEG-formatted clips, or ".avi" for Microsoft Video for Windows-formatted clips) to the location of the video clip. The format type extension used depends on the selected CODEC. The resulting URL (e.g. "http://www.deliverysite.com/clips/watchme.mpg") uniquely specifies a video clip file in a format recognized by the preferred CODEC installed on the user terminal."). I have provided an illustration about how the combined Senoh-Kenner system might implement these techniques using URLs above.

137. Second, because the previews are accessible from different content creators at the relay server via the catalog, the POSITA would have understood that the previews originated from a variety of sources. This is clear from Senoh, which explains that the copyright holder terminal 20 and the content server 3 could be the same computer, that each copyright holder is assigned a unique copyright holder ID, and presenting an illustration of the ID table in the relay server with numerous copyright holder IDs. Ex. 1004, ¶¶[0032], [0035], [0054], and FIG. 5. Therefore, the POSITA would have understood that attempting to fetch and

dynamically transcode a variety of preview content for viewing on the end-user terminal would have added latency to the system, perhaps resulting in one preview being accessible significantly before another, as the content from the catalog is retrieved by the relay server, transcoded, and then downloaded to the user terminal. This is particularly true for content that is resource intensive to transcode like audio or video. Ex. 1007 (Li), 3:8-10. And, this issue would have been present for as many items as are present in Senoh's catalog. Moreover, while a user may be willing to wait for transcoding and downloading of a full-length item of content like a movie, the same user is unlikely to wait that long to preview content in the catalog as they quickly view multiple previews searching for content of interest. Thus, using a technique like Kenner's in which various implementations of the catalog content were received at a server and stored would have been viewed by the POSITA as being beneficial in the context of Senoh's previews.

138. Third, storing multiple implementations of an item of content (previews) is one of a finite number of predictable solutions available to the POSITA for enabling content to be tailored to the user terminals requesting Senoh's previews. Besides receiving and storing different implementations of items of content, one implementation could be received and transcoded at the relay server; implementations may be transcoded on the fly from a single implementation the catalog content could be kept at content servers and either transcoded there statically or dynamically. *Id.*. These solutions all had predictable results as the concepts of "static" transcoding and "dynamic" transcoding were discussed in the literature and had known implications. *See, e.g.*, Ex. 1008, pp.154-157. Additionally, it was not uncommon for these solutions to be used in combination in the same systems. As I explained above, the Britton article explains that "[b]oth static and dynamic transcoding have a place in creating effective e-business sites. Some pages will be accessed frequently and will be seen as the

signature pages for a business. For these, hand design will often be important. However, there are a number of considerations that will make dynamic transcoding more cost-effective." Ex. 1008, p.156. And, I have explained above that content creators wanted to have control over the appearance of different implementations of their content, which is a benefit of the static transcoding approach. *See* Ex. 1008, p.156. Agraharam teaches an example of a system where some content is transcoded before a request for it is made and other, less popular implementations are created on the fly. For instance, Agraharam explains that "[b]ased on parameters such as most often requested information and specific characteristics of the information to be formatted, information may be formatted into predetermined formats for efficient delivery to the end-user." Ex. 1005, 4:39-42. Agraharam also states that "[c]ases that require formats other than the predetermined formats may be handled by formatting the information 'on-the-fly' to ensure optimal information delivery to, and reproduction by the end-user terminal 114." Ex. 1005, 4:53-57.

139. A POSITA would have found it obvious and would have been motivated to use techniques disclosed by Kenner when implementing the catalog on Senoh's relay server to enable the preview content to be played by various user terminals having different capabilities by enabling automatic selection of content that can be played by the terminal based on the software capabilities of the device. The POSITA would have understood that Kenner's technique would have minimized user frustration in either not being able to view certain content or having to locate and install a particular codec to play the one version of content stored at the server location.

140. Using Kenner's known technique to allow the system to automatically correlate pre-stored video having particular formats with user terminals capable of playing that content would been a routine application of Kenner's technique to

Senoh's relay server and product catalog. The results of the combination based on the teachings of the references was imminently predictable because the techniques are based on standard web programming techniques that would have been familiar with the POSITA. This combination of Kenner's technique and Senoh's relay server / product catalog would have enabled a variety of user terminals including wireless terminals to view the previews of the content items through the catalog site without having to identify the specific codec required to play the preview.

141. The POSITA would have looked to Kenner to provide a technique that allowed the system to correlate between installed CODECs on client terminals and available implementations of the items of content because Kenner recognizes an issue that Senoh's product catalog would have suffered from—certain devices may not have the correct codec installed to allow the data to be viewed thus frustrating the user. Ex. 1006, 2:19-32. Kenner provides a technique to solve this problem inherent in Senoh's product catalog thus allowing more devices with different codecs to view more content in Senoh's product catalog. This would have further maximized the distribution of the content, which was one of the goals of Senoh's catalog. Ex. 1004, ¶[0043] (explaining that the catalog is for marketing "content to a wider audience").

142. Additionally, even if Kenner did not explicitly describe receiving the various implementations from a content provider at the Mirror Sites, it would have been obvious to receive the various catalog previews in different implementations at Senoh's relay server because a POSITA knew that content creators desired control over the creation of different versions of their content to ensure that they displayed the way that they wanted it to display. This is discussed above, and is taught as one of the primary advantages of the technique that the Britton article calls "static transcoding." Ex. 1008 (Britton), p.156 ("The primary advantages of static transcoding are quality of presentation and performance. . . . Each page is

constructed by a human designer, generally working with tools that show how the application will look or sound and thus allowing the presentation to be hand-tailored for each environment.")); *supra* §VII.A. The POSITA would have wanted to provide content creators the ability to have control over the appearance of different implementations of the previews. The better the preview looked and displayed on the device and the faster it was served to the user, the more likely the user would be to purchase the content. Conversely, the POSITA would have appreciated that if the preview did not render on a device because of a missing codec requiring the user to engage in difficult, inconvenient, or frustrating steps, it would have decreased the likelihood of a user purchasing content. Therefore, the POSITA would have seen receiving different, preformatted implementations of the preview content as taught by Kenner to be beneficial.

143. Because the interrelated techniques were taught in detail in the prior art, and the art was predictable and well-understood, the POSITA would have had a reasonable expectation of success in combining Senoh's relay server and catalog with Kenner's technique for ensuring that user terminals could view video files.

144. Additionally, in implementing the combined Senoh-Kenner system, to access an individual implementation for a particular item of content (e.g., video or audio preview), the POSITA would have understood that Kenner's technique uses a directory name to explicitly reference each of the implementations stored in that directory and further includes a reference based on the file name as I have illustrated above. *Supra* §X.A.4. To implement the combined Senoh-Kenner system, the POSITA would have understood that references such as "catalog/content1" and "catalog/content2" as discussed in my illustration above using conventional web programming techniques and informed by Kenner's teachings provided a reference to each implementation of the item of digital content, thus allowing the specific implementations required by the client terminal

to be accessed by appending the correct file extension to the name. Ex. 1006, 18:48-65.

B. Claim 2

1. *[2P] A method of providing access to digital content for use on wireless communication devices, the method comprising:*

145. I understand that this portion of the claim is called the preamble. I further understand that there are certain legal principles that must be applied to determine if the preamble of a claim is a limitation or not. I have not been asked to apply those principles. Instead, I have been asked to assume that the preamble of the claim is a limitation for the purposes of my analysis and I have done so.

146. The preamble of claim 2 is similar to the preamble of claim 1 except that this preamble requires the content to be "digital." This is disclosed by Senoh in that Senoh describes content being made available over digital communication networks like the Internet and escribes content for phones as being encoded in MPEG-4 coding, which is a digital coding format. Moreover, the content on the electronic bulletin board—i.e., the catalog content would have been understood to be digital content. Ex. 1004, ¶[0045]. Otherwise, I incorporate by reference my analysis of the preamble, [1P] discussed above in connection with the combination of Senoh and Agraharam. *Supra* §IX.A.1.

2. *[2Ai] receiving and storing in a server system a plurality of items of digital content to be made available for use in wireless communication devices used by a plurality of wireless services subscribers,*

147. This limitation differs from Limitation [1Ai] in that it requires the steps to be performed "in a server system," which is satisfied by Senoh's relay server which is connected to the content server. Ex. 1004, ¶[0029]. Moreover, as explained above, the items of content recited in this limitation are "digital content,"

which is disclosed by Senoh as discussed in the prior limitation. Otherwise, this limitation is disclosed and rendered obvious by Senoh for the same reasons I have discussed above in my discussion about the combination of Senoh and Agraharam. *See supra* §IX.A.2. I incorporate that discussion here by reference.

> 3. *[2Aii] including receiving and storing a plurality of different implementations of at least one of the items of digital content, where each implementation of any given item of digital content corresponds to a different set of device capabilities;*

148. This limitation differs from Limitation [1Aii] in that it requires "storing" which is satisfied by Senoh's relay server's ability to store catalog data including previews, *see* Ex. 1004, ¶[0043], and would have at least been obvious over Senoh in view of Kenner as discussed above. *Supra* §§X.A.3, X.A.5. I incorporate my discussion here by reference.

> 4. *[2B] operating the server system to maintain a product catalog containing a description of the items of digital content wherein the product catalog includes, in association with each item of digital content, a reference to each implementation of said item of digital content;*

149. This limitation differs from Limitation [1B] only in that it requires operating a server system to maintain the product catalog. Senoh's relay server maintains the product catalog. *See, e.g.*, Ex. 1004, ¶¶[0043]-[0044] ("the relay server 2 is a server computer accessible form the network and storing a compiled catalog of plural catalog data entries"). This limitation is otherwise obvious over the combined teachings of Senoh in view of Kenner as discussed above in connection with Limitation [1B]. *Supra* §X.B.

5. *[2C] receiving a request from a wireless device used by one of the subscribers;*

150. A POSITA would have understood that the step of *receiving a request from a wireless device used by one of the subscribers* would have been obvious over Senoh in view of Kenner.

151. Based on the combined teachings of Senoh and Kenner as discussed above, in the combined Senoh-Kenner system, a POSITA would have understood that once the format type is determined, a URL including the "format type extension" is "transmitted to the delivery site specified by the URL, and the clip is downloaded (step 132) and played (step 134)." Ex. 1006, 18:61-63. The URL sent from the user terminal in the combined system is received by Senoh's relay server, causing the preview having a file format that can be viewed by the user's terminal to be served to the end-user terminal in a format that can be viewed on that terminal. Thus, this limitation would have been obvious in the combined Senoh-Kenner system.

6. *[2D] in response to the request, selecting a portion of the product catalog to be presented to the subscriber, based on device capabilities of the wireless device used by the subscriber; and*

152. Senoh in view of Kenner renders obvious a step of *in response to the request, selecting a portion of the product catalog to be presented to the subscriber, based on device capabilities of the wireless device used by the subscriber*.

153. As I explained in connection with my discussion of claim 1 as being obvious over Senoh in view of Kenner, it would have been obvious to combine Kenner's technique of ensuring that the format of video provided from a server matched the codec installed on the client with Senoh's product catalog previews to ensure that properly formatted video and audio data are served from Senoh's relay

server to user terminals viewing the product catalog previews.

154. The POSITA would have understood that using the Kenner technique, once a URL having the appropriate "format type extension" for a codec installed on the terminal is received, a portion of the product catalog is selected based on the device capabilities and is presented to the subscriber thus allowing the content to be downloaded and played. Ex. 1006, 18:61-65 ("This URL is then transmitted to the delivery site specified by the URL, and the clip is downloaded (step 132) and played (step 134). When the video clip file is received, the browser automatically invokes the proper CODEC for its display."). A portion of the product catalog is selected for presentation to the user because the product catalog includes all stored implementations of the content, and only one of the implementations is transmitted to the user. The selection of which implementation is to be presented to the user is performed using the file extension added to correspond to a codec installed on the user terminal. Ex. 1006, 18:36-65.

7. *[2E] presenting the selected portion of the product catalog to the subscriber via a wireless network, such that the selected portion, as presented to the subscriber, provides only a single description of each item of digital content in said portion, regardless of the number of implementations of each said item.*

155. The combination of Senoh and Kenner renders obvious *presenting the selected portion of the product catalog to the subscriber via a wireless network, such that the selected portion, as presented to the subscriber, provides only a single description of each item of digital content in said portion, regardless of the number of implementations of each said item.*

156. The presentation of the *selected portion of the product catalog* occurs when the preview is served to the user terminal for display or playback. In other words, a subscriber using Senoh's cellular phone to view the product catalog

including video previews, Ex. 1004, ¶¶[0044], [0060], [0074], would be presented with the selected portion of the product catalog via a wireless network. Using the combined teachings of Senoh and Kenner, the selected portion, as presented to the subscriber, *provides only a single description of each item of digital content in said portion, regardless of the number of implementations*. This is because the product catalog can include implementations such as "content1.mpg" and "content1.avi," but the video preview would be presented on one format (e.g., .mpg) and not the other format(s) (e.g., .avi). Ex. 1006, 18:48-67. And, the overall description of the content including text and preview would not change regardless of how many implementations are stored at Senoh's relay server.

8. Senoh in view of Kenner Renders Claim 2 Obvious; Motivation to Combine/Modify Senoh

157. The differences between the subject matter of claim 1 and Senoh and Kenner are discussed above in section §X.A.5. Senoh and Kenner also render claim 2 obvious and the reasons that the claimed subject matter would have been obvious are the same as those that I have provided with respect to claim 1 and the combination of Senoh and Kenner and I incorporate by reference my analysis of claim 1 here. *See supra* §X.A.5.

C. Claim 4

1. [4P] A method as recited in claim 2, further comprising:

158. I discuss how Senoh and Kenner render claim 2 obvious above. *See supra* §X.B.

2. [4A] receiving from the subscriber a request for one of the items of digital content in said portion of the product catalog;

159. Senoh discloses and renders obvious a method that includes a step of *receiving from the subscriber a request for one of the items of digital content in*

said portion of the product catalog.

160. Senoh provides the following teachings relevant to this limitation:

> A sample catalog compiling plural catalog data entries is shown in FIG. 4. The catalog can be posted to a common bulletin board (electronic bulletin board) accessible from the network. Users can then select desired content by accessing the bulletin board on the relay server 2 and viewing the catalog. It should be further noted that the content ID is also contained in the preview data extracted from the content.

Ex. 1004, ¶[0045].

> The user terminal 1 is described next. The user terminal 1 is the terminal or computer whereby a user views the bulletin board 25 containing the catalog data, views previews of content from the catalog data on the bulletin board 25, and views or listens to the content. If there is content that the user wishes to purchase, the user sends a purchase request to the content provider (marketer or copyright holder of the content on the content server 3). This request contains the e-mail address or other information specifying the content provider or other party marketing the content. When the content server 3 receives such a purchase request, it sends a request for credit card information, electronic money, or other payment method to the user terminal 1. The content server 3 also requests the format supported by the user terminal 1 for viewing the content.

Ex. 1004, ¶[0057].

161. Senoh teaches that "[u]sers can select desired content" from the catalog, Ex. 1004, ¶[0045], and then send "a purchase request to the content provider." Thus, a request to have content delivered to the user device from the catalog discloses this limitation. So too does the request referred to in my discussion of Limitation [2C], discussed above, which requests one of the previews along with a request for the display of the product catalog so the user can view the

preview on their device. *See* Ex. 1004, ¶¶[0043]-[0045].

3. [4B] selecting an implementation of the requested item of digital content, based on device capabilities of the wireless device used by the subscriber; and

162. Senoh discloses and renders obvious a step of *selecting an implementation of the requested item of digital content, based on device capabilities of the wireless device used by the subscriber.*

163. For example, Senoh explains that "[t]he content server . . . requests the format supported by the user terminal 1 for viewing the content." Ex. 1004, ¶[0057]. Content is then conveyed from the content server to the relay server, and then from the relay server to the user terminal. Ex. 1004, ¶¶[0058]-[0059]. The format of that data (i.e., its implementation) provided by the relay server 2 is selected based on the device capabilities of the wireless device:

> If the format of the content sent to the relay server 2 differs from the format required by the user terminal 1, the relay server 2 converts the received format to the format viewable by the user terminal 1, and then transmits the content to the user terminal 1. The term "viewable" means that the user terminal 1 supports the format in which the content will be reproduced, or can display the content at the performance of the output display (the display performance of the monitor) of the user terminal 1.

Ex. 1004, ¶[0059]. From this, the POSITA would have understood that an implementation of the content from the content server is selected based on device capabilities and the content is transcoded into the appropriate version for the wireless device making the request for the content. *See also* Ex. 1004, ¶¶[0060]-[0061], [0064] (describing transcoding of content).

164. Additionally, in the context of the combined Senoh-Kenner system, the request includes an indication of the device capabilities—i.e., the supported

codec—as discussed above with respect to Limitation [2Aii]. *Supra* §X.A.3. This request would have allowed the server to select an implementation of the requested item of content (e.g., a particular preview) based on the capabilities of the wireless device used by the subscriber (i.e., its installed CODEC).

4. [4C] downloading the selected implementation of the item of digital content to the wireless device used by the subscriber.

165. Senoh discloses or renders obvious a step of *downloading the selected implementation of the item of digital content to the wireless device used by the subscriber*. As to full-length content, Senoh explains that if the implementation received from the content server matches the requirements of the user terminal, "the relay server 2 simply sends the content directly to the user terminal 1." Ex. 1004, ¶[0058]. But, if the implementation received by the relay server from the content server does not match, a "conversion process" is performed to convey "the received format to the format required by the user terminal." Ex. 1004, ¶[0059]. The selected implementation of the content is thus downloaded to the wireless device used by the subscriber. In the alternative, the video content previews are downloaded when they are served by the relay server after the user terminal requests to view the product catalog including such previews, as explained above.

D. Claim 8

1. [8P] A system comprising:

166. I understand that this portion of the claim is called the preamble. I further understand that there are certain legal principles that must be applied to determine if the preamble of a claim is a limitation or not. I have not been asked to apply those principles. Instead, I have been asked to assume that the preamble of the claim is a limitation for the purposes of my analysis and I have done so.

167. The preamble is disclosed by Senoh because Senoh describes *a*

system, namely "an electronic content distribution system." Ex. 1004, Abstract, FIG. 2, ¶[0022] (FIG. 2 shows "a specific configuration of [the] content distribution system").

2. [8A] a network interface through which to communicate over a communication network; and

168. Senoh discloses or renders obvious a *network interface through which to communicate over a communication network* for the reasons I explained in connection with this same limitation in connection with the combination Senoh in view of Agraharam. *Supra* §IX.B.2.

3. [8B] a download manager to

169. Senoh teaches the *download manager* for the reasons I explained in connection with this same limitation in connection with the combination Senoh in view of Agraharam. *Supra* §IX.B.3.

4. [8Bi] receive and store a plurality of items of content to be made available for use in wireless communication devices used by a plurality of wireless telecommunications subscribers,

170. This limitation is not different from Limitation [1Ai] in any material way. I have discussed that limitation above. My analysis of that limitation of claim 1 is equally applicable here. *Supra* §X.A.2.

5. [8Bii] including receiving a plurality of different implementations of at least one of the items of content, where each implementation of any given item of content corresponds to a different set of device capabilities; and

171. This limitation is not different from Limitation [1Aii] in any material way. I have discussed that limitation above. My analysis of that limitation of claim 1 is equally applicable here. *Supra* §X.A.3.

6. [8Biii] maintain a product catalog containing a description of the items of content, the product catalog including, in association with each item of content, a reference to each implementation of said item of content.

172. This limitation is not different from Limitation [1B] in any material way. I have discussed that limitation above. My analysis of that limitation of claim 1 is equally applicable here. *Supra* §X.A.4.

7. Senoh in view of Kenner Renders Claim 8 Obvious; Motivation to Combine/Modify Senoh

173. The differences between the subject matter of claim 1 and Senoh and Kenner are discussed above in section §X.A. The same differences are present between claim 8 and Senoh and Kenner. The reasons that the claimed subject matter would have been obvious, including reasons that the POSITA would have found claim 8 obvious are the same as those that I have provided with respect to claim 1 and I incorporate by reference my analysis of claim 1 here. *See supra* §X.A.5.

E. Claim 9

1. [9P] A system comprising:

174. I understand that this portion of the claim is called the preamble. I further understand that there are certain legal principles that must be applied to determine if the preamble of a claim is a limitation or not. I have not been asked to apply those principles. Instead, I have been asked to assume that the preamble of the claim is a limitation for the purposes of my analysis and I have done so.

175. The preamble is disclosed by Senoh because Senoh describes *a system*, namely "an electronic content distribution system." Ex. 1004, Abstract, FIG. 2, ¶[0022] (FIG. 2 shows "a specific configuration of [the] content distribution system").

2. [9A] a processor; and

176. A POSITA would have understood that Senoh discloses *a processor* even though it is not explicitly described in Senoh's text. This is because Senoh's context conveys to the POSITA that processor-based technology is used for communications, data processing and handling (including transcoding), and other functionality performed, for example, by Senoh's relay server. This is clear from Senoh's references to a "content distribution system" including a "relay server 2." Ex. 1004, ¶[0029]. These entities communicate over "communication network 4, such as the Internet . . . ," which tells the POSITA that a processor is used. Ex. 1004, ¶[0064]. Senoh further teaches that

> The processing operations of the various components of the above described content distribution system can also be written as a computer program causing a computer to execute the various processes. Such a computer can be recorded to a CD, DVD, or other optical disc, to a floppy disk or other magnetic storage medium, or to flash memory or other semiconductor storage medium. The computer program could yet further be distributed as an electric signal via the Internet or other network.

Ex. 1004, ¶[0081]. These disclosures tell the POSITA that a processor is present and perform the functions discussed above (based on the combined teachings of Senoh and Kenner). But, even if a processor was not disclosed by Senoh, a POSITA would have understood how to implement the functionality described by Senoh and Kenner in a processor and would have found it obvious to do so because processors were commonly used to execute computer-readable instructions in computer systems such as those described by Senoh. Senoh refers to content server and relay server and a POSITA knows that a server is a higher capacity computing system including a processor among other components.

3. [9B] a storage facility accessible to the processor and containing code which, when executed by the processor, causes the processing system to

177. Senoh discloses or at least renders obvious the claimed *storage facility accessible by the processor and containing code which, when executed by the processor causes the processing system to* perform the functionality discussed in the following limitations.

178. Senoh discloses:

> The processing operations of the various components of the above described content distribution system can also be written as a computer program causing a computer to execute the various processes. Such a computer can be recorded to a CD, DVD, or other optical disc, to a floppy disk or other magnetic storage medium, or to flash memory or other semiconductor storage medium. The computer program could yet further be distributed as an electric signal via the Internet or other network.

Ex. 1004, ¶[0081].

179. The relay server's functionality including storage of catalog data and previews and providing the previews to the end-user terminal would have been implemented based on computer code, and that such code would have been stored in a storage facility so that the computer-readable instructions could be fetched and executed by the processor to perform the functionality disclosed and rendered obvious by Senoh. This is a commonplace technique as understood by the POSITA.

4. [9Bi] receive and store a plurality of items of digital content to be made available for use in wireless communication devices used by a plurality of wireless telecommunications subscribers,

180. This limitation is not materially different than Limitation [2Ai] and is disclosed and rendered obvious by Senoh for the same reasons I have discussed

above. *See supra* §X.B.2. I incorporate that discussion here by reference.

5. *[9Bii] including receiving and storing a plurality of different implementations of at least one of the items of digital content, where each implementation of any given item of digital content corresponds to a different set of device capabilities;*

181. This limitation is not materially different than Limitation [2Aii] and is disclosed and rendered obvious by Senoh in view of Kenner for the same reasons I have discussed above. *See supra* §X.B.3. I incorporate that discussion here by reference.

6. *[9Biii] maintain a product catalog containing a description of the items of digital content, wherein the product catalog includes, in association with each item of digital content, a reference to each implementation of said item of digital content;*

182. This limitation is not materially different than Limitation [2B] and is disclosed and rendered obvious by Senoh in view of Kenner for the same reasons I have discussed above. *See supra* §X.B.4. I incorporate that discussion here by reference.

7. *[9Biv] receive a request from a wireless device used by one of the subscribers;*

183. This limitation is not materially different than Limitation [2C] and is disclosed and rendered obvious by Senoh in view of Kenner for the same reasons I have discussed above. *See supra* §X.B.5. I incorporate that discussion here by reference.

8. [9Bv] in response to the request, select a portion of the product catalog to be presented to the subscriber, based on device capabilities of the wireless device used by the subscriber; and

184. This limitation is not materially different than Limitation [2D] and is disclosed and rendered obvious by Senoh in view of Kenner for the same reasons I have discussed above. *See supra* §X.B.6. I incorporate that discussion here by reference.

9. [9Bvi] cause the selected portion of the product catalog to be presented to the subscriber via a wireless telecommunications network, such that the selected portion, as presented to the subscriber, provides only a single description of each item of digital content in said portion, regardless of the number of implementations of each said item.

185. This limitation is not materially different than Limitation [2E] and is disclosed and rendered obvious by Senoh in view of Kenner for the same reasons I have discussed above. *See supra* §X.B.7 I incorporate that discussion here by reference.

10. Senoh in view of Kenner Renders Claim 9 Obvious; Motivation to Combine/Modify Senoh

186. The differences between the subject matter of claim 9 and Senoh and Kenner are discussed above in section §§X.B., X.D.1-X.D.9. The same differences are present between claim 9 and Senoh and Kenner. The reasons that the claimed subject matter would have been obvious, including reasons that the POSITA would have found claim 9 obvious are the same as those that I have provided with respect to claim 1 and I incorporate by reference my analysis of claim 1 here. *See supra* §X.A.5.

XI. CLAIMS 1-2, 4, AND 8-9 WOULD HAVE BEEN OBVIOUS OVER SENOH IN VIEW OF LI

A. Claim 1

1. [1P] A method of providing access to content for use on wireless communication devices, the method comprising:

187. I understand that this portion of the claim is called the preamble. I further understand that there are certain legal principles that must be applied to determine if the preamble of a claim is a limitation or not. I have not been asked to apply those principles. Instead, I have been asked to assume that the preamble of the claim is a limitation for the purposes of my analysis and I have done so.

188. The preamble is disclosed and rendered obvious by Senoh for the same reasons I have discussed above in my discussion about the combination of Senoh and Agraharam. *See supra* §IX.A.1. I incorporate that discussion here by reference.

2. [1Ai] receiving and storing a plurality of items of content to be made available for use in wireless communication devices used by a plurality of wireless services subscribers,

189. This limitation is disclosed and rendered obvious by Senoh for the same reasons I have discussed above in my discussion about the combination of Senoh and Agraharam. *See supra* §IX.A.2. I incorporate that discussion here by reference.

3. [1Aii] including receiving a plurality of different implementations of at least one of the items of content, where each implementation of any given item of content corresponds to a different set of device capabilities; and

190. Senoh describes receiving a plurality of items of content as discussed above in connection with my discussion of the combination of Senoh and

Agraharam, limitation [1Ai]. *Supra* §IX.A.2. And while Senoh explains how to ensure that the content requested by the user from the content server conforms to device requirements, Ex. 1004, ¶¶[0057]-[0059], Senoh does not describe *receiving a plurality of different implementations of at least one of the items of content, where each implementation of any given item of content corresponds to a different set of device capabilities* in connection with the provision of video previews that are stored as part of the catalog data on the relay server. This aspect of the claim would have been obvious over Li.

191. The POSITA reading Senoh would have understood that while Senoh described a technique for ensuring that full-length content displayed properly on user terminals including wireless devices, Senoh does not teach a mechanism for doing the same thing with the disclosed preview content. Ex. 1004, ¶¶[0043]-[0045]. The POSITA would have understood that there would have been a number of benefits to ensuring that the content displayed properly on a wide variety of user terminals including improving the marketability of the content and enhancing the user experience when viewing previews, as I discuss in further detail below. *See infra* §XI.A.5. Yet, Senoh's process for transcoding full-length content, which includes transmitting the content from the content server to the relay server, transcoding it at the relay server and sending it on to the user terminal in the appropriate form would not be an effective way to handle user terminal request for the preview content stored in the catalog. This is because the previews are already stored at the relay server and the requests from the terminal are for catalog data from an electronic bulletin board. Ex. 1004, ¶¶[0043]-[0045]. Thus, keeping the preview content at the content server and then transcoding it on the fly would increase the latency of Senoh's catalog because it would require obtaining content from the content server—and potentially many content servers depending on the source(s) of the content in the catalog. A POSITA therefore would have looked for

a way to improve the viewability of the content across a diverse set of user terminals including subscriber wireless devices *and* would have looked for a technique that maintained the multimedia content on Senoh's relay server to reduce latency while at the same time maintaining a good user experience. This would have led the POSITA to look to Li for a solution.

192. Li describes a way of presenting content to end-user terminals in a manner that is best suited for a particular user terminal using a data structure and transcoded content; this structure is called an "InfoPyramid," and the devices include PDAs and "smart cellular phones." Ex. 1007, 1:18-21, 1:31-36, 2:39-52, 5:66-6:2 ("As shown in FIG 2, the content items 120 of a multimedia document 100 are transcoded (250) into multiple modality and fidelity versions to generate a set of InfoPyramids 280."). Using Li's techniques multimedia content is adapted "to optimally match the capabilities of the client device requesting it," Ex. 1007, 2:19-21, by selecting from different implementations of the content that has been "transcoded into multiple resolution and modality versions so that they can be rendered on different devices." Ex. 1004, 2:24-26.

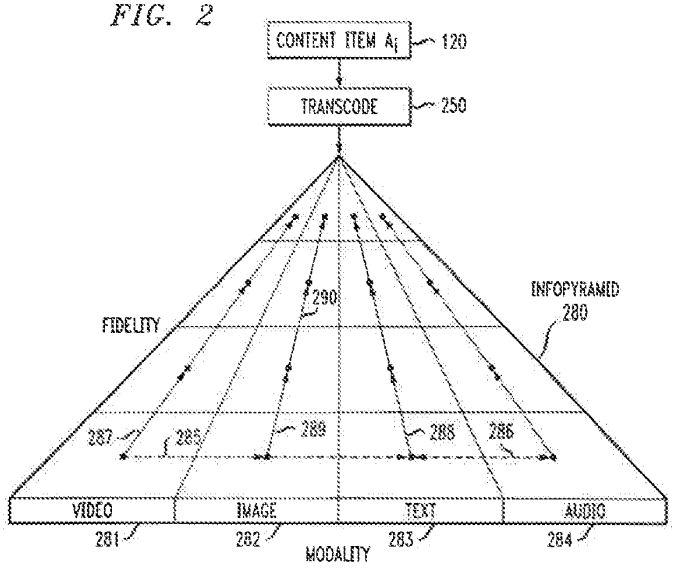
193. Li's technique "permits the transcoded versions of the content items to be generated prior to any requests," thereby allowing the system and method to "handle media items such as video and audio which are difficult to handle in conventional proxies," and which leads "to lower response latencies than proxies." Ex. 1007, 3:4-10. Li further indicates that the processes "can be deployed on the server-side," which would have encouraged the POSITA to consider Li as a solution for transcoding Senoh's preview content.

194. When a user terminal requests a particular Web page that includes multimedia content, the specific items of information that are to be served to the client are determined based on the device capabilities. Ex. 1007, 6:3-9 ("A client device is characterized by its profile 310 which lists the capabilities 320 and

resources 300 of the device. . . . A client may have a different number of capabilities 320 and resources 330."); Ex. 1007, 6:42-47 ("A content adaptation process 350 uses the client profile 3109 to select from among the InfoPyramids 280 the versions 374 that best satisfy the particular client profile. These selected versions are rendered into a document 370 which is an adaptation (i.e., customization) of the original multimedia document 100.").

195. Thus, Li teaches transcoding items of content into *a plurality of different implementations of at least one of the items of content, where each implementation of any given item of content corresponds to a different set of device capabilities.* For instance, the different implementations are reflected in Li's InfoPyramids, where each cell reflects a different combination of fidelity and modality for the item of content:

FIG. 2



Ex. 1007, FIG. 2.

196. Additionally, the different implementations of any given item of content corresponds to a different set of device capabilities. For example, assuming that the device is capable of only displaying still images in black and white, video

content and any color image content will be filtered out as taught by Li. *See* Ex. 1007, 6:52-56 (An appropriate implementation of the item of content can be selected for the device, e.g., "all versions that are in video modality can be filtered out if the device is not capable of displaying video" and "all versions that are color images can be filtered out for a device that has only a black and white or gray-level screen.").

197. It would have been obvious to have the content creator transcode the content into different implementations and create the InfoPyramid and send it to Senoh's relay server for storage as part of the product catalog data for the reasons that I explain in detail below. *Infra* §XI.A.5.

4. [1B] maintaining a product catalog containing a description of the items of content, the product catalog including, in association with each item of content, a reference to each implementation of said item of content.

198. Senoh discloses *maintaining a product catalog containing a description of items of content* for the reasons I have explained above in connection with my discussion of this limitation of claim 1 in connection with my discussion of Senoh and Agraharam. *Supra* §IX.A.4. But, as I mentioned earlier, Senoh does not disclose *the product catalog including, in association with each item of content, a reference to each implementation of said item of content.* This latter aspect of the claim would have been obvious over the combined teachings of Senoh and Li, as I discuss below.

199. As I explain above in §XI.A.3, and in further detail below, §XI.A.5, it would have been obvious to receive multiple implementations of each item of content at Senoh's relay server in the form of Li's InfoPyramids. In implementing the combined Senoh-Li system in this manner, the POSITA would have been led to include in Senoh's product catalog *a reference to each implementation of said item*

of content in association with each item of content because the POSITA would have needed to identify the specific InfoPyramid for a specific item of information. The POSITA would have understood that there is a need to be a reference from the content items, which include Senoh's previews. This reference would be used to tie the previews in Senoh's catalog to the InfoPyramid including the implementations of the previews.

200. The POSITA would have understood that Li's multimedia documents—indicated as reference numeral 120—were a useful mechanism to represent Senoh's product catalog, as reflected in this illustration below:

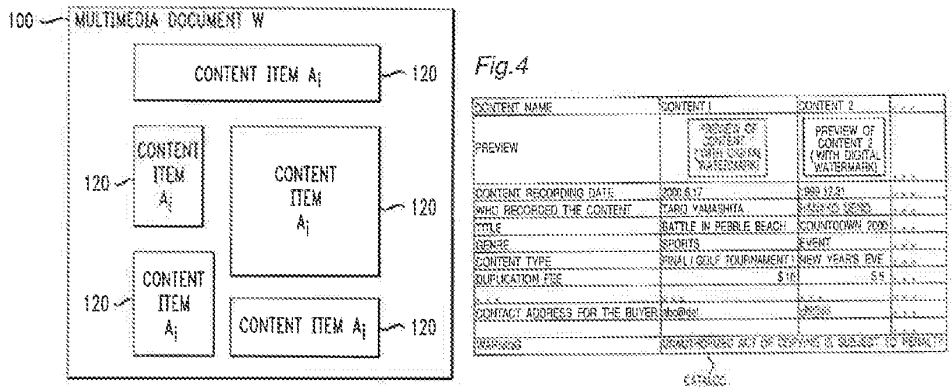
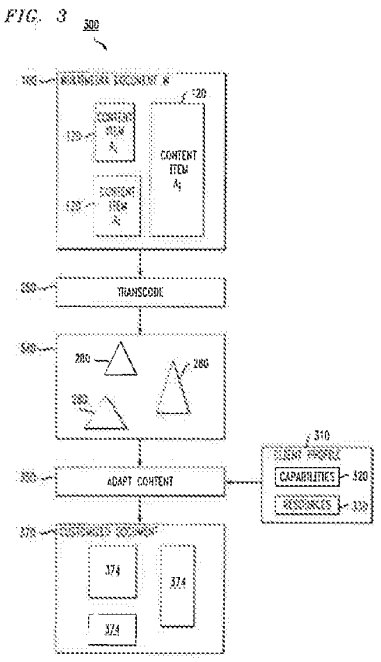


Fig.4

Ex. 1004, FIG. 4; Ex. 1007, FIG. 1. Here, each part of the catalog can be implemented as a content item. For instance, a preview is represented by one content item (Ai) and a second preview is represented as a different content item (Ai). Some text could be represented as another item of content, and so on. According to Li, each content item (Ai) is transcoded into a number of different representations and are stored in InfoPyramid data structures, as shown in Li's FIG. 2. Ex. 1007, FIG. 2.

201. When a document (e.g., Senoh's product catalog) includes multiple items of information with multiple components, each item can be represented in its own InfoPyramid (280), as indicated in Li's Figure 3:



Ex. 1007 (Li), FIG. 3.

202. A POSITA would have understood to implement Senoh's product catalog using Li's InfoPyramid technique would have understood that each item of information (e.g., preview in Senoh's catalog) would have included a reference to the specific InfoPyramid that holds the implementations of the particular preview. More specifically, a POSITA would have understood that in implementing Senoh's product catalog using Li's InfoPyramids, each item of information—e.g., preview of Content 1 or a preview of Content 2—is associated with multiple implementations stored in the InfoPyramid. The process of selecting which, if any, implementation is to be provided to the user terminal would have needed a *reference to* the InfoPyramid associated with that item of content—i.e., a reference to *each implementation of said item of content* to enable selection of the appropriate item of content for the end user terminal. Without some reference, Li's system could not correlate an InfoPyramid with the content item Ai on the Web

page. Indeed, as I have explained above, Kenner's technique uses URLs and directory names to refer to various implementations of items of content and reflects common Internet programming techniques that would have been seen by the POSITA as being useful to correlate a content item Ai with the various implementations in Li's InfoPyramids. *See supra* §§VIII.D, X.A.4.

5. Senoh in view of Li Renders Claim 1 Obvious; Motivation to Combine/Modify Senoh

203. As explained above, Senoh does not explicitly disclose (1) *receiving a plurality of different implementations of at least one of the items of content, where each implementation of any given item of content corresponds to a different set of device capabilities*, or (2) *the product catalog including, in association with each item of content, a reference to each implementation of said item of content.*

204. Although Senoh does not teach *receiving a plurality of different implementations of at least one of the items of content, where each implementation of any given item of content corresponds to a different set of device capabilities* it would have been obvious to modify Senoh's catalog stored in the relay server such that the relay server received (and stored) a plurality of different implementations of at least one of the items of content, where each implementation of any given item of content corresponds to a different set of device capabilities for several reasons. There are several things that support my conclusion.

205. That different devices have different capabilities was well known and a problem that POSITAs had been working on addressing in the years leading up to the June 2002 provisional application filing date as I have explained above. *Supra* §VIII.A. This problem began to significantly manifest with increasing frequency as diverse types of mobile devices with a wide range of capabilities began to be able to access the Internet and the Internet began including a variety of multimedia content. *Supra* §VIII.A.

206. Based on this, a POSITA would have understood that Senoh's previews should be delivered to devices in a format that the devices could interpret and display or playback. But, Senoh does not explain how this should be done.

207. A POSITA would have been motivated to perform a step of receiving (and storing) preview data in different implementations corresponding to different devices that access Senoh's catalog so that a wide variety of devices would have been able to preview the content from the catalog in an optimal format, thus further disseminating the content to a variety of users. Indeed, maximizing the distribution of the content was one of the goals of Senoh's catalog. Ex. 1004, ¶[0043] (explaining that the catalog is for marketing "content to a wider audience"). This would have allowed Senoh's product catalog to be accessed by a wider audience—namely all of the devices with capabilities compatible with one of the various implementations stored in the relay server.

208. The POSITA would have recognized that Senoh's technique of sending the full-length content to the relay sever, transcoding it, and sending it to the user terminal would not have been efficient for use with Senoh's video previews and would have looked to Li's more efficient solution for previews stored at the relay server for several reasons.

209. First, the POSITA would have found the Li solution attractive because POSITAs knew that content creators desired control over the creation of different versions of their content to ensure that they displayed the way that they wanted it to display. This is discussed above, and is taught as one of the primary advantages of the technique that the Britton article calls "static transcoding." Ex. 1008 (Britton), p.156 ("The primary advantages of static transcoding are quality of presentation and performance. . . . Each page is constructed by a human designer, generally working with tools that show how the application will look or sound and thus allowing the presentation to be hand-tailored for each environment."); *supra*

§VIII.A. The better the preview looked and displayed on the device and the faster it was served to the user, the more likely the user would be to purchase the content. Conversely, the POSITA would have appreciated that if the preview rendered poorly on the device, the perceived quality of the original content would be worse and thus decrease the likelihood of a user purchasing it. Therefore, the POSITA would have seen receiving different, preformatted implementations of the content as taught by Li to be beneficial in initially marketing the content.

210. Second, because the previews are accessible from different content creators at the relay server via the catalog, the POSITA would have understood that the previews originated from a variety of sources. This is clear from Senoh, which explains that the copyright holder terminal 20 and the content server 3 could be the same computer, that each copyright holder is assigned a unique copyright holder ID, and presenting an illustration of the ID table in the relay server with numerous copyright holder IDs. Ex. 1004, ¶¶[0032], [0035], [0054], and FIG. 5. Therefore, the POSITA would have understood that attempting to fetch and dynamically transcode a variety of preview content for viewing on the end-user terminal would have added latency to the system, perhaps resulting in one preview being accessible significantly before another, as the content from the catalog is retrieved by the relay server, transcoded, and then downloaded to the user terminal. This is particularly true for content that is resource intensive to transcode like audio or video. Ex. 1007 (Li), 3:8-10. And, this issue would have been present for as many items as are present in Senoh's catalog. Moreover, while a user may be willing to wait for transcoding and downloading of a full-length item of content like a movie, the same user is unlikely to wait that long to preview content in the catalog as they quickly view multiple previews searching for content of interest.

211. Third, storing multiple implementations of an item of content (previews) is one of a finite number of predictable solutions available to the

POSITA for enabling content to be tailored to the user terminals requesting Senoh's previews. Besides receiving and storing different implementations of items of content, one implementation could be received and transcoded at the relay server; implementations may be transcoded on the fly from a single implementation, or the catalog content could be kept at content servers and either transcoded there statically or dynamically. *Id.*. These solutions all had predictable results as the concepts of "static" transcoding and "dynamic" transcoding were discussed in the literature and had known implications. *See, e.g.*, Ex. 1008, pp.154-157. Additionally, it was not uncommon for these solutions to be used in combination in the same systems. As I explained above, the Britton article explains that "[b]oth static and dynamic transcoding have a place in creating effective e-business sites. Some pages will be accessed frequently and will be seen as the signature pages for a business. For these, hand design will often be important. However, there are a number of considerations that will make dynamic transcoding more cost-effective." Ex. 1008, p.156. Agraharam teaches an example of a system where some content is transcoded before a request for it is made and other, less popular implementations are created on the fly. For instance, Agraharam explains that "[b]ased on parameters such as most often requested information and specific characteristics of the information to be formatted, information may be formatted into predetermined formats for efficient delivery to the end-user." Ex. 1005, 4:29-42. Additionally, Agraharam explains that "[c]ases that require formats other than the predetermined formats may be handled by formatting the information 'on-the-fly' to ensure optimal information delivery to, and reproduction by the end-user terminal 114." Ex. 1005, 4:53-57.

212. The POSITA would have found it obvious to transcode content in Senoh's content servers to create InfoPyramids using techniques taught in Li to and then sending the InfoPyramids to Senoh's to relay server for storage to enable

selection of the best way to present content to a particular user terminal based on a device's capabilities and resources as taught in Li. A POSITA would have applied Li's known technique of selecting optimal content for providing it to the end-user terminal using Li's known technique to Senoh's relay server and catalog. The POSITA would have understood that Senoh's catalog system would have been improved in the same way that Li's system improved upon the prior art by tailoring content to be provided to user devices.

213. The POSITA would have seen that applying the Li techniques to content for Senoh's catalog would expand the ability of accomplish Senoh's goal of marketing "the content to a wider audience." Ex. 1004, ¶[0043]. And, Li identifies a solution to the problem of making multimedia content, such as Senoh's previews available to a variety of different user terminals, including wireless devices. Ex. 1007, 1:24-31 ("Web documents delivered on the Internet are multimedia presentations that may include video, images, graphics, text, and audio. Due to the recent rapid growth of devices that are connected to the Internet, there is a growing demand for providing universal access to such multimedia content to a wide variety of devices over a wide range of network environments."), 2:19-21 ("The present invention adapts multimedia content, e.g., Web documents, to optimally match the capabilities of the client device requesting it."). Therefore, the combined teachings of Senoh and Li suggest and make it obvious to arrive at the claimed invention.

214. A POSITA would also have found that applying Li's technique for adapting content to a variety of user terminals including "PDAs" and "smart cellular phones" would have required only the application of Li's known technique for transcoding various types of content such as Senoh's text and video and audio previews into different fidelity and/or modalities to allow as many users to view the content as possible from their mobile devices, Ex. 1007, 4:58-67.

215. The POSITA would have been further motivated to make the combination of Senoh and Li as proposed to arrive at the claimed subject matter because the better the preview looked and displayed on the device and the faster it was served to the user, the more likely the user would be to purchase the content. Conversely, the POSITA would have appreciated that if the preview rendered poorly on the device, the perceived quality of the original content would be worse and thus decrease the likelihood of a user purchasing it. Therefore, the POSITA would have seen receiving different, preformatted implementations of the content as taught by Li to be beneficial. And, Li's improvement would have improved Senoh in the same way that it improved over prior art techniques of simply serving static content without content adaptation. Ex. 1007, 1:24-42, 2:19-21. And, the improvement to Senoh would have been predictable because Li's technique would have been understood to be applicable to a variety of multimedia content including both Senoh's video and audio previews. Ex. 1004, ¶[0044]; Ex. 1007, 3:5-6 ("[T]he invention can handle media items such as video and audio which are difficult to handle in conventional proxies."). The results of implementing the combination of Senoh and Li would have predictably allowed Senoh's catalog content to be tailored for delivery to many different types of devices so that the content could be marketed to a wider audience.

216. The POSITA would have reasonably expected to succeed in combining Senoh and Li because Li's transcoding techniques were known and predictable. Combining them with Senoh would have been viewed by the POSITA as the combination of known data transcoding techniques, known data structures (i.e., Li's InfoPyramids) with known and Internet-based technologies to provide Senoh's product catalog to user devices.

217. Moreover, a POSITA would have found it obvious to include, in Senoh's product catalog, a reference to each implementation of each item of

content to allow the particular catalog entry to be associated with the appropriate InfoPyramid including the various transcoded versions of the specific preview thereby allowing it to be retrieved and played back. The POSITA would have understood that a reference would have linked the InfoPyramid to the catalog such that the content rendered appropriately on the user terminals. Because it would have been obvious to use Li's InfoPyramid technique with Senoh's relay server for the reasons I have explained above, it would have been obvious to include the claimed reference in the catalog to ensure that the catalog displayed with the appropriate previews in the appropriate place, thus allowing the system to operate as contemplated by Senoh.

B. Claim 2

1. *[2P] A method of providing access to digital content for use on wireless communication devices, the method comprising:*

218. I understand that this portion of the claim is called the preamble. I further understand that there are certain legal principles that must be applied to determine if the preamble of a claim is a limitation or not. I have not been asked to apply those principles. Instead, I have been asked to assume that the preamble of the claim is a limitation for the purposes of my analysis and I have done so.

219. The preamble of claim 2 is similar to the preamble of claim 1 except that this preamble requires the content to be "digital." This is disclosed by Senoh in that Senoh describes content being made available over digital communication networks like the Internet and escribes content for phones as being encoded in MPEG-4 coding, which is a digital coding format. Moreover, the content on the electronic bulletin board—i.e., the catalog content would have been understood to be digital content. Ex. 1004, ¶[0045]. Otherwise, I incorporate by reference my analysis of the preamble, [1P] discussed above in connection with the combination

of Senoh and Agraharam. *Supra* §IX.A.1.

2. [2Ai] receiving and storing in a server system a plurality of items of digital content to be made available for use in wireless communication devices used by a plurality of wireless services subscribers,

220. This limitation differs from Limitation [1Ai] in that it requires the steps to be performed "in a server system," which is satisfied by Senoh's relay server which is connected to the content server. Ex. 1004, ¶¶[0029]. Moreover, as explained above, the items of content recited in this limitation are "digital content," which is disclosed by Senoh as discussed in the prior limitation. Otherwise, this limitation is disclosed and rendered obvious by Senoh for the same reasons I have discussed above in my discussion about the combination of Senoh and Agraharam. *See supra* §IX.A.2. I incorporate that discussion here by reference.

3. [2Aii] including receiving and storing a plurality of different implementations of at least one of the items of digital content, where each implementation of any given item of digital content corresponds to a different set of device capabilities;

221. This limitation differs from Limitation [1Aii] in that it requires "storing" which is satisfied by Senoh's relay server's ability to store catalog data including previews, *see* Ex. 1004, ¶[0043], and would have at least been obvious over Senoh in view of Li as discussed above. *Supra* §XI.A.3, XI.A.5. Otherwise, this limitation is disclosed and rendered obvious by Senoh in view of Li for the same reasons I discuss above. *See supra* §XI.A.5. I incorporate those discussions here by reference.

4. [2B] operating the server system to maintain a product catalog containing a description of the items of digital content wherein the product catalog includes, in association with each item of digital content, a reference to each implementation of said item of digital content;

222. This limitation differs from Limitation [1B] only in that it requires operating a server system to maintain the product catalog. Senoh's relay server maintains the product catalog. *See, e.g.*, Ex. 1004, ¶¶[0043]-[0044] ("the relay server 2 is a server computer accessible form the network and storing a compiled catalog of plural catalog data entries"). This limitation is otherwise obvious over the combined teachings of Senoh in view of Li as discussed above in connection with Limitation [1B]. *Supra* §XI.A.4.

5. [2C] receiving a request from a wireless device used by one of the subscribers;

223. A POSITA would have found the step of *receiving a request from a wireless device used by one of the subscribers* to be obvious over Senoh in view of Li. In fact, this step is disclosed by both Senoh and Li.

224. Senoh teaches that a user accesses a catalog and the POSITA would have understood that a request to view the product catalog would have originated with the user device and would have been received by the relay server housing the product catalog. Ex. 1004, ¶[0045]. Senoh's catalog "can be posted to a common bulletin board (electronic bulletin board) accessible from the network," which allows "users to "select desired content by accessing the bulletin board on the relay server 2 and viewing the catalog." Ex. 1004, ¶[0045]. Based on the request from the wireless device (e.g., Senoh's cellular phone), catalog data from the electronic bulletin board would be provided to the client device according to the teachings of Senoh.

225. Li also describes this step because Li teaches that "a Web user (client)

makes a request from his client device for some particular Web document(s) or other multimedia content which may contain video, images, graphics, text, audio. The request is sent to a Web server which satisfies the request by returning the requested document to the client." Ex. 1007, 4:5-10. Li describes this as "well known" and I agree that it was well known before 2002.

226. A POSITA would have understood that in the combined Senoh-Li methods, the request discussed by Li would have been used in the context of Senoh to request the product catalog from the relay server. Therefore, the POSITA would have found it obvious to use a request from the wireless device to the relay server for catalog data would have allowed the wireless device to receive product catalog data in connection with a combined system according to Senoh and Li.

6. *[2D] in response to the request, selecting a portion of the product catalog to be presented to the subscriber, based on device capabilities of the wireless device used by the subscriber; and*

227. Senoh does not disclose *in response to the request, selecting a portion of the product catalog to be presented to the subscriber, based on device capabilities of the wireless device used by the subscriber*. Senoh in view of Li renders obvious a step of in response to the request, selecting a portion of the product catalog to be presented to the subscriber, based on device capabilities of the wireless device used by the subscriber.

228. As I explained in connection with my discussion of claim 1 as being obvious over Senoh in view of Li, it would have been obvious to combine Li's technique of optimizing the format of multimedia data provided from a server for the capabilities of the device making the request and receiving that multimedia content with Senoh's product catalog previews to ensure that properly formatted video and audio data are served from Senoh's relay server to user terminals

viewing the product catalog previews in the most effective format.

229. Li explains that device capabilities are provided to the server through a variety of mechanisms including, for example, User Agent fields in an HTTP request. Ex. 1007, 6:30-35. Li further explains that versions that do not comport with the device's capabilities are "filtered out" and will not be sent to the user terminal. Ex. 1007, 6:49-56 ("[T]he versions from the InfoPyramids that do not meet client capabilities 320 are filtered out. For example, all versions that are in video modality can be filtered out if the device is not capable of displaying video. Similarly, all versions that are color images can be filtered out for a device that has only a black and white or gray-level screen."); *see also* Ex. 1007, 10:62-65 ("Before we start the resource allocation process, we remove from consideration all the versions of items that a client is not capable of handling."). Next, resources are allocated for each InfoPyramid to select the implementation to send to the client device. Ex. 1007, 6:64-67 ("Then, in step 470, the resources allocated for each InfoPyramid are used to select the appropriate version 374, which has not been previously filtered out in step 420, to render the customized multimedia document 370."). Because various implementations are "filtered out" based on the device capabilities, Li in view of Senoh renders obvious *selecting a portion of the catalog to be presented to the subscriber, based on the device capabilities of the wireless device used by the subscriber* and because the device capabilities are indicated by the request itself, this selection is *in response to the request.*

230. A POSITA would have understood that in the combined Senoh-Li system a request for the product catalog from a client device is sent to Senoh's relay server. A portion of the product catalog is selected from the relay server in response to this request to be presented to the subscriber on their terminal. Based on the teachings of Li, a POSITA would have understood that first content needed ot be filtered out if it could not be displayed on the wireless terminal. Ex. 1007,

6:49-56. Then, after the filtering, the correct item from the InfoPyramids that have not been filtered out is determined based on the resource allocation process described in Li. Ex. 1007, 6:57-67. These processes are performed *based on the device capabilities of the wireless device used by the subscriber* provided from the client device. *See also* Ex. 1007, 6:42-44 ("The content adaptation process 350 uses the client profile 310 to select from among the InfoPyramids 280 the versions 374 that best satisfy the particular client profile."). And, as the POSITA would have understood only *a portion of the product catalog* is selected because the preview content is only provided in one format at most; unsupported content that cannot be viewed by the user's wireless terminal will not be presented to the subscriber.

7. *[2E] presenting the selected portion of the product catalog to the subscriber via a wireless network, such that the selected portion, as presented to the subscriber, provides only a single description of each item of digital content in said portion, regardless of the number of implementations of each said item.*

231. The combination of Senoh and Li renders obvious *presenting the selected portion of the product catalog to the subscriber via a wireless network, such that the selected portion, as presented to the subscriber, provides only a single description of each item of digital content in said portion, regardless of the number of implementations of each said item.*

232. The presentation of the *selected portion of the product catalog* occurs when the preview is served to the user terminal for display or playback. In other words, a subscriber using Senoh's cellular phone to view the product catalog including video previews, Ex. 1004, ¶¶[0044], [0060], [0074], would be presented with the selected portion of the product catalog via a wireless network. Using the combined teachings of Senoh and Li, the selected portion, as presented to the

subscriber, *provides only a single description of each item of digital content in said portion, regardless of the number of implementations.*

233. The POSITA would have recognized that Senoh's catalog would have been presented in an optimal format for the particular end-user device as selected using the Li InfoPyramids. Ex. 1007, 6:49-67 (explaining that "versions from the InfoPyramids 280 that do not meet client capabilities 320 are filtered out" and "resources allocated for each InfoPyramid are used to select the appropriate version 347, which has not been previously filtered out in step 420, to render the customized multimedia document 370"). And, content that cannot be supported by the wireless terminal is "filtered out" meaning that portion of the product catalog is not even considered in allocating resources to identify the optimal multimedia content implementation to send to the user device. Ex. 1007, 6:49-54. Thus, in this respect, in the combined Senoh-Li system, a *portion of the product catalog, which provides only a single description of each item of digital content regardless of how many implementations of each item of information* is provided to the subscriber wireless device because at most only one implementation will be selected, and if no version is compatible, the content will not be sent from the relay server to the user terminal and a description of the incompatible content will not be provided. For instance, while Li's InfoPyramids may include several different implementations of a particular preview of a video in Senoh's catalog, at most only one description of the item including preview and any associated text is ultimately provided to the subscriber. And, if no version is available, the content will not be provided at all—thus suggesting to the POSITA that the description of the content should be omitted from presentation to the user terminal because the user cannot view it.

8. Senoh in view of Li Renders Claim 2 Obvious; Motivation to Combine/Modify Senoh

234. The differences between the subject matter of claim 1 and Senoh and Li are discussed above in section §XI.A. Senoh and Li also render claim 2 obvious and the reasons that the claimed subject matter would have been obvious are the same as those that I have provided with respect to claim 1 and the combination of Senoh and Li and I incorporate by reference my analysis of claim 1 here. *See supra* §XI.A.

C. Claim 4

1. [4P] A method as recited in claim 2, further comprising:

235. I discuss how Senoh and Li render claim 2 obvious above. *See supra* §XI.B.

2. [4A] receiving from the subscriber a request for one of the items of digital content in said portion of the product catalog;

236. Senoh discloses and renders obvious a method that includes a step of *receiving from the subscriber a request for one of the items of digital content in said portion of the product catalog.*

237. Senoh provides the following teachings relevant to this limitation:

> A sample catalog compiling plural catalog data entries is shown in FIG. 4. The catalog can be posted to a common bulletin board (electronic bulletin board) accessible from the network. Users can then select desired content by accessing the bulletin board on the relay server 2 and viewing the catalog. It should be further noted that the content ID is also contained in the preview data extracted from the content.

Ex. 1004, ¶[0045].

> The user terminal 1 is described next. The user terminal 1 is the terminal or computer whereby a user views the

> bulletin board 25 containing the catalog data, views previews of content from the catalog data on the bulletin board 25, and views or listens to the content. If there is content that the user wishes to purchase, the user sends a purchase request to the content provider (marketer or copyright holder of the content on the content server 3). This request contains the e-mail address or other information specifying the content provider or other party marketing the content. When the content server 3 receives such a purchase request, it sends a request for credit card information, electronic money, or other payment method to the user terminal 1. The content server 3 also requests the format supported by the user terminal 1 for viewing the content.

Ex. 1004, ¶[0057].

238. Senoh teaches that "[u]sers can select desired content" from the catalog, Ex. 1004, ¶[0045], and then send "a purchase request to the content provider." Thus, a request to have content delivered to the user device from the catalog discloses this limitation. So too does the request referred to in my discussion of Limitation [2C], discussed above, which requests one of the previews along with a request for the display of the product catalog so the user can view the preview on their device. *See* Ex. 1004, ¶¶[0043]-[0045].

3. [4B] selecting an implementation of the requested item of digital content, based on device capabilities of the wireless used by the subscriber; and

239. Senoh discloses and renders obvious a step of *selecting an implementation of the requested item of digital content, based on device capabilities of the wireless device used by the subscriber.*

240. For example, Senoh explains that "[t]he content server . . . requests the format supported by the user terminal 1 for viewing the content." Ex. 1004, ¶[0057]. Content is then conveyed from the content server to the relay server, and

then from the relay server to the user terminal. Ex. 1004, ¶¶[0058]-[0059]. The format of that data (*i.e.*, its implementation) provided by the relay server 2 is selected based on the device capabilities of the wireless device:

> If the format of the content sent to the relay server 2 differs from the format required by the user terminal 1, the relay server 2 converts the received format to the format viewable by the user terminal 1, and then transmits the content to the user terminal 1. The term "viewable" means that the user terminal 1 supports the format in which the content will be reproduced, or can display the content at the performance of the output display (the display performance of the monitor) of the user terminal 1.

Ex. 1004, ¶[0059]. Thus, a POSITA would have understood that an implementation of the content is selected based on device capabilities for the specific wireless device that purchased the content.

241. Additionally, in the context of the combined Senoh-Li system, the request includes an indication of the device capabilities—e.g., the User-Agent field in an HTTP request, Ex. 1007, 6:30-34—as discussed above with respect to Limitation [2Aii]. *Supra* §XI.B.3. This request would have allowed the server to select an implementation of the requested item of content (*e.g.*, a particular preview) based on the capabilities of the wireless device used by the subscriber (*i.e.*, its installed CODEC).

4. [4C] downloading the selected implementation of the item of digital content to the wireless device used by the subscriber.

242. Senoh discloses or renders obvious a step of downloading the selected implementation of the item of digital content to the wireless device used by the subscriber. As to full-length content, Senoh explains that if the implementation received from the content server matches the requirements of the user terminal,

"the relay server 2 simply sends the content directly to the user terminal 1." Ex. 1004, ¶[0058]. But, if the implementation received by the relay server from the content server does not match, a "conversion process" is performed to convey "the received format to the format required by the user terminal." Ex. 1004, ¶[0059]. The selected implementation of the content is thus downloaded to the wireless device used by the subscriber. In the alternative, the video content previews are downloaded when they are served by the relay server after the user terminal requests to view the product catalog including such previews, as explained above.

D. Claim 8

1. [8P] A system comprising:

243. I understand that this portion of the claim is called the preamble. I further understand that there are certain legal principles that must be applied to determine if the preamble of a claim is a limitation or not. I have not been asked to apply those principles. Instead, I have been asked to assume that the preamble of the claim is a limitation for the purposes of my analysis and I have done so.

244. The preamble is disclosed by Senoh because Senoh describes a system, namely "an electronic content distribution system." Ex. 1004, Abstract, FIG. 2, ¶[0022] (FIG. 2 shows "a specific configuration of [the] content distribution system").

2. [8A] a network interface through which to communicate over a communication network; and

245. Senoh discloses or renders obvious a *network interface through which to communicate over a communication network* for the reasons I explained in connection with this same limitation in connection with the combination Senoh in view of Agraharam. *Supra* §IX.B.2.

3. [8B] a download manager to

246. Senoh teaches the *download manager* for the reasons I explained in connection with this same limitation in connection with the combination Senoh in view of Agraharam. *Supra* §IX.B.3.

4. [8Bi] receive and store a plurality of items of content to be made available for use in wireless communication devices used by a plurality of wireless telecommunications subscribers,

247. This limitation is not different from Limitation [1Ai] in any material way. I have discussed that limitation above. My analysis of that limitation of claim 1 is equally applicable here. *Supra* §XI.A.2.

5. [8Bii] including receiving a plurality of different implementations of at least one of the items of content, where each implementation of any given item of content corresponds to a different set of device capabilities; and

248. This limitation is not different from Limitation [1Aii] in any material way. I have discussed that limitation above. My analysis of that limitation of claim 1 is equally applicable here. *Supra* §[XI.A.3.

6. [8Biii] maintain a product catalog containing a description of the items of content, the product catalog including, in association with each item of content, a reference to each implementation of said item of content.

249. This limitation is not different from Limitation [1B] in any material way. I have discussed that limitation above. My analysis of that limitation of claim 1 is equally applicable here. *Supra* §XI.A.4.

7. Senoh in view of Li Renders Claim 8 Obvious; Motivation to Combine/Modify Senoh

250. The differences between the subject matter of claim 1 and Senoh and

Li are discussed above in section §XI.A.5. The same differences are present between claim 8 and Senoh and Li. The reasons that the claimed subject matter would have been obvious, including reasons that the POSITA would have found claim 8 obvious are the same as those that I have provided with respect to claim 1 and I incorporate by reference my analysis of claim 1 here. *See supra* §XI.A.5.

E. Claim 9

1. [9P] A system comprising:

251. I understand that this portion of the claim is called the preamble. I further understand that there are certain legal principles that must be applied to determine if the preamble of a claim is a limitation or not. I have not been asked to apply those principles. Instead, I have been asked to assume that the preamble of the claim is a limitation for the purposes of my analysis and I have done so.

252. The preamble is disclosed by Senoh because Senoh describes a system, namely "an electronic content distribution system." Ex. 1004, Abstract, FIG. 2, ¶[0022] (FIG. 2 shows "a specific configuration of [the] content distribution system").

2. [9A] a processor; and

253. A POSITA would have understood that Senoh discloses *a processor* even though it is not explicitly described in Senoh's text. This is because Senoh's context conveys to the POSITA that processor-based technology is used for communications, data processing and handling (including transcoding), and other functionality performed, for example, by Senoh's relay server. This is clear from Senoh's references to a "content distribution system" including a "relay server 2." Ex. 1004, ¶[0029]. These entities communicate over "communication network 4, such as the Internet . . . ," which tells the POSITA that a processor is used. Ex. 1004, ¶[0064]. Senoh further teaches that

> The processing operations of the various components of the above described content distribution system can also be written as a computer program causing a computer to execute the various processes. Such a computer can be recorded to a CD, DVD, or other optical disc, to a floppy disk or other magnetic storage medium, or to flash memory or other semiconductor storage medium. The computer program could yet further be distributed as an electric signal via the Internet or other network.

Ex. 1004, ¶[0081]. These disclosures tell the POSITA that a processor is present and performs the functions discussed above (based on the combined teachings of Senoh and Li). But, even if a processor was not disclosed by Senoh, a POSITA would have understood how to implement the functionality described by Senoh and Li in a processor and would have found it obvious to do so because processors were commonly used to execute computer-readable instructions in computer systems such as those described by Senoh. Senoh refers to content server and relay server and a POSITA knows that a server is a higher capacity computing system including a processor among other components.

3. *[9B] a storage facility accessible to the processor and containing code which, when executed by the processor, causes the processing system to*

254. Senoh discloses or at least renders obvious the claimed storage facility accessible by the processor and containing code which, when executed by the processor causes the processing system to perform the functionality discussed in the following limitations.

255. Senoh discloses:

> The processing operations of the various components of the above described content distribution system can also be written as a computer program causing a computer to execute the various processes. Such a computer can be recorded to a CD, DVD, or other optical disc, to a floppy

> disk or other magnetic storage medium, or to flash memory or other semiconductor storage medium. The computer program could yet further be distributed as an electric signal via the Internet or other network.

Ex. 1004, ¶[0081].

256. The relay server's functionality including storage of catalog data and previews and providing the previews to the end-user terminal would have been implemented based on computer code, and that such code would have been stored in a storage facility so that the computer-readable instructions could be fetched and executed by the processor to perform the functionality disclosed and rendered obvious by Senoh. This is a commonplace technique as understood by the POSITA.

> 4. *[9Bi] receive and store a plurality of items of digital content to be made available for use in wireless communication devices used by a plurality of wireless telecommunications subscribers,*

257. This limitation is not materially different than Limitation [2Ai] and is disclosed and rendered obvious by Senoh for the same reasons I have discussed above. *See supra* §XI.B.2. I incorporate that discussion here by reference.

> 5. *[9Bii] including receiving and storing a plurality of different implementations of at least one of the items of digital content, where each implementation of any given item of digital content corresponds to a different set of device capabilities;*

258. This limitation is not materially different than Limitation [2Aii] and is disclosed and rendered obvious by Senoh in view of Li for the same reasons I have discussed above. *See supra* §XI.B.3. I incorporate that discussion here by reference.

6. *[9Biii] maintain a product catalog containing a description of the items of digital content, wherein the product catalog includes, in association with each item of digital content, a reference to each implementation of said item of digital content;*

259. This limitation is not materially different than Limitation [2B] and is disclosed and rendered obvious by Senoh in view of Li for the same reasons I have discussed above. *See supra* §XI.B.4. I incorporate that discussion here by reference.

7. *[9Biv] receive a request from a wireless device used by one of the subscribers;*

260. This limitation is not materially different than Limitation [2C] and is disclosed and rendered obvious by Senoh in view of Li for the same reasons I have discussed above. *See supra* §XI.B.5. I incorporate that discussion here by reference.

8. *[9Bv] in response to the request, select a portion of the product catalog to be presented to the subscriber, based on device capabilities of the wireless device used by the subscriber; and*

261. This limitation is not materially different than Limitation [2D] and is disclosed and rendered obvious by Senoh in view of Li for the same reasons I have discussed above. *See supra* §XI.B.6. I incorporate that discussion here by reference.

9. [9Bvi] cause the selected portion of the product catalog to be presented to the subscriber via a wireless telecommunications network, such that the selected portion, as presented to the subscriber, provides only a single description of each item of digital content in said portion, regardless of the number of implementations of each said item.

262. This limitation is not materially different than Limitation [2E] and is disclosed and rendered obvious by Senoh in view of Li for the same reasons I have discussed above. *See supra* §XI.B.7. I incorporate that discussion here by reference.

10. Senoh in view of Li Renders Claim 9 Obvious; Motivation to Combine/Modify Senoh

263. The differences between the subject matter of claim 2 and Senoh and Li are discussed above in section §XI.A.5. The same differences are present between claim 9 and Senoh and Li. The reasons that the claimed subject matter would have been obvious, including reasons that the POSITA would have found claim 8 obvious are the same as those that I have provided with respect to claim 2 and I incorporate by reference my analysis of claim 2 here. *See supra* §§XI.A.5, XI.B.

XII. CONCLUSION

264. For the reasons discussed above it is my opinion that claims 1, 2, 4, and 8-9, of the '790 patent would have been obvious to a POSITA.

* * * * *

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XIII. DECLARATION IN LIEU OF OATH

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under § 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon. If called to testify as to the truth of the matters stated herein, I could and would testify competently.

I declare under penalty of perjury that the foregoing is true and correct.

June 22, 2022

A. L. Narasimha Reddy

A.L. Narasimha Reddy, Ph.D.

Appendix A

NARASIMHA REDDY
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Educational Record:

University of Illinois (Urbana) : Ph.D. in Electrical and Computer Engineering. Aug. 1990

University of Illinois (Urbana) : M.S. in Electrical and Computer Engineering. May 1987

Indian Institute of Technology (Kharagpur, India) : Bachelor of Technology (Honors) in Electronics and Electrical Communication Engineering. May 1985

Thesis Topic:

Ph.D Thesis : Issues in IO architectures for high-performance/ multiprocessor systems

M.S. Thesis : Algorithm based Fault Detection Techniques for Specific Applications

B.Tech Thesis (Project) : Studies on Residue Number System for Signal Processing

Honors and Awards:

Cited for one of the most influential papers of first ACM Multimedia Conference

College of Engineering Excellence Award for Service, Texas A & M University, 2022

Catedra de Excelencia, University of Carlos III, Madrid, Spain, Aug. 2009-Feb.2010

Distinguished Achievement Award for teaching (College level), AFS, TAMU, 2005

Ford Fellow, College of Engg., TAMU 2004, TEES Fellow, College of Engg., TAMU, 2001, Neely Faculty Fellow, College of Engg., TAMU, 1999

Outstanding Professor Award, Dept. of ECE, TAMU, 2003-04, 2014-15

Outstanding Professor Award, IEEE Student branch, TAMU, 1997-1998

NSF Career Award (1996-2000)

5 Patents and an IBM Plateau Invention Achievement Award

IBM Graduate Fellowship (1988-90)

Presidential Silver Medal, Indian Institute of Technology, Kharagpur, India (May 86)

Research Interests:

Storage Systems, Cybersecurity, Computer Networks and Computer Architecture

Work Experience:

Associate Dean for Research, College of Engineering, Texas A&M Univ., Apr. 2016 -Aug. 2021
Associate Agency Director for Strategic Initiatives and Centers, TEES, Aug. 2016 - Aug. 2021
Assistant Agency Director for National and Global Initiatives, TEES, June 2014 - Apr. 2016
J.W. Runyon Professor, Dept. of ECE., Texas A&M University, Oct. 2008-Present
Professor, Dept. of Elec. and Compu. Engg, Texas A & M University, Sep. 2004 -Sep. 2008

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Associate Professor, Dept. of Elec. Engg, Texas A & M University, Aug. 1995 - Aug. 2004
Research Staff Member, IBM Almaden Research Center: Aug. 1990 - Aug. 1995

Professional Activities:

- **Fellow** of the IEEE Computer Society, member of ACM SIGARCH
- Associate Editor, IEEE/ACM Transactions on Networking, 2014-2016
- Member, Advisory Board of Center for Hyper Scale Micro Data Center, South Korea
- External Evaluator, Faculty Promotion Committee, University of Jordan, 2012
- Program Committee Member, INFLOW Workshop, 2016
- Program Committee Member, NVM Workshop, 2011, 2015, 2016
- Program Committee Member, IEEE ANTS Conf., 2014
- Program Committee Member, Parallel Data Storage Workshop, 2012-2014
- Member, Information Technology Research Academy Strategy Formulation, India, Oct. 2011
- Review Chair, Los Alamos National Lab Research Information Institute program, Apr. 2011
- Program Committee Member, USENIX HotStorage Conf., 2010-2012
- External Evaluator, Faculty Search Committee, ICS-FORTH, Crete, Greece, 2009
- Program Co-chair, IEEE Broadnets 2008
- Area Lead, IEEE Infocom 2008
- Program Committee Member, USENIX FAST Conf. 2009
- Panels Co-Chair, COMSWARE 2008
- Program Committee Member, ICDCS 2008, 2013
- Program Committee Member, IEEE ICNP 2008
- Program Committee Member, COMSNETS 2009-2013, 2015
- Program Committee Member, COMSWARE 2007-2008
- Program Committee Member, Int. Workshop Visualization for Computer Security, 2006
- Program Committee Member, CoNEXT Conference, 2006, 2007, 2009
- Program Committee Member, Int. Workshop on QOS, 2006-2011
- Program Committee Member, IEEE Infocom, 2005-2015
- External Reviewer, Faculty promotion Committee, KAIST, Korea, 2003
- Technical Consultant, EMC Corp., 2001-2003

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- Educational Content Expert on Computer Networking, Jones International University
- Member, Technical Advisory Board, Netgeo Inc., Mountain View
- Technical Adviser, TBD Networks
- Proposal Reviewer, Netherlands NSF
- Program Committee member, ACM Multimedia Conference, 2002
- Program Committee member, MCW-2001, Multimedia on Clusters of Workstations, 2001
- Program Committee member, IEEE Int. Conf. on Multimedia Comp. and Systems, 1999
- Panel Chair, IEEE Conf. High Performance Computer Architecture, 1999
- Program Committee member, High Performance Computing, 1999
- Program Committee member, Int. Conf. on Parallel Processing, 1998
- Tutorial Chair, IEEE Conf. on Multimedia Computing Systems, 1998
- Panel Chair, Int. Conf. on Parallel Processing, 1995
- Program Committee member, Int. Conf. on Parallel Processing, 1995
- Program track coordinator, Hawaii Int. Conf. on Systems and Sciences, 1994

Patents:

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- Reddy, A. L. N. and Haskin R., "Video Servers", invited book chapter in *Communications Handbook*, CRC Press, 1996.

- Reddy, A. L. N., "Improving the interactive responsiveness in a video server", invited book chapter in *Multimedia Information Storage and Management*, Kluwer Academic Publishers, Dec. 1996.

- Reddy, A. L. N., "Scheduling in Multimedia Systems", invited book chapter in *Design and Applications of Multimedia Systems*, Kluwer Academic Publishers, Aug. 1995.

Rigorously Refereed Conference Publications:

- Tiwari, A., , Villasenor, E. J., Gupta, N., Reddy, A. L. Narasimha, Karri, R,, and Bukkaptnam, Satish T. S. "Protection against Counterfeiting Attacks in 3D Printing by Streaming Signature-embedded Manufacturing Process Instructions". In Proceedings of the 2021 Workshop on Additive Manufacturing (3D Printing) Security (AMSec 21), 2021,

- Qin, M.1, Reddy, A. L. Narasimha, Gratz, P., Pitchumani, R., Ki, Y-S., "KVRAID: High Performance,Write Efficient, Update Friendly Erasure Coding Scheme for KV-SSDs", accepted at ACM Systor Conference., June 2021.

- Wen, F., Qin, M.1, Gratz, P., and Reddy, A. L. Narasimha, "OpenMem: Hardware/Software Cooperative Management for Mobile Memory System", accepted at ACM/IEEE Design Automation Conference, Dec. 2021.

- Wen, F., Qin, M.1, Gratz, P., and Reddy, A. L. Narasimha, "FPGA-based Hyrbid Memory Emulation System", accepted at Field Programmable Logic and applications Conference, Aug. 2021.

- Qin, M.1, Lee, J-H., Pitchumani, R., Ki, Y-S., Reddy, A. L. Narasimha, Gratz, P., "A Generic FPGA Accelerator for Minimum Storage Regenerating Codes", Proceedings of the 25th Asia and South Pacific Design Automation Conference, January, 2020.

- Chou, C-C.,1, Chen, Y., Milojicic, D., Reddy, A. L. Narasimha, Gratz, P., "Optimizing Post-Copy Live Migration with System-Level Checkpoint Using Fabric-Attached Memory, 2019 IEEE/ACM Workshop on Memory Centric High Performance Computing (MCHPC), Denver, CO, USA, 2019, pp. 16-24.

- Chou, Chih Chieh[1], Jung, J[1], Reddy, A.L. Narasimha, Gratz, Paul V., and Voight, Doug, "vNVML: An Efficient User Space Library for Virtualizing and Sharing Non-Volatile Memories", IEEE 35th International Conference on Mass Storage Systems and Technology, 2019.

- Zheng, Z.[1], Webb, A.[1], Reddy, A. L. Narasimha, Bettati, Riccardo, "IoTAegis: A Scalable Framework to Secure the Internet of Things", Invited Paper at IEEE ICCCN, July 2018.

- Zheng, Z.1, Reddy, A. L. Narasimha, "Safeguarding Building Automation Networks: THE-Driven Anomaly Detector Based on Traffic Analysis", IEEE ICCCN (Invited Paper), July 2017.

- Fedorov, V[1]., Kim, J., Qin, M[1]., Reddy, A. L. Narasimha and Gratz, P., "Speculative Paging for future NVM and SSD", Proc. of MEMSYS Conference, Oct. 2017.

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- Zhang, Z[1], and Reddy, A. L. Narasimha, "Safeguarding Building Automation Networks: THE-Driven Anomaly Detector Based on Traffic Analysis", Invited Paper at ICCCN 2017, July 2017.
- Zhang, Z[1], and Reddy, A. L. Narasimha, "Towards Improving Data Validity of Cyber-Physical Systems through Path-Redundancy", 3rd ACM Cyber-Physical Systems Security Workshop, April 2017.
- Kim, J., Pugsley, S., Gratz, P., Reddy, A. L. N., Wilkerson, C., and Chisti, Z., "Path Confidence based Lookahead Prefeteching", MICRO Conf., Oct. 2016. **Best Paper Nomination.**
- Webb, A.[1] and Reddy, A. L. Narasimha, "Finding proxy users at the service using anomaly detection", IEEE Conf. on Communications and Network Security, Oct. 2016.
- Moon, S[1]., and Reddy, A. L. Narasimha, "Adaptive policies for balancing performance and lifetime of mixed SSD arrays through workload sampling", IEEE Mass Storage Symposium, April 2016
- Fedorov, V.[1], Reddy, A. L. Narasimha and Gratz, P., "Shared Last-Level Caches and The Case for Longer Timeslices", MEMSYS Conference, Oct. 2015
- Kim, J., Fedorov, V.[1], Gratz, P., and Reddy, A. L. Narasimha, "Dynamic Memory Pressure Aware Ballooning", MEMSYS Conference, Oct. 2015
- Fedorov, V.[1], Qiu, S.[1], Reddy, A. L. Narasimha and Gratz, P., "ARI: Adaptive LLC-memory traffic management", HiPEAC Conf., Jan. 2014.
- Moon, S[1] and Reddy, A. L. Narasimha, "Don't let RAID raid the lifetime of your SSD array", Proc. of USENIX HotStorage Conf., June 2013.
- Qiu, S[1], and Reddy, A. L. Narasimha, "NVMFS: A hybrid file system for improving random write in NAND-flash SSD", Proc. of Mass Storage Systems Symposium, May 2013.
- Lee, Y-O[1], and Reddy, A. L. Narasimha, "Multipath Routing for Reducing Network Energy", IEEE Greencom Conf., Sep. 2012.
- Qui, S[1]., Reddy, A. L. Narasimha, "Exploiting superpages in a nonvolatile memory file systems", IEEE Mass Storage Symposium, Apr. 2012.
- Moon, S[1]., Reddy, A. L. Narasimha, "Write amplification due to ECC on flash memory or leave those bit errors alone", IEEE Mass Storage Symposium, Apr. 2012.
- Wu, X[1]., Reddy, A. L. Narasimha, "SCMFS: A file system for storage class memory", ACM/IEEE Supercomputing Conf. SC11, Nov. 2011.
- Yadav S.[1], Reddy, A. L. Narasimha, "Winning with DNS Failures: Strategies for faster botnet detection", SecureComm Conf., Sep. 2011.
- Lee, Y-O[1], Rengarajan, B., and Reddy, A. L. Narasimha, "Reaching approximate Wardrop equilibrium at reduced cost of link state updates" , COMSNETS Conf., Jan 2011.

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- Yadav, S[1], Reddy, A. K.[1], Reddy, A. L. Narasimha and Ranjan, S., "Detecting algorithmically generated malicious domain names" , Proc. of Internet Measurement Conference, Nov. 2010.
- Wu, X[1]., Reddy, A. L. Narasimha, "Exploiting concurrency to improve latency and throughput in a hybrid storage system", **Best Paper Nomination**, IEEE MASCOTS Conf., Aug. 2010.
- Devakota, P[1]., Reddy, A. L. Narasimha, "Performance of Quantized Congestion Notification in TCP Incast Scenarios of Data centers", IEEE MASCOTS Conf., Aug. 2010.
- Lee, Y-Oh[1]., Reddy, A. L. Narasimha, "Disjoint Multi-Path Routing and Failure Recovery", Proc. of ICC, May 2010.
- Yadav, S[1]., Reddy, A. L. Narasimha, "DNS Anomaly detection with NS and AS information", IASTED Conf. on Network Security, Nov. 2010.
- Wu, X[1]., Reddy, A. L. Narasimha, "Managing storage space in a flash and disk hybrid storage system ", IEEE MASCOTS Conf., Oct. 2009.
- Podduturi, V., Kim, Y., Shakkottai, S., Reddy, A. L. Narasimha, "MultiTrack: A delay and cost aware P2P Overlay architecture", ACM Sigmetrics, June 2009.
- Kotla, K[1]., Reddy, A. L. N., "Making a delay-based protocol adaptive to heterogeneous environments", Proc. of IwQOS, June 2008.
- Kang, S[1]., Reddy, A. L. N., "User-centric data migration in networked storage systems", Proc. of IPDPS, April 2008.
- Bhandarkar, S[1]., Reddy, A. L. N., Zhang, Y., Loguinov, D.,"Emulation of AQM at end hosts", Proc. ACM Sigcomm, Aug. 2007.
- Bhandarkar, S[1]., Reddy, A. L. N., "Robustness to packet reordering in high-speed networks", Proc. of Pfldnet, Feb. 2007.
- Al-Najjar, C[1]., Reddy, A. L. N., "A service provider's approach to improving performance of aggregate voice-over-IP traffic", Proc. of IWQOS, June 2006.
- Kim, S[1]., Reddy, A. L. N., "Netviewer: A Network traffic visualization and analysis tool", Proc. of USENIX LISA Conference, Dec. 2005, 185-196.
- Liu, Y[1], and Reddy A. L. N., "Routing among a group of multi-homed stub networks", Proc. of Globecom, Dec. 2005.
- Bhandarkar, S[1]., Reddy, A. L. N., "LTCP: A layered approach to TCP for high-speed networks", PFLDNet, Feb. 2005.
- Kim, S[1]., Reddy, A. L. N., "Modeling network traffic as images", ICC, May 2005.
- Kim, S[1]., Reddy, A. L. N., "A study of analyzing network traffic as images in real-time", IEEE Infocom, March 2005.

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- Kim, S[1]., Reddy, A. L. N., "Real-time detection and containment of network attacks using QOS regulation", Proc. of ICC, May 2005.
- Kang, S[1]., Reddy, A. L. N., "Virtual Allocation: A scheme for flexible storage allocation" OASIS workshop at ASPLOS, Oct. 2004.
- Liu, Y[1], and Reddy A. L. N., "A fast rerouting scheme for OSPF/IS-IS networks", Proc. of ICCCN, Oct. 2004.
- Achanta, P.[1], and Reddy A. L. N., "LRU-FQ: Design and Evaluation of a Partial State Router", Proc. of ICC 2004, June 2004.
- Zhao, Z[1]., Reddy, A. L. N., "Impact of bandwidth-delay product and non-responsive flows on queue management schemes", Proc.of ICC 2004, June 2004.
- Bhandarkar, S[1]., Reddy, A. L. N., "TCP-DCR: Making TCP robust to non-congestion events", Proc. of Networking 2004, May 2004.
- Kim, S[1]., Reddy, A. L. N., and Vannucci, M., "Detecting traffic anomalies at source through aggregate analysis of packet header data", Proc. of Networking 2004, May 2004.
- Kim, S[1]..Reddy, A. L. N., and Vannucci, M., "Detecting traffic anomalies using discrete wavelet transform", Proc. of Int. Conf. on Information Networking, Feb. 2004.
- Ma, X[1]., and Reddy, A. L. N., "SPIRAL: A novel third party transfer scheme for network attached devices", IEEE Mass Storage Symposium, April 2003.
- Zhao, Z[1]., Ametha. J., Swaroop. D. and Reddy A. L. N., "A method for estimating non-responsive traffic at a router", ACM Conf. on Sigmetrics, June 2002.
- Garg, A[1]., and Reddy, A. L. N., "Mitigating Denial of service attacks through QOS regulation", IwQoS workshop, May 2002.
- Wijayaratne, R[1]. and Reddy, A. L. N., "System support for providing integrated services from networked multimedia storage servers", ACM Conf. on Multimedia, October 2001, 270-279.
- Smitha[1] and Reddy, A. L. N., "LRU-RED: An active queue management scheme to contain high bandwidth flows at a congested router", in IEEE Globecomm Conference, Nov. 2001.
- Smitha[1], Kim, I[1]., and Reddy, A. L. N., "Identifying long term high rate flows at a router", in Proc. of High Performance Computing, Dec. 2001.
- Yeom, I[1]., and Reddy, A. L. N., "Adaptive marking for aggregated flows", in Proc. of IEEE Globecom, Nov. 2001.
- Gopalakrishnan, S[1]. and Reddy, A. L. N., "SACRIO: An active buffer management scheme for Differentiated Service Networks", Proc. of NOSSDAV, June 2001.
- Ma, X[1]. and Reddy, A. L. N., "MVSS: MultiView Storage Systems", Proc. of Int. Conf. on Distributed Computer Systems (ICDCS), Apr. 2001.
- Khaleel, A[1]. and Reddy, A. L. N., "Evaluation of Request and data distribution polices in a clustered server", Proc. of High Performance Computing, Dec. 1999.

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- Yeom, I[1]. and Reddy, A. L. N., "Realizing throughput guarantees in a differentiated services network", Proc. of IEEE Int. Conf. on Multimedia Computing and Systems, June 1999.
- Wijayaratne, R[1]., Reddy, A. L. N., "Integraed QOS management for disk I/O", Proc. of IEEE Int. Conf. on Multimedia Computing and Systems, June 1999.
- Yeom, I[1]. and Reddy, A. L. N., "Impact of marking strategy on aggregated flows in a differentiated-services network", Proc. of IEEE International Workshop on QOS (IwQOS 99), June 1999.
- Tong, D[1]. and Reddy, A. L. N., "QOS Enhancement with Partial Sate", Proc. of IEEE International Workshop on QOS (IwQOS 99), June 1999.
- Gupta, S[1]. and Reddy, A. L. N., "IPRP: A Client-oriented IP Redirection mechanism", Proc. of IEEE Infocom Conf., March 1999.
- Wijayaratne, R[1]. and Reddy, A. L. N., "Techniques for improving the throughput of VBR streams", Proc. of ACM/SPIE Multimedia Computing and Networking, Jan. 1999.
- Ma, G[1]. and Reddy, A. L. N., "An evaluation of storage systems based on network-attached disks", Proc. of ICPP Conf., Aug. 1998.
- Reddy, A. L. N., "Effectiveness of caching policies for a web server", Proc. of High Performance Computing, Dec. 1997.
- Reddy, A.L.N., "Caching strategies for a multimedia server", Proc. of IEEE Int. conf. on Multimedia Computing and Systems, June 1997.
- Reddy, A. L. N., "Improving Latency in an Interactive Video server", Proc. of SPIE conf. on Multimedia Computing and Networking, Feb. 1997.
- Reddy, A.L.N., "Movie and communication scheduling on a multiprocessor video server system", Proc. of *IEEE Int. Conf. on Multimedia Comput. and Systems*, May. 1995.
- Reddy, A.L.N., Wyllie, J., "Disk Scheduling in a Multimedia I/O System", Proc. of *1st ACM Conf. on Multimedia*, Aug. 1993. Included as a chapter in "A guided tour of multimedia systems and applications", IEEE Press, 1995. Translated into Japanese by *Nikkei Electronics*, a Japanese technical magazine. To be included as "*one of the most influential papers*" in ACM Transactions on Multimedia, Applications and Communications.
- Chandy, J., and Reddy, A.L.N., " Failure evaluation of disk array organizations", Proc. of *Int. Conf. on Distributed Computing Systems*, May 1993.
- Reddy, A.L.N. and Freitas, R., "Fault-tolerance of adaptive routing algorithms in multicomputers", Proc. of *4th IEEE Symp. on Parallel and Distributed Processing*, Dec. 1992.
- Reddy, A.L.N., "A Study of IO System Organizations", Proc. of *ACM Int. Symp. on Computer Architecture*, May 1992.
- Reddy, A.L.N., "Reads and Writes: When IOs aren't the same", Proc. of Hawaii Int. Symp. on Systems and Sciences, Jan. 1992.
- Reddy, A.L.N., Banerjee, P. and Chen, D.K., "Compiler Support for Parallel I/O Operations", Proc. of *Int. Conf. on Parallel Processing*, Aug. 1991.

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- Reddy, A. L. N. and Banerjee, P., "Gracefully Degradable Disk Arrays", Proc. of *Int. Symp. on Fault Tolerant Computer Systems*, June 1991.
- Reddy, A. L. N. and Banerjee, P., "A Study of IO Behavior of Scientific Applications on A Multiprocessor", Proc. of *ACM Int. Symp. on Computer Architecture*, June 1990
- Reddy, A. L. N. and Banerjee, P., "Performance evaluation of multiple-disk IO systems", Proc. of *Int. Conf. on Parallel Processing*, Aug. 1989.
- Reddy, A. L. N. and Banerjee, P., "IO issues in hypercubes", Proc. of *ACM Int. Conf. on Supercomputing*, June 1989.
- Reddy, A. L. N., Banerjee, P. and Abrham, S.G., "IO embedding in Hypercubes", Proc. of *Int. Conf. on Parallel Processing*, August 1988.
- Reddy, A. L. N. and Banerjee, P., "A Fault-Secure Dictionary Machine", Proc. of *3rd International Conference on Data Engineering*, Feb. 1987.

Other Publications:

- Kim, J., Gratz. P., and Reddy, A. L. Narasimha, " Lookahead Prefetching with Signature Path", ACM ISCA Workshop on Data Prefetch Competition, June 2015
- Huang, B[1]., Wang. S1., and Reddy, A. L. Narasima, "Who is Hiring Whom: A New Method in Measuring Graduate Programs", ASEE conference, June 2015.
- Singh, A.[1], and Reddy, A. L. Narasimha, "Multi path PERT", **Invited Paper** at Int. Conf. on Computer Communications and Networks, July 2013.
- Amaleswaram, A.[1], Reddy, A. L. N., Yadav, S.[1], Gu. G., Yang, C., "CATS: Characterizing Automation of Twitter Spammers", **Invited Paper** at Int. COMSNETS conf., Jan. 2013.
- Wu, X.[1], and Reddy, A. L. N., "Data organization in a hybrid storage system", **Invited Paper** at Int. Conf. on Computing, Networking and Communications, ICNC'12, Feb. 2012.
- Yin, Z.[1], Hasari, C., Al-Nuweiri, H., and Reddy, A. L.N., "Improving the Performance of Delay Based Protocol in Delivering Real Time Media via Early Retransmission", IEEE ICT Conf., Apr. 2011.
- Yin, Z.[1], Al-Nuweiri, H., and Reddy, A. L.N., "Performance of Early retransmission scheme in streaming media", IEEE ICT Conf., Apr. 2010.
- Kim, S[1]., and Reddy, A. L. N., "An evaluation of the effectiveness of measurement-based anomaly detection techniques", ADSN workshop, held in conjunction with ICDCS, June 2006.
- Vellanki, S[1]., and Reddy, A. L. N., "Improving service availability during link failure transients through alternate routing", Tech. Report, Texas A & M University, Feb. 2003.
- Ma, X[1]., and Reddy, A. L. N., "Implementation and Evaluation of an active storage system prototype", Workshop on novel uses of System Area Networks, Feb. 2002.
- Reddy, A.L.N., " An evaluation of multiprocessor video server system", *IBM Confidential report*, June 1994.

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• Menon, J., Reddy, A.L.N., Treiber, K. and Tzou, S.Y., "Daisy: A Novel Heirachical Storage Management System, Functional Specification", *IBM Confidential Report*, 77 pages, Jan 1994.

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Recent Presentations:

- Tutorial on Network Security at Int. Conference on Information Security, Hyderabad, India, Dec. 2014
- Invited talk at IEEE Communications Soceity, Hyderabad, India, August 2014
- Invited talk at University of Texas at San Antonio, Nov. 2013
- Presentation at Flash Summit, Aug. 2013
- Invited talk at Georgia Tech., May 2013
- Keynote talk at Int. Conf. on Information Technology: New Generations, Las Vegas, April 2013
- Invited talk at COMSNETS Conf., Bangalore, India, Jan. 2013
- Invited talk at Int. Conf. on Networking and Communications, Maui, Feb. 2012
- Invited talk at NVRAMOS 2011, Jeju island, South Korea, Nov. 2011
- Invited talks at Korea University, Ajou University, Samsung and ADD, Korea, Nov. 2011
- Keynote talk at IEEE Int. Symp. on Computers and Communications, Italy, June 2010
- Catedra Series talk at University of Carlos III, Dec. 2009, Madrid, Spain
- Invited talk at Thomson Research, Paris, France, October 2009
- Invited talk at Telefonica Research, Barcelona, Spain, September 2009
- Distinguished Seminar Series, IBM Austin Research Lab, May 1 2008
- Invited talk at University of Illinois, November 2006
- Invited talk at Cisco, January 2005
- Invited talk at University of Birmigham, UK, June 2004
- Invited talk at Cisco Systems, San Jose, June 2002
- Invited talk at Juniper Networks, Mountain View, June 2002
- Invited talk at Univ. of California at Riverside, June 2002
- Invited talk at Nortel Networks, Santa Clara, June 2000
- Invited talk at Juniper Networks, Mountain View, June 2000
- Talk at Internet Engineering Task Force, Washington D.C., Oct. 1999
- Invited talk at EMC Corp., Boston, Aug. 1999
- Tutorial on "Scheduling for Multimedia Applications", presented at IEEE Int. Conf. on Multimedia Computing and Systems, June 1999

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- Tutorial on High-Performance I/O at IEEE/ACM Int. Conf on Computer Architecture,Atlanta, May 1999
- Invited talk at AT & T Research Center, Florham Park, March 1999
- Invited talk at Bell Labs Research Center, Murray Hill, March 1999
- Invited talk at EMC Corp., Boston, Nov. 1997

Funding:

- "Cooprative Research Agreement", Army Futures Command, Co-PI, 2019-24.
- "Multi-layer Cybersecurity and Situational Awareness to Enhance Resiliency in Qatars Power Grid, Qatar National Research Foundation, 2020-2025, co-PI.
- "Protecting Building Automation Networks from insider threats", 2016, QNRF, lead PI.
- EMC, DELL, HPE and Samsung membership participation in NSF I/UCRC Center.
- "NSF I/UCRC Center on Intelligent Storage", 2014, NSF, lead PI.
- "Equipment Donation", Viking Technologies, 2013.
- "Emerging memory architectures for big memory applications", National Science Foundation, 2013-2016, co-PI.
- "Exploiting social communication channels against cyber criminals", National Science Foundation, 2012-2015.
- "Client interfaces to object storage systems", Argonne National Lab, 2012-2015.
- "Detecting malicious activities by analyzing social communication contexts", Qatar National Research Foundation, 2012-2015.
- "Network traffic analysis for botnet detection", Narus Inc., Research gift, 2009-2010.
- "Design and Analysis of new generation of protocols for triple-play networks", QNRF, Jan. 1. 2008 - Dec. 31 2010, Co-PI.
- "Dynamic allocation and data distribution in networked storage systems", National Science Foundation, Oct. 2007 - Sept. 2010, sole PI.
- "Active Data Systems", National Science Foundation, Sept. 2006 -Aug. 2009, sole PI.
- NSF REU grant, co-PI, 2004-2007.
- Network Elements based on partial state, Intel Corp., gift, Feb. 2003.
- Texas A & M University, "High Availability Infrastructure Laboratory", TITF Award, Sept. 2002 - Dec. 2003, PI with R. Bettati, M. Vannucci and D. Swaroop.
- "Secure Networked Storage Systems", National Science Foundation, Research Instrumentation grant, Sept. 2002- Sept. 2005.

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- Texas Advanced Technology Program, "Network Architectures based on partial state", Jan. 2001 - Dec. 2002.
- "Fellowships for Computer Engineering", Department of Education, Aug. 2001- Aug. 2004, PI with R. Mercer and K. Watson.
- "QOS Enhancement with Partial state", National Science Foundation, June 2001-June 2004, sole PI.
- "Multiview Storage Systems", National Science Foundation, May 2001 - May 2004, sole PI.
- Equipment Donation, 3Ware Inc., Nov. 2000.
- "Scalable request-specific file service", National Science Foundation, Aug. 1999 - Aug. 2002, sole PI.
- Research gift, EMC Corp., 1998.
- "Scalable Multimedia Storage Server", Texas Higher Education Board, January 1996 - Dec. 1997, sole PI.
- "Scalable Storage Server for Multimedia and Scientific Applications", National Science Foundation, 1996-2000, sole PI.
- "Development of Novel Systems Software for Multimedia and High-performance computing", National Science Foundation, 1997-2000, PI along with R. Mercer, P. Cantrell, G. Choi and M. Lu.
- Equipment grant, Tandem Corporation, March 1997.
- Software donation, Microsoft Corporation, April 1997.

Teaching:

Redesigned the course ECEN 449 "Microprocessor Systems Design", Fall 2007.

Developed a new course ELEN 627 "Multimedia Systems and Networks".

Developed a freshman undergraduate course ENGR111 "Introduction to Electrical and Computer Engineering".

Developing a new graduate course on "Network systems security". Taught in Spring 2004, 2006.

Courses Taught: Undergradute Introduction to Electrical and Computer Engineering, Undergraduate Computer Architecture, Graduate Network Systems security, Graduate Computer Architecture, Graduate Computer Networks, Graduate Multimedia Storage and Delivery, Graduate Parallel Computer Systems, Graduate I/O and Memory Systems.

Student Advising:

- Chris Baldwin, Ph.D. candidate, Aug 2021-, Storage systems.
- Susav Shresta, Ph.D. candidate, Aug 2021-, Memory systems.
- Chandrahas Tirumalasetty, Ph.D. candidate, Aug 2019-present, Storage Systems.

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- Rishabh Singla, Ph.D. candidate, Aug 2017-Present, Network Security.
- Mian Qin, Ph.D., Aug 2016-Aug 2021, "Accelerating Storage Applications with Emerging Key Value Storage Devices", next at VmWare.
- Chih-Chieh Chou, Ph.D., Aug 2014-Jan. 2020, "Optimizing Emerging Memory Systems for Performance", next at Amazon.
- Zhiyuan Zheng, Ph.D., Aug. 2013 -Dec. 2017, "Protecting Cyber-Physical Systems With Special Emphasis On Building Automation Networks", next at Pinterest.
- Jaemin Jung, Postdoc, Oct. 2016-18, Storage systems, next at Samsung Research.
- Allen Webb, Ph.D. candidate, Jan. 2013-17, "Addressing Insider Threats From Smart Devices", next at Google.
- Viacheslav Fedorov, Ph.D., 2010 - 2016, "Memory Management for emerging memory technologies", later at NXP.
- Jongmin Gim, Postdoc, 2013-2015, Storage Systems Software, Later at Samsung Research Labs, California.
- Sangwhan Moon, Ph.D., 2010 - 2015, "Reliability of SSD Storage Systems", later at Riverbed Technology.
- Sheng Qui, Ph.D. 2013 "Integration of nonvolatile memory into storage hierarchy", later at Samsung Research Labs.
- Yong Oh Lee, Ph.D., May 2012. "Improving efficiency and effectiveness of multipath routing in computer networks", later at Samsung.
- Jagadeesh Dyaberi, Ph.D., Aug. 2011, "Networking and Storage support for on-demand video delivery", Purdue University, External thesis committee member.
- Sandeep Yadav, Ph.D., 2012, "Scalable techniques for anomaly detection", Dec. 2012, later at Dumballa.
- Xiaojin Wu, Ph.D., Flash and Disk Hybrid storage systems, Aug. 2011, later at Marvell Semiconductor.
- John Garrison, Ph.D. , "Umbrella File System: Managing heterogeneous storage devices File systems", Aug. 2009, later at DOD Labs, Tuscaloosa, Alabama.
- Sukwoo Kang, Ph.D., "Flexible space allocation and management in networked storage systems", May 2007, later at IBM Almaden Research Center.
- Sumitha Bhandarkar, Ph.D., "Congestion control algorithms for TCP in emerging networks", Aug. 2006, later at Motorola.
- Yong Liu, Ph.D., "Dynamic Routing protocols in multihomed networks", Dec. 2006, later at EMC Corp.
- Seong Soo Kim, Ph.D., "Real-time analysis of aggregate network traffic", May 2005, later at Samsung, Seoul, Korea.

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- Zhili Zhao, Ph.D., May 2004, "Estimation and control of nonresponsive traffic", later at Intel.
- Xiaonan Ma, Ph.D., Aug. 2003, "Augmenting functionality at storage systems", later at IBM Almaden Research Center, San Jose.
- Ravi Wijayaratne, Ph.D., Dec. 2000, "PRISM: A file server architecture for providing integrated services", later at Quantum, San Jose.
- Ikjun Yeom, Ph.D., Dec. 2000, "Bandwidth assurance in differentiated services networks", later a faculty member at KAIST, South Korea.
- Daksh Vasistha, M.S., 2015-17, " Detecting Anomalies in Controller Area Network for Automobiles", next at Facebook
- Ayush Ruia, M.S., 2015, "Virtualization of nonvolatile memory", later at Microsoft.
- Bolun Huang, M.S. 2014, "Sentiment based classification of tweeters and university programs", later at Microsoft.
- Shyam Sambasivan, M.S. "Enhancements to SQLite library to improve performance on mobile platforms", Aug. 2013, later at Cisco.
- Ankit Singh, M.S., "Multipath Probabilistic Early Response TCP", Aug. 2012, later at Amazon.
- Cindy Cao, M.S., "SCMFS Performance Enhancement and Implementation on Mobile Platform", Aug. 2012, later at Microsoft.
- Amit Anand, M.S., "Proactive spammer detection on Twitter", Aug. 2012, later at Amazon.
- Bin Qian, M.S., Aug. 2011, "Evaluation of Probabilistic Early Response TCP (PERT) for video streaming and extension with ACK coalescing", later at Amazon Data Services.
- Ashwath Reddy, M.S., Aug. 2010, Detecting networks employing algorithmically generated names, later at Microsoft.
- Prajjwal Devakota, M.S. Aug. 2010, Performance of Quantized Congestion Notification in TCP Incast in Data Centers, later at Bloomberg.
- Chaitanya Tadi, M.S., May 2009, IP Prefix Hijack Prevention Service, later at Intel.
- Marcus Dunn, M.S., May 2009, A new I/O scheduler for Solid State Devices, later at Cisco.
- Kiran Kotla, M.S., "Adapting the delay-based protocol PERT to heterogeneous environments", Aug. 2008, later at Cisco.
- Camelia Al-Najjar, M.S., August 2005, thesis on "An approach for improving performance of aggregate voice over IP traffic", pursuing Ph.D. at Case Western University.
- Saurabh Jain, M.S., May 2005, thesis on "LTCP-RC: RTT compensation technique to scale highspeed protocols to high RTT links", later at Cisco.
- Sridhar Vellanki, M.S., Feb. 2003, thesis on "Improving service availability through alternate routing", later at Microsoft.

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- Sadry, Nauzad, M.S., Dec. 2002, thesis on "Evaluation of Delayed Congestion Response protocols for tolerating channel errors in wireless networks", later at Netezza.
- Achanta, Phani, M.S., Dec. 2002, thesis on "Design and Evaluation of Partial State Routers", later at IBM.
- Smitha, M.S. student, May 2001, thesis on "An active queue management scheme to contain high bandwidth flows at a congested router", later at Intel India.
- Sumitha Bhandarkar, M.S., August 2001, thesis on "Delayed Congestion Response Protocols", Ph.D. at TAMU.
- Aman Garg, M.S., August 2001, thesis on "Mitigating Denial of Service using QOS regulation", later at Tipping Point Technologies, Austin.
- Sai Gopalakrishnan, M.S., May 2000, later at Cisco, thesis on "TRIO: Active resource management in differentiated services networks".
- Qian Ren, M.S., May 2000, later at Lucent, thesis on "MPEG-aware disk storage system".
- Marcus Grande, M.S., Dec. 1999, later at IBM, thesis on "Multiported Storage Devices".
- Adnan Khaleel, M.S., Aug. 1999, later at Motorola, thesis on "Request and data distribution on a clustered server".
- Deying Tong, M.S., May 1999, later at Cisco, thesis on "Partial state based approaches to QOS enhancement".
- Sumit Gupta, M.S., Aug. 1998, later at Sun Labs, thesis on "IPRP: A client-oriented IP redirection mechanism and its applications".
- Ashwin Madhwaraj, M.S., May 1998, later at Cisco, thesis on "Adaptive video transport over networks".
- Gang Ma, M.S., May 1998, later at EMC Corp., thesis on "Evaluation of storage systems based on network attached storage".
- Mike Nichols, M.S., May 1998, later at UT Law School, thesis on "Personal informal retrieval agent".
- Ikjun Yeom, M.S., May 1998, later a faculty member at KAIST, Korea, thesis on "ENDE: An End-to-end Network Delay Emulator".

Service:

- Member, University IT Research Committee, 2018
- Chair, Turbo Lab Director Search Committee, 2017
- Chair, College Cybersecurity Search Committee, 2016-Present
- Member, University Chief Communications Officer Hiring Committee, 2015-16
- Member, University level Assoc. Former Students Awards Committee, 2016

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- Member, TAMUQ FASC Committee, 2013
- Chair, Department Growth Committee, 2013
- Chair, College Taskforce on National Security, 2013
- Member, College Research Strategy Subcommittee, 2012
- Member, Computer Science and Engineering Head Search Committee, 2010-11, 2013-14
- Member College Awards Committee 2006-2008. 2010-2012
- Actively participating in improving undergraduate research experience. Co-PI of NSF REU grant. Advised 7 undergraduate students in the last few years
- Member, Computer Engineering Curriculum Committee, 2003-2012. Led the restructuring of Undergraduate curriculum in Computer Engineering
- Member, Department Tenure & Promotion Committee, 2004-2006, 2010-2012
- Member, Electrical and Computer Engineering Department Head Search Committee, 2004
- Member, Department Advisory committee 2003-2004
- Chair and Member, department Awards committee 2004-2006
- Member, Department Awards committee, 1997-2003, 2008-2009
- Member, Department Distinguished Speakers committee, 1996-1999, 2006-2008
- Chair and Member, Department Distinguished Speakers committee, 2010-present
- Member, Department undergraduate studies committee, 1997-2000
- Member, Department web site design committee, 2000-2004
- Group leader, Computer Engineering, 2005-2014

Administrative Experience:

Group Leader, Computer Engineering, 2005-2014:

- Led evaluation, development and rearchitecting the Computer Engineering program, a joint program across two departments of Electrical and Computer Engineering and Computer Science Engineering.
- Led the hiring of about 10 Computer Engineering faculty.
- Led the development of ENGR 111 Freshman Introduction of Electrical and Computer Engineering, primarily to improve retention in Electrical and Computer Engineering programs. Increased retention rates from 45% to about 80%.
- Led the development of several other courses ECEN 449 Microprocessor Systems Design, ECEN 627 Multimedia Systems and Networks, ECEN689 Computer Networks Security.
- Rebuilt several existing courses including ECEN 350 Computer Architecture and ECEN 676 Advanced Computer Architecture, ECEN 602 Computer Networks.

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- Contributed to the national ranking of both undergraduate and graduate Computer Engineering programs to top 20 programs in the country.

TEES Assistant Agency Director for National and Global Initiatives, 2014- 2016:

- Developed and Established a TEES office in Yukatan, Mexico.
- Nurtured relationships in Brazil, France and India. The France relationship resulted in a collaborative center with ENSAM.
- Established realtionships with Kuwait Oil Company which resulted in an on-going discussion on a $15 million research contract.
- Developed a strategy to engage with National Labs and Federal Agencies.

Associate Dean for Research, College of Engineering and TEES Associate Agency Director for Centers and Strategic Initiatives, 2016-2021:

- Established strategic focus on several emerging areas of research including Autonomy, Synthetic Biology, Soft Matter, Cyber Security and Quantum Computing.
- Developed a strategy for supporting large multi-PI proposals and increased large proposal funding from 5-6 per year to about 25 per year.
- Increased TEES Research funding from about $110 million/year to $210 million/year from 2016-20.
- Increased Federal funding percentage from 38% to 68% of total TEES funding.
- Nurtured relationships with Army Research Lab (ARL) and facilitated the establishment of ARL-south relationship with A & M. Direct impact: ARL Cooperative Agreements in Synthetic Biology, Electric Power, Materials and Manufacturing, Autonomy and Cybersecurity with about 15 ARL people stationed at Texas A& M.
- Supported establishment of $65 million ARL/Army Futures Command (AFC) Cooperative agreement on Hypersonics, Autonomous vehicles and Networks.
- Contributed to $26 million Distributed Autonomy related project funded by Army Research Lab.
- Nurtured and furthered collaborations with Air Force Research Lab, resulting in the establishment of AFRL fellowships at A & M. Direct Impact: AFRL $4 million Minority Leaders Scholarships in Material Discovery and several projects with sensors, human performance and information directorates.
- Established relationships with Army Engineering and Research Development Center (ERDC). Resulted in $3 million contract. Exploring further options for joint projects.
- Establishing close collaborative ties with DOE/DOD National Labs. Resulted in Master Research Agreements and joint projects with several labs including Idaho National Lab(INL), Lawrence Livermore National Lab(LLNL), Pacific Northwest National Lab (PNNL) and others.

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- Contributed to successful $40 million proposal for "Offshore Energy Safety Center 2.0" proposal to Department of Interior and Department of Energy.
- Started and organized "TEES Tech. Talk" series to facilitate hosting Labs and Agency researchers and program managers.
- Organized National Labs Day to facilitate interactions of graduate students with National Labs.
- Championed "Remote Ph.D. program for national labs".
- Established "Research Impact Awards" to facilitate a discussion and recognition of impactful research within the College.
- Established External Awards Support office to promote faculty for external professional awards.
- Supported young faculty applications to NSF, DOD/DOE/DARPA CAREER and Young Investigator awards. Increased NSF CAREER awards from 2/year to 8/year.
- Established NSA Masters Program.
- Expanded a weekly "Research Opportunities" bulletin to cover broader research opportunities.
- Interacted with the Research Deans of other colleges and supported inter-college collaborations.
- Established procedures and metrics for evaluating centers within college and reorganized centers after a thorough review of the existing centers. Managed about 30 Centers and Institutes.
- Established support to help graduate student applications for NSF and NDSEG Fellowships.

[1]Reddy's Students.

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UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/600,746	06/19/2003	Rikard M. Kjellberg	3399P103	5994

26529 7590 03/16/2007

BLAKELY SOKOLOFF TAYLOR & ZAFMAN/PDC
12400 WILSHIRE BOULEVARD
SEVENTH FLOOR
LOS ANGELES, CA 90025

EXAMINER	
SMITH, CREIGHTON H	
ART UNIT	PAPER NUMBER
2614	

DATE MAILED: 03/16/2007

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 790 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 790 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Ex. 1003, Page 1 of 72
PTOL-85 (Rev. 07/06) Approved for use through 04/30/2007.

Notice of Allowability	Application No.	Applicant(s)	
	10/600,746	KJELLBERG ET AL.	
	Examiner	Art Unit	
	Creighton H. Smith	2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *Applicant's amendment filed on 17 JAN '07*.

2. ☒ The allowed claim(s) is/are *5-18*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

Creighton H Smith
Primary Examiner
Art Unit: 2614

REASONS FOR ALLOWANCE

The following is an examiner's statement of reasons for allowance: The prior art fails to disclose a method and system of accessing content on a wireless communication device, that specifically includes ***receiving and storing a plurality of different implementations of the items of content.*** Neither does the prior art teach maintaining a catalog describing the items of content. No obvious combination of references found would have taught one of ordinary skill in the art to make and use applicant's method and system as claimed.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Creighton H. Smith whose telephone number is 571/272-7546. The examiner can normally be reached on M-F, alternate Fridays off.

Creighton H Smith
Primary Examiner
Art Unit 2614

***

Issue Classification	Application/Control No.	Applicant(s)/Patent under Reexamination
	10/600,746	KJELLBERG ET AL.
	Examiner	Art Unit
	Creighton H. Smith	2614

ISSUE CLASSIFICATION

ORIGINAL CLASS	ORIGINAL SUBCLASS	CROSS REFERENCE(S) CLASS	CROSS REFERENCE(S) SUBCLASS (ONE SUBCLASS PER BLOCK)						
455	419	455	418	414.1					

INTERNATIONAL CLASSIFICATION				
H	04	B	3/44	
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			/	
			/	

(Assistant Examiner) (Date)

(Legal Instruments Examiner) 2/20/07 (Date)

CREIGHTON SMITH
PRIMARY EXAMINER
(Primary Examiner) (Date)

Total Claims Allowed: 14

O.G. Print Claim(s)	O.G. Print Fig.
1	1

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
	1		31		61		91		121		151		181
	2		32		62		92		122		152		182
	3		33		63		93		123		153		183
	4		34		64		94		124		154		184
1	5		35		65		95		125		155		185
2	6		36		66		96		126		156		186
3	7		37		67		97		127		157		187
4	8		38		68		98		128		158		188
5	9		39		69		99		129		159		189
6	10		40		70		100		130		160		190
7	11		41		71		101		131		161		191
8	12		42		72		102		132		162		192
9	13		43		73		103		133		163		193
10	14		44		74		104		134		164		194
11	15		45		75		105		135		165		195
12	16		46		76		106		136		166		196
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	28		58		88		118		148		178		208
	29		59		89		119		149		179		209
	30		60		90		120		150		180		210

Index of Claims

Application/Control No.	Applicant(s)/Patent under Reexamination
10/600,746	KJELLBERG ET AL.
Examiner	**Art Unit**
Creighton H. Smith	2614

√	Rejected	–	(Through numeral) Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

Claim		Date								
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Attorney Docket No.: 3399P103 Patent

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application for:

Rikard M. Kjellberg et al.

Application No.: 10/600,746

Filing Date: 6/19/2003

For: Device Capability Based Discovery, Packaging and Provisioning of Content for Wireless Mobile Devices

Examiner: Creighton H. Smith

Group Art Unit: 2614

Confirmation no.: 5994

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail with sufficient postage in an envelope addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on

January 17, 2007
(Date of Deposit)

Andreas Radke
(Printed name)

Andreas Radke 1-17-07
(Signature) (Date)

AMENDMENT AND RESPONSE TO OFFICE ACTION

Dear Sir:

In response to the Office Action mailed on 10/20/2006, please enter the following amendment and consider the remarks below:

01/23/2007 CNEGA1 00000053 10600746
01 FC:1201 200.00 OP

OIPE JAN 22 2006 PATENT & TRADEMARK OFFICE

FEE TRANSMITTAL FOR FY 2006

Effective on 10/01/2005. Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).

TOTAL AMOUNT OF PAYMENT ($) 200

Complete if Known:

Application No.	10/600,746
Filing Date	June 19, 2003
First Named Inventor	Rikard M. Kjellberg
Examiner Name	Creighton H. Smith
Art Unit	2614
Attorney Docket No.	3399P109

_____ Applicant claims small entity status. See 37 CFR 1.27.

METHOD OF PAYMENT (check all that apply)

__X__ Check _____ Credit Card _____ Money Order _____ None _____ Other (please identify)

_____ Deposit Account

Deposit Account Number : 02-2666

Deposit Account Name: _____

__X__ The Director is Authorized to do the following with respect to the above-identified Deposit Account:

____ Charge fee(s) indicated below.

__X__ Charge any additional fee(s) or underpayment of fee(s) during the pendency of this application.

____ Charge fee(s) indicated below except for the filing fee

__X__ Credit any overpayments.

__X__ Any concurrent or future reply that requires a petition for extension of time should be treated as incorporating an appropriate petition for extension of time and all required fees should be charged.

Warning: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

FEE CALCULATION

1. BASIC FILING, SEARCH, AND EXAMINATION FEES

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description		Fees Paid ($)
1011	300	2011	150	Utility application filing fee	1,000/500	_____
1111	500	2111	250	Utility search fee		_____
1311	200	2311	100	Utility examination fee		_____
1012	200	2012	100	Design application filing fee	430/215	_____
1112	100	2112	50	Design search fee		_____
1312	130	2312	65	Design examination fee		_____
1013	200	2013	100	Plant filing fee	660/330	_____
1113	300	2113	150	Plant search fee		_____
1313	160	2313	80	Plant examination fee		_____
1004	300	2004	150	Reissue filing fee	1,400/700	_____
1114	500	2114	250	Reissue search fee		_____
1314	600	2314	300	Reissue examination fee		_____
1005	200	2005	100	Provisional application filing fee		_____

SUBTOTAL (1) $_____

Based on Form PTO/SB/17 (01-06) as modified by BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP on 01/26/06

2. EXCESS CLAIM FEES

			Extra Claims		Fee from below		Fees Paid ($)
Total Claims	14	**– 20 or HP =**	0	X	50	=	0
HP = highest number of total claims paid for, if greater than 20							
Independent Claims	4	**– 3 or HP =**	1	X	200	=	200
HP = highest number of independent claims paid for, if greater than 3							
Multiple Dependent Claims						=	

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description
1202	50	2202	25	Each claim over 20
1201	200	2201	100	Each independent claim over 3
1203	360	2203	180	Multiple dependent claims, if not paid
1204	200	2204	100	Reissue: each claim over 20 and more than in the original patent
1205	50	2205	25	Reissue: each independent claim more than in the original patent

SUBTOTAL (2) $ 200

3. APPLICATION SIZE FEE

If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

Total Sheets		Extra Sheets		Number of each add'l 50 or fraction thereof		Fee from below		Fees paid ($)
	– 100 =		/ 50 =	(round up to whole number)	X			

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description: **Application size fee for each additional group of 50 sheets beyond initial 100 sheets** (count spec & drawings except sequences & program listings):
1081	250	2081	125	Utility
1082	250	2082	125	Design
1083	250	2083	125	Plant
1084	250	2084	125	Reissue

SUBTOTAL (3) $

Based on Form PTO/SB/17 (01-06) as modified by BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP on 01/26/06

FEE CALCULATION (continued)

4. OTHER FEE(S)

Non-English Specification, $130 fee (no small entity discount) — Fees Paid ($) _____

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fees Paid ($)
1051	130	2051	65	Surcharge - late filing fee or oath	
1052	50	2052	25	Surcharge - late provisional filing fee or cover sheet	
1053	130	1053	130	Non-English specification	
1812	2,520	1812	2,520	For filing a request for ex parte reexamination	
1813	8,800	1813	8,800	Request for inter parties reexamination	
1804	920*	1804	920*	Requesting publication of SIR prior to Examiner action	
1805	1,840*	1805	1,840*	Requesting publication of SIR after Examiner action	
1251	120	2251	60	Extension for reply within first month	
1252	450	2252	225	Extension for reply within second month	
1253	1,020	2253	510	Extension for reply within third month	
1254	1,590	2254	795	Extension for reply within fourth month	
1255	2,160	2255	1,080	Extension for reply within fifth month	
1401	500	2401	250	Notice of Appeal	
1402	500	2402	250	Filing a brief in support of an appeal	
1403	1,000	2403	500	Request for oral hearing	
1451	1,510	1451	1,510	Petition to institute a public use proceeding	
1452	500	2452	250	Petition to revive – unavoidable	
1453	1,500	2453	750	Petition to revive - unintentional	
1501	1,400	2501	700	Utility issue fee (or reissue)	
1502	800	2502	400	Design issue fee	
1503	1100	2503	550	Plant issue fee	
1462	400	1462	400	Petitions to the Commissioner (CFR 1.17(f) Group I)	
1463	200	1463	200	Petitions to the Commissioner (CFR 1.17(g) Group II)	
1464	130	1464	130	Petitions to the Commissioner (CFR 1.17(h) Group III)	
1807	50	1807	50	Processing fee under 37 CFR 1.17(q)	
1806	180	1806	180	Submission of Information Disclosure Stmt	
8021	40	8021	40	Recording each patent assignment per property (times number of properties)	
1809	790	2809	395	For filing a submission after final rejection (see 37 CFR 1.129(a))	
1814	130	2814	65	Statutory Disclaimer	
1810	790	2810	395	For each additional invention to be examined (see 37 CFR 1.129(b))	
1801	790	2801	395	Request for Continued Examination (RCE)	
1802	900	1802	900	Request for expedited examination of a design application	
1504	300	1504	300	Publication fee for early, voluntary, or normal pub.	
1505	300	1505	300	Publication fee for republication	
1803	130	1803	130	Request for voluntary publication or republication	
1808	130	1808	130	Processing fee under 37 CFR 1.17(i) (except provisionals)	
1454	1,370	1454	1,370	Acceptance of unintentionally delayed claim for priority	

Other fee (specify) _____ _____

Other fee (specify) _____ _____

SUBTOTAL (4) $_____

*Reduced by Basic Filing Fee Paid

SUBMITTED BY:

Typed or Printed Name: Jordan M. Becker

Signature: _____ Date: January 17, 2007

Reg. Number: 39,602 Telephone Number: 408-720-8300

Send to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450

Based on Form PTO/SB/17 (01-06) as modified by BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP on 01/26/06

IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the present application:

1-4. (Canceled)

5. (Original) A method of providing access to content for use on wireless communication devices, the method comprising:

receiving and storing a plurality of items of content to be made available for use in wireless communication devices used by a plurality of wireless services subscribers, including receiving a plurality of different implementations of at least one of the items of content, where each implementation of any given item of content corresponds to a different set of device capabilities; and

maintaining a product catalog containing a description of the items of content, the product catalog including, in association with each item of content, a reference to each implementation of said item of content.

6. (Original) A method of providing access to digital content for use on wireless communication devices, the method comprising:

receiving and storing in a server system a plurality of items of digital content to be made available for use in wireless communication devices used by a plurality of wireless services subscribers, including receiving and storing a plurality of different implementations of at least one of the items of digital content, where each implementation of any given item of digital content corresponds to a different set of device capabilities;

operating the server system to maintain a product catalog containing a description of the items of digital content, wherein the product catalog includes, in association with each item of digital content, a reference to each implementation of said item of digital content;

receiving a request from a wireless device used by one of the subscribers;

in response to the request, selecting a portion of the product catalog to be presented to the subscriber, based on device capabilities of the wireless device used by the subscriber; and

presenting the selected portion of the product catalog to the subscriber via a wireless network, such that the selected portion, as presented to the subscriber, provides only a single description of each item of digital content in said portion, regardless of the number of implementations of each said item.

7. (Original) A method as recited in claim 6, wherein said selecting a portion of the product catalog comprises:

in response to the request, determining the identity of the wireless device used by the subscriber, wherein each implementation of the plurality of items of digital content has been previously associated in the server system with at least one device identity, according to corresponding device capabilities supported by the implementation; and

selecting the portion of the product catalog to be presented to the subscriber based on the identity of the wireless device used by the subscriber.

8. (Original) A method as recited in claim 6, further comprising:

receiving from the subscriber a request for one of the items of digital content in said portion of the product catalog;

selecting an implementation of the requested item of digital content, based on device capabilities of the wireless device used by the subscriber; and

downloading the selected implementation of the item of digital content to the wireless device used by the subscriber.

9. (Currently amended) A method as recited in claim ~~1~~8, further comprising associating each of the items of digital content in the server system with a plurality of different provisioning models, each of the provisioning models corresponding to a different set of device capabilities, each provisioning model including a provisioning protocol and a corresponding set of provisioning attributes and descriptors for provisioning digital content in wireless devices.

10. (Original) A method as recited in claim 9, further comprising:

receiving from the subscriber a request for one of the items of digital content in said portion of the product catalog;

identifying device capabilities of the wireless device used by the subscriber;

selecting one of a plurality of provisioning models associated with the requested item in the server system, based on the device capabilities of the wireless device used by the subscriber;

packaging the requested item according to the selected provisioning model; and

provisioning the requested item in the wireless device used by the subscriber according to the selected provisioning model.

11. (Original) A method as recited in claim 10, wherein:

said packaging the requested item comprises creating a provisioning descriptor for the requested item according to the selected provisioning model, and associating the provisioning descriptor with the requested item; and

said provisioning the requested item in the wireless device comprises sending the packaged requested item to the wireless device used by the subscriber according to a provisioning protocol associated with the selected provisioning model.

12. (New) A system comprising:

a network interface through which to communicate over a communication network; and

a download manager to

receive and store a plurality of items of content to be made available for use in wireless communication devices used by a plurality of wireless telecommunications subscribers, including receiving a plurality of different implementations of at least one of the items of content, where each implementation of any given item of content corresponds to a different set of device capabilities; and

maintain a product catalog containing a description of the items of content, the product catalog including, in association with each item of content, a reference to each implementation of said item of content.

13. (New) A system comprising:

a processor; and

a storage facility accessible to the processor and containing code which, when executed by the processor, causes the processing system to

receive and store a plurality of items of digital content to be made available for use in wireless communication devices used by a plurality of wireless telecommunications subscribers, including receiving and storing a plurality of different implementations of at least one of the items of digital content, where each implementation of any given item of digital content corresponds to a different set of device capabilities;

maintain a product catalog containing a description of the items of digital content, wherein the product catalog includes, in association with each item of digital content, a reference to each implementation of said item of digital content;

receive a request from a wireless device used by one of the subscribers;

in response to the request, select a portion of the product catalog to be presented to the subscriber, based on device capabilities of the wireless device used by the subscriber; and

cause the selected portion of the product catalog to be presented to the subscriber via a wireless telecommunications network, such that the selected portion, as presented to the subscriber, provides only a single description of each item of digital content in said portion, regardless of the number of implementations of each said item.

14. (New) A system as recited in claim 13, wherein selection of said portion of the product catalog comprises:

in response to the request, determining the identity of the wireless device used by the subscriber, wherein each implementation of the plurality of items of digital content has been previously associated in the server system with at least one device identity, according to corresponding device capabilities supported by the implementation; and

selecting the portion of the product catalog to be presented to the subscriber based on the identity of the wireless device used by the subscriber.

15. (New) A system as recited in claim 14, wherein said storage facility further contains code which, when executed by the processor, causes the processing system to:

receive from the subscriber a request for one of the items of digital content in said portion of the product catalog;

select an implementation of the requested item of digital content, based on device capabilities of the wireless device used by the subscriber; and

download the selected implementation of the item of digital content to the wireless device used by the subscriber.

16. (New) A system as recited in claim 15, wherein said storage facility further contains code which, when executed by the processor, causes the processing system to:

associate each of the items of digital content in the server system with a plurality of different provisioning models, each of the provisioning models corresponding to a different set of device capabilities, each of the provisioning models including a provisioning protocol and a corresponding set of provisioning attributes and descriptors for provisioning digital content in wireless devices.

17. (New) A system as recited in claim 16, wherein said storage facility further contains code which, when executed by the processor, causes the processing system to:

receive from the subscriber a request for one of the items of digital content in said portion of the product catalog;

identify device capabilities of the wireless device used by the subscriber;

select one of a plurality of provisioning models associated with the requested item in the server system, based on the device capabilities of the wireless device used by the subscriber;

package the requested item according to the selected provisioning model; and

provision the requested item in the wireless device used by the subscriber according to the selected provisioning model.

18. (New) A system as recited in claim 17, wherein packaging the requested item comprises creating a provisioning descriptor for the requested item according to the

selected provisioning model, and associating the provisioning descriptor with the requested item; and

wherein provisioning the requested item in the wireless device comprises sending the packaged requested item to the wireless device used by the subscriber according to a provisioning protocol associated with the selected provisioning model.

REMARKS

Reconsideration of the present application is respectfully requested. Claims 1-4 have been canceled. Claim 9 has been amended. Claims 12-18 are newly added. No new matter has been added.

Claims 5-8 stand allowed. Claims 10 and 11 were rejected as being dependent on a rejected base claim but were otherwise deemed to recite allowable subject matter. Claims 1-4, and 9 were rejected under 35 U.S.C. § 102(e) based on U.S. Patent no. 6,912,385 of Namba et al. or U.S. Patent Application Publication no. 2003/0060188 of Gidron.

Claims 1-4 have been canceled, thus rendering the rejection of those claims moot. Claim 9 has been amended to correct its dependency to depend on claim 8.

Regarding the new claims, independent claims 12 and 13 include limitations substantially similar to those in claims 5 and 6, respectfully. Therefore, Applicants believe that claims 12 and 13 (and all claims that depend on them) are patentable for at least reasons similar to claims 5 and 6.

Therefore, Applicants believe that all pending claims are in condition for allowance.

Dependent Claims

In view of the above remarks, a specific discussion of the dependent claims is considered to be unnecessary. Therefore, Applicants' silence regarding any dependent claim is not to be interpreted as agreement with, or acquiescence to, the rejection of such claim or as waiving any argument regarding that claim.

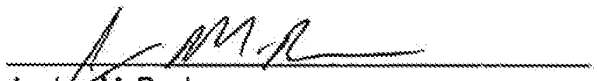
Conclusion

For the foregoing reasons, the present application is believed to be in condition for allowance, and such action is earnestly requested.

If there are any additional charges/credits, please charge/credit our deposit account no. 02-2666.

Respectfully submitted,
BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP

Dated: 1/17/2007



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OIPE JAN 17 JAN 22 2007 PATENT & TRADEMARK OFFICE

AMENDMENT TRANSMITTAL

PATENT

Application No.: 10/600,746
Filing Date: June 19, 2003
First Named Inventor: Rikard M. Kiellberg
Examiner's Name: Creighton H. Smith
Art Unit: 2614
Attorney Docket No.: 3399P103

____ An Amendment After Final Action (37 CFR 1.116) is attached and applicant(s) request expedited action.
__X__ Charge any fee not covered by any check submitted to Deposit Account No. 02-2666.
__X__ Applicant(s) hereby request and authorize the U.S. Patent and Trademark Office to (1) treat any concurrent or future reply that requires a petition for extension of time as incorporating a petition for extension of time for the appropriate length of time and (2) charge all required fees, including extension of time fees and fees under 37 CFR 1.16 and 1.17, for any concurrent or future reply to Deposit Account No. 02-2666.
____ Applicant(s) claim small entity status (37 CFR 1.27).

ATTACHMENTS

____ Preliminary Amendment
__X__ Amendment/Response with respect to Office Action (9 pages)
____ Amendment/Response After Final Action (37 CFR 1.116) (reminder: consider filing a Notice of Appeal)
____ Notice of Appeal
____ RCE (Request for Continued Examination)
____ Supplemental Declaration
____ Terminal Disclaimer (reminder: if executed by an attorney, the attorney must be properly of record)
____ Information Disclosure Statement (IDS)
____ Copies of IDS citations
____ Petition for Extension of Time
__X__ Fee Transmittal Document (that includes a fee calculation based on the type and number of claims; in duplicate)
____ Cross-Reference to Related Application(s)
____ Certified Copy of Priority Document
____ Other: _____
____ Other: _____
__X__ Check(s)
__X__ Postcard (Return Receipt)

SUBMITTED BY:

BLAKELY SOKOLOFF TAYLOR & ZAFMAN LLP
TYPED OR PRINTED NAME: Jordan M. Becker
SIGNATURE: _____
REG. NO.: 39,602
DATE: January 17, 2007
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Los Angeles, California 90025
TELEPHONE NO.: (408) 720-8300

CERTIFICATE OF MAILING BY FIRST CLASS MAIL (if applicable)

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail with sufficient postage in an envelope addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria Virginia 22313-1450
on January 17, 2007
Date of Deposit
Andrea Radke
Name of Person Mailing Correspondence
Andrea Radke
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(10/14/03)

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10/600746

Application or Docket Number

3399P103

PATENT APPLICATION FEE DETERMINATION RECORD

Effective January 1, 2003

CLAIMS AS FILED - PART I

	(Column 1)	(Column 2)
TOTAL CLAIMS	11	
FOR	NUMBER FILED	NUMBER EXTRA
TOTAL CHARGEABLE CLAIMS	11 minus 20=	* 0
INDEPENDENT CLAIMS	3 minus 3 =	* 0
MULTIPLE DEPENDENT CLAIM PRESENT		☐

* If the difference in column 1 is less than zero, enter "0" in column 2

SMALL ENTITY TYPE ☐		OR	OTHER THAN SMALL ENTITY	
RATE	FEE		RATE	FEE
BASIC FEE	375.00	OR	BASIC FEE	750.00
X$ 9=		OR	X$18=	0
X42=		OR	X84=	0
+140=		OR	+280=	0
TOTAL		OR	TOTAL	750

2/17/09

CLAIMS AS AMENDED - PART II

AMENDMENT A

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	* 14	Minus	** 20	=
Independent	* 2	Minus	*** 3	= 1
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				☐

SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
RATE	ADDITIONAL FEE		RATE	ADDITIONAL FEE
X$ 9=		OR	X$18=	
X42=		OR	X84= 200	200
+140=		OR	+280=	
TOTAL ADDT. FEE		OR	TOTAL ADDT. FEE	200

AMENDMENT B

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	*	Minus	**	=
Independent	*	Minus	***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				☐

RATE	ADDITIONAL FEE		RATE	ADDITIONAL FEE
X$ 9=		OR	X$18=	
X42=		OR	X84=	
+140=		OR	+280=	
TOTAL ADDT. FEE		OR	TOTAL ADDT. FEE	

AMENDMENT C

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	*	Minus	**	=
Independent	*	Minus	***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				☐

RATE	ADDITIONAL FEE		RATE	ADDITIONAL FEE
X$ 9=		OR	X$18=	
X42=		OR	X84=	
+140=		OR	+280=	
TOTAL ADDT. FEE		OR	TOTAL ADDT. FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20."
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3."
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/600,746	06/19/2003	Rikard M. Kjellberg	3399P103	5994

26529 7590 10/20/2006

BLAKELY SOKOLOFF TAYLOR & ZAFMAN/PDC
12400 WILSHIRE BOULEVARD
SEVENTH FLOOR
LOS ANGELES, CA 90025

EXAMINER	
SMITH, CREIGHTON H	

ART UNIT	PAPER NUMBER
2614	

DATE MAILED: 10/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/600,746	KJELLBERG ET AL.	
	Examiner	Art Unit	
	Creighton H. Smith	2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *5-8* is/are allowed.

6)☒ Claim(s) *1-4 and 9* is/are rejected.

7)☒ Claim(s) *10 and 11* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date ~~7.17.06~~, 4.27.06, 10.14.05, 8.12.05, 11.22.04
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-4, 9 are rejected under 35 U.S.C. 102(e) as being anticipated by Namba et al '385 or Gidron et al.

Namba et al disclose the downloading of content data to a wireless device, col. 4, lines 1-5; a server system (50), col. 5, lines 54-55, that store various data contents and profiles of such data in its storage. Namba et al disclose that plural content items, i.e., various data such as video, sound, and graphics, col. 10, lines 35-48, are the downloadable data items.

Namba et al disclose in cols. 5-6, lines 66-67 & 1-10, that they use an evaluation function to determine which communication system, A or B, to use that corresponds/ suitable for the contents of the data. Some of the different types of communications systems contemplated by Namba et al are PDC, CDMA, W-CDMA, PHS, LAN, or the like, with the communication system (PDC, CDMA, W-CDMA, PHS, etc.) that corresponds to the contents of the data. In col. 9, lines 21 et seq, Namba et al disclose a request signal for data from the mobile terminal 10 to a provider 400. That request signal includes a mobile profile (various information including moving speed, *communication rate*, terminal environment, user environment, and the like. The provide

400 will then access site 300, in response to a user's request signal to check to check if the site 300 has the contents which are requested by the user. Namba et al next discloses that a profile M1 is divided into 3 profiles: M2a, M2b, M2c. Each one of the profiles M2a-M2c contains various information including the specification of division of the data, specification of the data path (*specification of the communication system)*, data wait time, delivery time and the like.

Therefore, with Namba's disclosure in col. 6 of the different communications systems (PDC, CDMA, W-CDMA, PHS, LAN, etc.), and the disclosure in col. 9 of each of the profiles M2a-M2c specifying a certain communication system, like those systems disclosed in col. 6, it is readily apparent that Namba et al has different provisioning models that correspond to the different terminal's capabilities.

See ¶ 0042 of Gidron et al.

Claims 10 and 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 5-8 are allowed.

Any inquiry concerning this communication should be directed to Creighton H. Smith at telephone number 571/272-7546.

16 OCT '06

Creighton H Smith
Primary Examiner
Art Unit 2614

Notice of References Cited	Application/Control No. 10/600,746	Applicant(s)/Patent Under Reexamination KJELLBERG ET AL.	
	Examiner Creighton H. Smith	Art Unit 2614	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-6,912,385	06-2005	Namba et al.	455/419
*	B	US-2003/0060188	03-2003	Gidron et al.	455/408
*	C	US-2003/0027581	02-2003	Jokinen et al.	455/456
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

UNITED STATES PATENT APPLICATION

FOR

Device Capability Based Discovery, Packaging and Provisioning of Content for Wireless Mobile Devices

INVENTORS:

Rikard M. Kjellberg
Sheng Liang
Tomas G. Lund
William Chan
Ramakrishna Chinta
Xinbi Chen

Prepared by:

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP
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(408) 720-8300

Attorney's Docket No. 3399P103

"Express Mail" mailing label number EV336585205US
Date of Deposit June 19, 2003
I hereby certify that this paper or fee is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to Mail Stop Patent Application, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450

Julie Arango
(Typed or printed name of person mailing paper or fee)

Julie Arango 6/19/03
(Signature of person mailing paper or fee)

Device Capability Based Discovery, Packaging and Provisioning of Content for Wireless Mobile Devices

[0001] This application claims the benefit of U.S provisional patent applications nos.: 60/393,024; 60/392,383; 60/393,041; and 60/392,999, each of which was filed on June 28, 2002, and each of which is incorporated herein by reference.

FIELD OF THE INVENTION

[0002] At least one embodiment of the present invention pertains to systems and methods for providing digital content to wireless services subscribers, and more particularly, to facilitating management and delivery of digital content from multiple content suppliers to multiple wireless services subscribers in multiple domains.

BACKGROUND

[0003] Personal mobile communication/computing devices, such as cellular telephones, personal digital assistants (PDAs) and two-way pagers, have become commonplace in many countries. These devices are referred to collectively herein as "mobile devices" or "wireless devices". The current state-of-the-art of mobile devices has advanced far beyond that of their predecessors. For example, early cellular telephones were used analog signals to communicate over wireless telecommunications networks (or simply "wireless networks") and were nothing more than mobile telephones. Today's cellular telephones typically are all digital and provide many other functions in addition to telephony capability. For example, many of the latest generation of mobile telephones (and other mobile devices) allow their users to play games, access World Wide Web pages, exchange email, exchange and download files, exchange short messaging service (SMS) messages, and send and receive video.

[0004] With new mobile devices providing a wider range of capabilities, there is increasing demand among the users of these devices (i.e., wireless services subscribers) for new and interesting types of digital content that can be used on these mobile devices, such as games and other applications, images, ring tones, screensavers, wallpapers, etc. Although newer mobile devices often come pre-provisioned with certain digital products when first acquired by the subscriber, it is desirable to allow subscribers to acquire additional digital products for use in their

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mobile devices as such products become available. While this capability already exists, currently subscribers acquire digital content directly from the content suppliers (typically via the wireless network and the Internet). This process is inconvenient if a subscriber wishes to acquire various different items of digital content from different suppliers, since the subscriber must navigate to the web sites of different suppliers. Therefore, it is further desirable to make many different types of digital content available to subscribers at one time through a centralized "store".

[0005] From the content supplier's perspective, another impediment to the efficient distribution of digital content is the fact that different mobile devices often require different content packaging formats and provisioning protocols. In order to make a given item of digital content available to multiple mobile devices supporting different provisioning models, a digital content supplier will normally deploy that item of content multiple times, packaging it differently for each of the provisioning models. For example, an image to be delivered to Nokia-COD phones and Sprint-GCD OTA phones would be deployed twice, custom-packaged for each of those two delivery modes. It is very burdensome for digital content suppliers to have to package and provision the digital content they produce in a manner that is suitable for all of the devices in the marketplace. Moreover, it is difficult for content suppliers to keep up with the constant changes in device capabilities for the many mobile devices in the marketplace. Consequently, there is often a gap between the interoperability of a given digital product and how effective it can be used on a device. Therefore, the problem exists of how to efficiently allow many digital content providers to distribute many different types of digital content to subscribers using many different types of mobile devices.

[0006] A related problem is how to charge subscribers for the digital content they acquire. In one known system. The wireless carrier's system is capable of connecting to an external billing system and provides billing events to that system when a subscriber performs a chargeable action. However, this scenario assumes that all subscribers belong to a single organization that also owns the billing system. Furthermore, it assumes that a single currency is used. Yet many multi-national organizations have a parent company with subsidiaries in many countries. Different countries have different currencies, taxes and other charges. Each subsidiary may

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implement its own support/business infrastructure to deal with local regulations and customs, particularly with respect to the billing process. Consequently, the carrier's system must be able to generate billing events and direct them to the appropriate external billing system. Furthermore, it must be able to present the customer with a charge for each service, in the applicable currency and expressed in a way that is appropriate considering local taxes, fees and other regulations.

[0007] One way to address this problem, which only partially solves it, is to use credit card systems. In this scenario, the credit card company acts as an intermediary in the billing process. This approach consolidates all billing at one point. Settlement is done between the product/service provider and the subscriber provider (e.g., the wireless carrier) for a fee. This approach, however, does not handle the currency, taxes, fees and regulations issues mentioned above.

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SUMMARY OF THE INVENTION

[0008] One aspect of the invention is a method and apparatus for providing access to content for use on wireless communication devices. Multiple items of content are stored in a server system, to be made available for use in wireless communication devices used by multiple wireless services subscribers. Each of the items of content is associated in the server system with multiple different provisioning models for provisioning the content in wireless communication devices. Each of the provisioning models corresponds to a different set of device capabilities.

[0009] In another aspect of the invention, multiple different implementations of at least one of the items of content are received, where each implementation corresponds to a different set of device capabilities. A product catalog containing a description of the items of content is also maintained. The product catalog includes, in association with each item of content, a reference to each implementation of the item of content.

[0010] Other features of the present invention will be apparent from the accompanying drawings and from the detailed description which follows.

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BRIEF DESCRIPTION OF THE DRAWINGS

[0011] One or more embodiments of the present invention are illustrated by way of example and not limitation in the figures of the accompanying drawings, in which like references indicate similar elements and in which:

[0012] Figure 1 illustrates the relationship between the download manager, content suppliers, and subscribers;

[0013] Figure 2 shows a network architecture in which a download manager in accordance with the invention can be deployed;

[0014] Figure 3 schematically shows the components of the download manager;

[0015] Figure 4 shows the components of the device capability manager;

[0016] Figure 5 shows the relationship between a product entry and implementations of the product in the product catalog;

[0017] Figure 6 shows the relationship between a product and its implementations;

[0018] Figure 7 shows how various data elements are used in the billing process;

[0019] Figure 8 illustrates a simplified process by which a product can be listed in the product catalog in a way that facilitates device-tailored product discovery and provisioning;

[0020] Figure 9 shows a process by which the product catalog is displayed to a subscriber;

[0021] Figure 10 shows a process by which a purchase of a product can be made using the download manager;

[0022] Figure 11 illustrates the separation, within the download manager, of content from how the content is provisioned;

[0023] Figure 12 illustrates a process by which a product is provisioned in a client device using the appropriate one of various provisioning protocols;

[0024] Figure 13 shows an example of the software deployment architecture of the download manager; and

[0025] Figure 14 illustrates the hardware architecture of a computer system in which the download manager can be implemented.

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DETAILED DESCRIPTION

[0026] A system and method for efficiently managing the publication, purchase and delivery of digital content from multiple content suppliers to multiple wireless services subscribers in multiple domains are described below. As used in this description, the terms "digital content", "digital product", "content", and "product" are used interchangeably and mean software and/or data embodying things such as games and other applications, applets or the like; images; screensavers; wallpaper; ring tones; etc., particularly (but not necessarily exclusively) those designed for use in mobile devices such as cellular telephones, personal digital assistants (PDAs), and other small-footprint wireless/mobile devices. For convenience the terms "purchase" or "buy" are used to mean either actual purchase or any other conventional way in which a subscriber can acquire rights to use digital content (e.g., by acquiring a license).

Overview

[0027] As described in greater detail below, a system which manages publication, purchase and delivery of digital content is implemented in a network server system that includes one or more server computer systems on a network. The server system includes an application server referred to herein as the "download manager". Digital content suppliers can publish and manage their products using the download manager via a computer network, such as the Internet, and can make their products available to wireless services subscribers through the download manager for purchase or licensing. Subscribers can access the server system via wireless networks to purchase rights to download and use the digital content on their wireless communication devices.

[0028] Figure 1 illustrates the relationship between the download manager, content suppliers, and wireless services subscribers (users of mobile devices). The download manager 1 acts as an intermediary between multiple content suppliers 2 (e.g., 2A, 2B, etc.) and multiple customers (e.g., 3A, 3B, etc.), e.g., wireless services subscribers, belonging to multiple "domains". In the supply chain process for distribution of digital content, a content supplier 2 adds a digital product to the set of products managed by the download manager 1 (i.e., products "in the store"). The supplier 2 then associates various attributes with the product. Once the product has been submitted to the

product store, a product administrator associated with the download manager 1 verifies its quality and determines whether it should be made available to the customers 2 or if it should be rejected. Once the product is approved, customers 2 can buy the product by accessing the download manager 1 from their client devices.

[0029] To facilitate description, it is henceforth assumed herein that the customers are users of mobile devices and, therefore, are subscribers of warless services (although that need not be the case); thus, customers are henceforth called "subscribers" herein. Note, however, that the techniques described herein need not be limited to wireless services subscribers or mobile client devices.

Domains and Partner Management

[0030] Among other advantageous features, the download manager 1 facilitates partner management. A "partner", as the term is used herein, is an entity that holds a relationship to a subscriber for purposes of delivery of digital products, billing, returns, etc. For example, a partner can be an Internet portal, an Internet Service Provider (ISP), a wireless carrier, an application service provider (ASP), etc. A partner also appoints a number of content suppliers to supply products to the product store. Partner management is the concept of being able to assign responsibility for various parts of the digital product supply chain to different categories of users.

[0031] The entities "within the store" (managed by the download manager 1) belonging to a partner are partitioned into entities called "domains". A "domain", as the term is used herein, is an entity, defined in the download manager 1, that describes the billing relationship between a partner and a set of subscribers, as well as describing a partitioning of product space and administrative responsibilities. As such, a domain can represent a grouping of wireless services subscribers, such as a wireless carrier or a subsidiary of a wireless carrier, a business enterprise, or any other defined group of wireless services subscribers. The domain manager maintains a database of data defining the associations between domains and partners, administrators, subscribers and products.

[0032] Domains facilitate the proper billing of subscribers from multiple organizations and/or with multiple wireless carriers (or other subscriber providers), and facilitate

presentation of product descriptions to subscribers in the languages and currencies appropriate for their local countries or regions.

[0033] The domain entity is also used in the download manager 1 to classify other entities as belonging to a domain 1-to-1, belonging to a domain 1-to-many, many-to-many, or not belonging to a domain. In general, a domain captures the following relationships to the subscribers:

1) how subscribers are charged for the products they purchase and in which currency;

2) to which user groups the subscribers can belong;

3) from which product categories the subscribers can select products; and

4) which products are accessible to the subscribers.

[0034] In certain embodiments of the invention, a domain has the following properties:

- a name (localized)
- a description (localized)
- a uniform resource locator (URL) to a web site giving further description of the domain
- a contact address including contact person, contact telephone numbers, fax numbers and postal address
- the currency to use for billing and display purposes
- reference to handlers for various different payment models (e.g., online payment, pre-payment and post-payment)
- a set of references to rating handlers used for adjustment of product prices

[0035] The name and the descriptions have localized values for the set of languages registered in the system.

[0036] The distinction between domain entities and non-domain entities also forms the basis for delegated administration. More specifically, for each domain, the responsibility for supplying products, approving or rejecting products, etc. can be delegated to different suppliers and administrators. Thus, each domain is associated with a set of administrators that handle the products in the store. In certain embodiments of the invention, these administrators include a system administrator, a domain administrator, a product administrator, and a customer care administrator.

[0037] The system administrator is the overall administrator for the download manager 1, who can create new domains and their respective domain administrators to help regulate it. He also maintains the ability to control non-domain entities such as devices, content types, etc. The domain administrator is the overall administrator for a given domain. He has the ability to manage all of the suppliers and subscribers for his domain as well as create product and customer care administrators for the domain. The product administrator is responsible for managing the entire product lifecycle for the content submitted by the domain's suppliers. The customer care administrator is responsible for managing subscribers belonging to the domain. Each subscriber belongs to only one domain and can only see products for the domain to which he belongs.

[0038] A partner appoints a number of content suppliers who provide products to the product store. A supplier can only submit products to the domain(s) to which he belongs. The relationship between suppliers and domains is many-to-many. Products are approved and deployed separately for each domain.

[0039] From the content supplier's perspective, all entities in the download manager 1 that are domain-related are only selectable based on the domains to which the supplier can provide products. For example, a supplier can only choose from among the product categories and license models that belong to the domains to which the supplier has the right to supply products.

Network Environment

[0040] Figure 2 shows a network architecture in which a download manager in accordance with the invention can be advantageously deployed. One or more wireless networks 22 are connected to a computer network 24 through corresponding gateways 23. The computer network 24 may be the Internet, although alternatively, it could be essentially any other type of computer network, such as a corporate intranet, a local area network (LAN), etc., or a combination of such networks.

[0041] A number of mobile client devices 21 (e.g., 21A, 21B, etc.) operate on each wireless network 22. A number of servers 25 (e.g., 5A, 5B, etc.) operate on the computer network 24 to provide a variety of services for the mobile devices 21 and/or to one or more non-mobile client devices 29 coupled to the computer network 24. For

example, the servers 25 may include World Wide Web servers, file servers, application servers, etc.

[0042] Each gateway 23 is operated by the wireless carrier of the wireless network to which it is directly connected. Each gateway 23 provides an interface between a particular wireless network 22 and the computer network 24 (e.g., the Internet), providing routing and, if necessary, appropriate protocol translation and/or content transcoding. In some cases, the gateway 23 may be a standalone device or system. In other cases, the gateway 3 may be part of a more-capable server system that provides additional value-added services to users of client devices 21; such as a proxy service 27, a provisioning manager 28, etc.

[0043] A download manager 1 in accordance with the present invention is connected to the computer network 24, either directly (as shown) or indirectly. The download manager 1 can be, but does not have to be, operated by a wireless carrier.

Download Manager

[0044] Figure 3 schematically shows the download manager in greater detail, according to certain embodiments of the invention. In the illustrated embodiment, the major components of the download manager include a delivery manager31, a product manager 32, a business & operations manager 33, and multiple protocol handlers 34. Each of these components is preferably implemented as software, data, or a combination of software and data. However, in other embodiments, some or all of these components could be implemented in hardwired circuitry. The download manager 1 may also include a database 35 of published content, as shown, although at least some of the published content may instead be stored remotely.

[0045] The product manager 32 is the download manager's interface to the various content suppliers and provides centralized product cataloging (including enabling qualified content suppliers to register content for analysis and publication) and complete product life cycle support (i.e., management of content submission, analysis, approval, publication, use, maintenance, and eventual deactivation). The term "publication", as used herein, means making a product available on the download manager to wireless services subscribers for downloading to their client devices. The delivery manager 31

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is the download manager's interface to the various subscribers and is responsible for delivering purchased digital content to subscribers, including invoking a protocol handler appropriate for communicating with each requesting mobile device. The protocol handlers 34 support multiple product discovery protocols and multiple product delivery protocols simultaneously. Hence, the protocol handlers 34 include product discovery handlers (e.g., a WAP handler, a Web handler, a Motorola Discovery handler) and product delivery handlers (e.g., a MIDP OTA handler, a Motorola OTA handler, a Nokia COD OTA handler). The business & operations manager 33 is mainly responsible for managing domain information and processes for charging subscribers for purchases of content. These components are described further below.

[0046] As shown in Figure 3, the delivery manager 31 in certain embodiments includes a security manager 36, a device capability manager 37, a personal vault 38, a storefront 39, and a notification manager 40. The storefront 39 is a conventional graphical user interface for allowing subscribers to make online purchases. It can be branded to a particular wireless carrier, for example, or other business entity. The security manager 36 is responsible for authentication of subscribers and client devices for purposes of purchasing content and preferably can support multiple authentication schemes, such as HTTP-based authentication, MSISDN/NIA based authentication, etc. The personal vault 38 stores, on a subscriber-by-subscriber basis, information to facilitate digital rights management (DRM), such as product licenses and/or other "purchase" information of the products purchased by each subscriber. This allows a subscriber to remove downloaded content from a mobile device without losing rights to the product, or to recover products on a device in cases of device hard reset, loss, etc.

[0047] The notification manager 40 can provide various types of notifications to subscribers using various communication channels, such as email, SMS, and WAP Push. The notification manager 40 can generate notifications automatically, such as notifications of new products or product upgrades, or in response to commands from a system administrator, such as account notifications, notifications of special promotions, etc.

[0048] The device capability manager 37 is responsible for device recognition (e.g., supporting device recognition through UAProf using Profile headers and Profile-Diff

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headers), device capability determination (e.g., retrieving device descriptors using best efforts and appending device capabilities to the session context), and device capability management (e.g., automated management of UAProf capable devices and quarantine of undefined or partially defined devices). As described further below, recognition of devices and their capabilities is used for a variety of purposes, such as to filter the set of available products that a subscriber can discover when connecting to the download manager 1, to select the appropriate implementations of products that are purchased, and to select the appropriate provisioning model for provisioning a purchased product in a client device.

[0049] Figure 4 shows the components of the device capability manager 37 according to an embodiment of the invention. The device capability manager 37 includes a device manager 41, a device handler manager 42, a delivery context cache 43, a set of device recognition handlers 44, a device data access object (DAO) 45, a device information database 46, a UAProf parser 47, a UAProf resolver 48, a dm-config.xml file 49, and a DeviceVocabulary file 50. The device information database 46 stores information identifying mobile devices and their corresponding capabilities. The device manager 41 contains all of the business logic that supports the user interface and the rest of the download manager 1. The device DAO 45 contains all data logic and scripted query language necessary to communicate with the device information database 46.

[0050] The device handler manager 42 is responsible for discovering and determining the types of devices accessing the download manager 1. Upon startup of the download manager 1, the device handler manager 42 loads the device recognition handlers 44 ordered by the dm-config.xml file 49. This order is then used to determine which headers are to be processed first. The delivery context cache 43 is used to help improve performance on subsequent look-ups. If no device capabilities can be found or processed by the chain of handlers 44, the device handler manager 42 then uses a default delivery context as defined by an administrative user interface.

[0051] The illustrated embodiment includes three device recognition handlers 44: an XwapProfile handler, a UserAgent handler, and a quarantine handler. The XwapProfile handler is responsible for processing the "x-wap-profile" and "x-wap-profil-diff" request headers in requests from mobile (client) devices. It makes use of the UAProf parser 47

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to parse RDF-compliant files and the UAProf resolver 48 to resolve the differences of the headers. The UAProf parser 47 parses RDF-compliant files. The UAProf resolver 48 reads resolution rules from the device-vocabulary.xml configuration file 50 and uses these rules to help merge x-wap-profile and x-wap-profile-diff headers.

[0052] The UserAgent handler is responsible for processing the "user-agent" request headers. It uses regular expression matching to best match the capabilities with the incoming "user-agent" header. If no user-agent header can be found or one is found but does not match to any existing capabilities, the request header is passed to the next handler in the chain.

[0053] The quarantine handler is responsible for processing any "accept" request headers. If the quarantine handler finds a user-agent header, it will add a new record in a device match table. Otherwise, it will simply return a delivery context with a set of capabilities determined by the "accept" headers and capabilities already defined by the default device profile.

[0054] The device capability manager 37 is capable of managing client devices in either of two categories: actual devices and generic devices. In response to client device requests, the device capability manager 37 uses actual device information from the request and any applicable stored generic device definitions to recognize the accessing client device and its capabilities. The system administrator can define devices (or device capabilities) in either category. An actual device is a particular make and model of client device, such as "Nokia 6310". Actual devices are identified solely from incoming requests, based on the UserAgent and x-wap-profile headers in the requests, for example. A generic device is a predefined device or set of device capabilities. Examples of some generic device definitions are: all Nokia devices (e.g., "vendorname=nokia"), all devices with display size > 40, and all devices which support SMS. In response to client device requests, the device capability manager 37 uses the UserAgent or x-wap-profile header to identify the actual device accessing the system and to look up its corresponding capabilities in the device information database 46, which are combined with any applicable generic device definitions to determine the capabilities of the client device. The use of this information is described further below.

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[0055] It is useful now to define two types of device capabilities which the device capability manager is able to resolve: static capabilities and active capabilities. As defined in the download manager, "static" capabilities are the well-known set of attributes for a given device which are defined during pre-processing, not on-the-fly. These are associated with a client device as identified in the UserAgent or x-wap-profile headers. Generic devices, as defined above, only have static capabilities. "Active" capabilities represent a dynamic collection of attributes extracted during an interaction between the client device and the download manager, typically from the Accept headers. These two types of device capabilities are stored separately in the device information database 46.

[0056] The ability for a user to discover content based on the static (well-known) capabilities of his device is valuable. With the number of device manufacturers and content providers in the market, there is often a gap between the interoperability of a given content and how effective it can be run on a device. By using the system's unique ability to capture the capabilities of a device and for content suppliers to select compatible devices for their content, the download manager 1 is capable of targeting supported products to their respective devices for a subscriber. In addition, the download manager 1 is able to easily adapt to the ever-changing modifications to capabilities and requirements and is highly scalable as more devices and content are pushed into the system, without a substantial decrease in performance.

[0057] Referring again to Figure 3, the product manager 32 in certain embodiments includes a product workflow manager 51, a content analysis manager 52, a pricing manager 53, and a product catalog 54. The product workflow manager 51 allows the system administrator to define and modify details of the product workflow for processing content submitted by content providers. An example of a product workflow is (n chronological order): 1) submission, 2) content analysis, 3) listing of content in the product catalog, 4) usage of the content, 5) maintenance of content, and 6) content retirement (i.e., cancellation or deletion).

[0058] The content analysis manager 52 manages the process of verifying content quality and compliance with various requirements when the content is initially submitted by the content supplier (e.g., compliance with its declared type, content structure

resource utilization, etc.). Content must pass the content analysis process satisfactorily before being listed in the product catalog 54 (i.e., published).

[0059] The pricing manager 53 allows administrators to add, modify and delete license for products in the store. The pricing manager 53 also includes and invokes a set of rating handlers at the time of purchase, which can adjust the price of the product based on various factors (e.g., promotions, applicable rebates, etc.), as described further below.

[0060] The product catalog 54 contains descriptions of all published items of content (products). Referring to Figure 5, the catalog 54 includes, for each product entry 56, a reference 58 to at least one implementation 57 of that product. An implementation 57 can be simply a binary file (a "binary") representing the product. In some cases, however, an implementation 57 may represent two or more binaries 61, as shown in Figure 6. Also as represented in Figures 5 and Figure 6, any particular product may have multiple implementations published on the download manager, each of which may be designed for a different specific client device or set of client devices.

[0061] Hence, any particular product entry in the catalog 54 can include references to multiple implementations of the product. However, the products shown to any particular subscriber when the subscriber views the catalog are filtered according to the device capabilities of the subscriber's device. More specifically, only those products that have at least one implementation compatible with the subscriber's device are shown to the subscriber. As shown in Figure 5, each implementation entry 57 also includes a list (59A or 59B) of devices supported by that implementation. Each product entry 56 in the catalog 54 includes a list 59 of the devices that are supported by that product. Which represents the aggregation of all of the devices supported by all of the implementations 57 of that product.

[0062] In addition, for any particular product, the catalog may include a description 60 of the product in multiple different languages, to accommodate subscribers in different countries. Product descriptions 60 are shown to each subscriber in the appropriate language, and the prices of products are shown in the appropriate currency, according to the domain of which the subscriber is a member. The domain of the subscriber is identified by the domain manager 62, as described below.

[0063] Referring again to Figure 3, the business & operations manager 33 in certain embodiments includes an operation administration and management (OA&M) module 61, a domain manager 62, and a payment manager 63. The OA&M module 61 provides a Web based user interface for administering the download manager 1. It supports role-based delegation of administration duties (e.g., system administrator, domain administrator, product administrator, customer care administrator, etc.) and interfaces with the provisioning manager to provide logging and reporting of key events and transactions.

[0064] The payment manager 63 is responsible for the process of charging subscribers when they purchase content and supports multiple different languages and currencies, partitioned by domain. The approach to billing and payment assumes that there are local billing mechanisms in place, each of which has an established relationship to the subscriber already. The local billing mechanism operates in the local currency using the local taxes, fees and other applicable charges for the subscriber's region. It also invoices at intervals that are customary for the region.

[0065] In certain embodiments of the invention, a subscriber can select the preferred payment model to use of three available payment models:

- Online payment – payment is performed 'just-in-time'. A typical implementation performs the payment transaction at the time of the purchase.
- Pre-paid payments – payment is performed before purchase and the purchase is deducted from the pre-paid amount.
- Post payments – payment is performed after the purchase by invoice.

[0066] A separate payment handler of a set of payment handlers 64 is accessible to the payment manager 63 for each of these payment models (see Figure 3), and the payment manager is responsible for invoking the appropriate payment handler 64 at the time of purchase.

[0067] Referring now to Figure 7, anytime a subscriber logs in to the download manager, a session 71 is created. The session 71 holds a reference to a unique subscriber profile 72 associated with the subscriber. Each subscriber has such a subscriber profile, which points to the organization that holds the billing relationship with

the subscriber (i.e., the partner responsible for invoicing the subscriber) and an indication of the subscriber's selected payment model (i.e., post-paid, pre-paid, or online).

[0068] The download manager 1 also maintains a subscriber provider profile 73 for each subscriber provider (e.g., wireless carrier, etc.). Each subscriber provider profile 73 holds a reference to each of the payment handlers 64, an indication of the local currency, and an indication of any value added tax and/or other charges that normally apply to the offered services in the region.

[0069] The product catalog 54, as described above, holds the name, description and price of each product, as well as information indicating the supported devices. There is a separate entry for each supported local currency. There are no dependencies between the prices in various currencies for the same product.

[0070] This approach allows a product (or service) to have many different prices, on in each supported currency. There are no dependencies between prices other than that they all apply to one product. This approach, therefore, supports localized pricing policies and local taxes, etc.

[0071] The payment manager 63 includes a set of rating handlers (not shown), which are responsible for adjusting the price of products based on various factors, such as promotional offers, applying rebates, etc. Prices of content may change from time to time, subject to factors such as rebates, promotions, etc. At the time of purchase, the price of the product is determined by invoking the rating handlers. Each rating handler is called by the payment manager 63 with a reference to the corresponding product license and a reference to the subscriber. The rating handler is responsible for adjusting the price, if appropriate, and returning a new price.

[0072] Each of the payment handlers includes a charge method. During purchase the charge method of the registered payment handler for the payment model selected by the subscriber is called. The argument to the charge method is a data structure, ChargeDetailRecord, generated by the payment manager 63, which holds information about the subscriber, the product, the product license with the price, and the domain of the subscriber. The charge method can either approve the charge and, thus, allow the purchase, or it can deny the purchase.

[0073] Referring again to Figure 3, the domain manager 62 manages the associations between domains and partners, subscribers, suppliers, and products, and stores all of the domain information. As noted above, each domain can have the following properties:

- a name (localized)
- a description (localized)
- a uniform resource locator (URL) to a web site giving further description of the domain
- a contact address including contact person, contact telephone numbers, fax numbers and postal address
- the currency to use for billing and display purposes
- reference to handlers for online payment, pre-payment and post-payment
- a set of references to rating handlers

[0074] The domain manager 62 enables flexible business models to be implemented via revenue sharing between, and charging by, different stakeholders (partners).

[0075] Various aspects of the operation of the download manager 1 will now be described further with reference to Figures 8 through 13. Figure 8 illustrates a simplified process by which a product can be listed in the product catalog in a way that facilitates device-tailored product discovery and provisioning, according to an embodiment of the invention. Certain operations in the product workflow are not shown in Figure 8 to facilitate explanation, such as content analysis and approval. Initially, at block 801 the download manager 1 receives inputs from a product supplier defining a product and one or more implementations of that product. At block 802, the download manager receives inputs from the supplier specifying one or more devices (actual or generic) which support each implementation and one or more provisioning protocols to be used for each implementation. At block 803 the download manager 1 stores the product definition, the implementations, and a list of all of the supported devices and provisioning protocols. Finally, at block 804 the download manager 1 determines the set of all possible devices which support the product and stores this information in association with the product information in the product catalog 54.

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[0076] Figure 9 shows a process by which the catalog is displayed to a subscriber, according to an embodiment of the invention. At block 901 a client device operated by the subscriber connects to the download manager 1. The domain manager 62 then identifies the domain of the subscriber at bock 902 based on its stored domain and subscriber associations. At block 903, the product manager 32 selects the language and currency to be used based on the domain of the subscriber (each domain has one language and currency). At block 904, the device capability manager 37 identifies the client device (e.g., from the UserAgent or x-wap-profile header) and its corresponding set of static (well-known) device capabilities. When a request to view available products is received from the client device (block 905), at block 906 the product manager 32 determines from the product catalog 54 which products are supported by the client device, based on the (static) capabilities of the client device. The download manager 1 then sends a response to the client at block 907, to cause the client device to display product information relating to only those products supported by the client device, in the appropriate currency and language for the subscriber's domain.

[0077] Figure 10 shows a process by which a purchase of a product can be made, according to an embodiment of the invention. After displaying the product catalog 54 to the subscriber, the download manager 1 receives the subscriber's selection of the product to purchase at block 1001. At block 1002 the pricing manager 53 calls all of the registered rating adapters. The rating adapters then adjust the price of the selected product, if appropriate, at block 1003. At block 1004 the pricing manager 53 then presents a license object indicating the price to the subscriber. If the subscriber confirms the purchase (block 1005), then at block 1006 the provisioning manager requests the payment manager 63 to charge the applicable price for the product. The payment manager 63 responds at block 1007 by selecting the applicable payment handler 44 based on the domain to which the subscriber belongs and the subscriber's preferred payment model (prepaid, post-paid, or online). Finally, at block 1008 the selected payment handler 44 performs the charge method to complete the transaction.

Multiple Provisioning Models

[0078] Different client devices often require different content provisioning protocols and packaging formats. In order to make a given item of digital content available to multiple mobile devices supporting different provisioning models, a digital content supplier would normally have to deploy that item of content multiple times, packaging it differently for each of the provisioning models. The download manager 1, however, separates content from how it is provisioned to a device. As described above and as illustrated conceptually in Figure 11, in the download manager 1 the product information is separated from the content itself, the content is separated from how it is packaged for delivery, the packaged content is separated from the delivery mechanism, and the delivery mechanism is separated from the discovery mechanism (the mechanism by which the subscriber discovers a product). By virtue of this separation, a content supplier is able to deploy content only once, targeting a wide range of devices, and the download manager 1 will deliver the content to those devices over a wide range of provisioning protocols.

[0079] When a product is submitted to the download manager 1 by a supplier, the supplier specifies which devices are supported by each implementation of the product. This information is then stored by the download manager 1 and used to select the proper packaging and provisioning protocol when the product is subsequently purchased.

[0080] The provisioning model used to provision a particular product in a particular client device is based on the device capabilities of the client device as well as the content type of the best-fit implementation. A provisioning "model", in this context, includes a particular provisioning protocol and a content packaging format. The ability to deliver the "best-fit" content based on "active" (dynamic) capabilities of a device is advantageous. Content provisioning provides the second part of targeting products to a given subscriber based on his device's capabilities. Whereas product discovery as described above relies on the "static" capabilities, provisioning relies on the "active" capabilities to determine the exact and often new enhancements of the client device. Given that a device can be fitted or enhanced with new features not described by the default set of capabilities originally intended for the device, the download manager 1

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can use these active capabilities to find the best match content to provision to the device.

[0081] Figure 12 illustrates a process by which a product is provisioned in a client device using the appropriate one of various provisioning protocols. At block 1201, in response to a subscriber purchasing a product, the delivery manager 31 selects the best implementation of the product based on the device capabilities (static and active) of the client device. At block 1202 the download manager retrieves the content type of the selected implementation (e.g., MIDlet, EXE file, applet, iAppli, etc.). At block 1203 the download manager 1 selects the appropriate provisioning model available for that implementation, based on the device capabilities of the client device and the content type of the selected implementation. The provisioning manager 28 then creates a content descriptor for the implementation at block 1204, based on the selected provisioning model. The content descriptor specifies the name of the content to be provisioned, the size of the content, a location (e.g., a URL) at which the content is stored, and the content type of the content. The content descriptor is unique to the provisioning handler (protocol) of the selected provisioning model.

[0082] The provisioning manager 28 then downloads the content descriptor to the client device at block 1205. The client device parses the descriptor and then requests the content. When the provisioning manager 28 receives the request for the content from the client device at block 1206, the provisioning manager 28 responds at block 1207 by downloading the content using the provisioning protocol of the selected provisioning model (e.g., COD OTA, Openwave Download Fun, MIDP OTA, etc.)

Download Manager Deployment Architecture

[0083] Figure 13 shows an example of the software deployment architecture of the download manager 1 at a high level, according to an embodiment of the invention. Each instance of the download manager 1 resides on a host 131 that has access to a database 140. The host 131 is a server-class computer system including an operating system (e.g., Solaris). The database 140 may represent multiple physical databases, which in aggregate store all of the data used by the download manager 1 (i.e., product information, subscriber information, partner information, domain information, etc.). In

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the illustrated embodiment, each host 131 includes a Java Virtual Machine (JVM) 132 which runs on top of the operating system and which hosts an application server 133. On top of the application server 133 is a Web container 134 that contains Java Server Pages (JSPs) 135 and servlets 136 as well as application components 137 including the business logic and data access layer 138 of the download manager 1.

[0084] The download manager 1 is formed by the Web container 134 and its contents, the application components 137, and at least a portion of the database 140. Horizontal scaling can be achieved by adding more hosts131 hosting instances of the download manager 1. In that case, an Internet Protocol (IP) load balancer 139 provides sticky load balancing, i.e., directing all session-specific traffic to the same host.

[0085] The above-described software architecture (i.e., the download manager) can be implemented in one or more conventional server-class computer systems. Figure 14 illustrates the hardware architecture of such a computer system at a high-level. Note that this architecture is also representative of at least some client devices that access the download manager 1. Note also that Figure 14 is a conceptual representation which represents any of numerous possible specific physical arrangements of hardware components; however, the details of such arrangements are not germane to the present invention and are well within the knowledge of those skilled in the art.

[0086] The processing system shown in Figure 14 includes one or more processors 140, i.e. a central processing unit (CPU), read-only memory (ROM) 141, and random access memory (RAM) 142, each connected to a bus system 146. Also coupled to the bus system 146 are a mass storage device 143, a data communication device 144, and in some embodiments, one or more additional input/output (I/O) devices 145.

[0087] The processor(s) 140 may be, or may include, one or more programmable general-purpose or special-purpose microprocessors or digital signal processors (DSPs), microcontrollers, application specific integrated circuits (ASICs), programmable logic devices (PLDs), or a combination of such devices. The bus system 146 includes one or more buses or other physical connections, which may be connected to each other through various bridges, bus controllers and/or adapters such as are well-known in the art. For example, the bus system 146 may include a "system bus", which may be connected through one or more adapters to one or more expansion buses, such as a

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Peripheral Component Interconnect (PCI) bus, HyperTransport or industry standard architecture (ISA) bus, small computer system interface (SCSI) bus, universal serial bus (USB), or Institute of Electrical and Electronics Engineers (IEEE) standard 1394 bus (sometimes referred to as "Firewire"). In alternative embodiments, some or all of the aforementioned components may be connected to each other directly, rather than through a bus system.

[0088] The mass storage device 143 may be, or may include, any one or more devices suitable for storing large volumes of data in a non-volatile manner, such as a magnetic disk or tape, magneto-optical (MO) storage device, or any of various types of Digital Versatile Disk (DVD) or Compact Disk (CD) based storage, or a combination of such devices.

[0089] The data communication device 144 is a device suitable for enabling the processing system to communicate data with a remote processing system over a data communication link 148, and may be, for example, a conventional telephone modem, a wireless modem, an Integrated Services Digital Network (ISDN) adapter, a Digital Subscriber Line (DSL) modem, a cable modem, a radio transceiver, a satellite transceiver, an Ethernet adapter, or the like.

[0090] The I/O devices 145 (which may be omitted in a system that operates exclusively as a server and provides no direct local user interface) may include, for example, one or more devices such as: a pointing device such as a mouse, trackball, touchpad, or the like; a keyboard; audio speakers; and/or a display device such as a cathode ray tube (CRT), a liquid crystal display (LCD), or the like. Other variations upon the illustrated set of components can be implemented in a manner consistent with the invention.

[0091] Software (including instructions and data) 147 to implement the techniques described above may be stored in one or more of ROM 141, RAM 142, and mass storage device 143. In certain embodiments, the software 147 may be initially loaded into the processing system by downloading it from a remote system through the communication device 144.

[0092] Thus, a system and method for managing the publication, purchase and delivery of digital content from multiple content suppliers to multiple wireless services subscribers in multiple domains have been described. Although the present invention

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has been described with reference to specific exemplary embodiments, it will be recognized that the invention is not limited to the embodiments described, but can be practiced with modification and alteration within the spirit and scope of the appended claims. Accordingly, the specification and drawings are to be regarded in an illustrative sense rather than a restrictive sense.

CLAIMS

What is claimed is:

1. A method of providing access to content for use on wireless communication devices, the method comprising:

receiving and storing in a server system a plurality of items of content to be made available for use in wireless communication devices used by a plurality of wireless services subscribers; and

associating each of the items of content in the server system with a plurality of different provisioning models for provisioning the content in wireless communication devices, each of the provisioning models corresponding to a different set of device capabilities.

2. A method as recited in claim 1, wherein each provisioning model includes a provisioning protocol and a corresponding set of provisioning descriptors.

3. A method as recited in claim 1, further comprising:

receiving a request for one of the items of content from a wireless services subscriber;

identifying device capabilities of a wireless communication device used by the subscriber in response to the request;

selecting one of a plurality of provisioning models associated in the server system with the requested item of content, based on the device capabilities of the wireless communication device used by the subscriber;

packaging the requested item according to the selected provisioning model; and

provisioning the requested item in the wireless communication device used by the subscriber according to the selected provisioning model.

4. A method as recited in claim 3, wherein:

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said packaging the requested item comprises creating a provisioning descriptor for the requested item according to the selected provisioning model, and associating the provisioning descriptor with the requested item; and

said provisioning the requested item in the wireless device comprises sending the packaged requested item to the wireless communication device used by the subscriber according to a provisioning protocol associated with the selected provisioning model.

5. A method of providing access to content for use on wireless communication devices, the method comprising:

receiving and storing a plurality of items of content to be made available for use in wireless communication devices used by a plurality of wireless services subscribers, including receiving a plurality of different implementations of at least one of the items of content, where each implementation of any given item of content corresponds to a different set of device capabilities; and

maintaining a product catalog containing a description of the items of content, the product catalog including, in association with each item of content, a reference to each implementation of said item of content.

6. A method of providing access to digital content for use on wireless communication devices, the method comprising:

receiving and storing in a server system a plurality of items of digital content to be made available for use in wireless communication devices used by a plurality of wireless services subscribers, including receiving and storing a plurality of different implementations of at least one of the items of digital content, where each implementation of any given item of digital content corresponds to a different set of device capabilities;

operating the server system to maintain a product catalog containing a description of the items of digital content, wherein the product catalog includes, in association with each item of digital content, a reference to each implementation of said item of digital content;

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receiving a request from a wireless device used by one of the subscribers;

in response to the request, selecting a portion of the product catalog to be presented to the subscriber, based on device capabilities of the wireless device used by the subscriber; and

presenting the selected portion of the product catalog to the subscriber via a wireless network, such that the selected portion, as presented to the subscriber, provides only a single description of each item of digital content in said portion, regardless of the number of implementations of each said item.

7. A method as recited in claim 6, wherein said selecting a portion of the product catalog comprises:

in response to the request, determining the identity of the wireless device used by the subscriber, wherein each implementation of the plurality of items of digital content has been previously associated in the server system with at least one device identity, according to corresponding device capabilities supported by the implementation; and

selecting the portion of the product catalog to be presented to the subscriber based on the identity of the wireless device used by the subscriber.

8. A method as recited in claim 6, further comprising:

receiving from the subscriber a request for one of the items of digital content in said portion of the product catalog;

selecting an implementation of the requested item of digital content, based on device capabilities of the wireless device used by the subscriber; and

downloading the selected implementation of the item of digital content to the wireless device used by the subscriber.

9. A method as recited in claim 1, further comprising associating each of the items of digital content in the server system with a plurality of different provisioning models, each of the provisioning models corresponding to a different set of device capabilities, each provisioning model including a provisioning protocol and a corresponding set of

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provisioning attributes and descriptors for provisioning digital content in wireless devices.

10. A method as recited in claim 9, further comprising:

receiving from the subscriber a request for one of the items of digital content in said portion of the product catalog;

identifying device capabilities of the wireless device used by the subscriber;

selecting one of a plurality of provisioning models associated with the requested item in the server system, based on the device capabilities of the wireless device used by the subscriber;

packaging the requested item according to the selected provisioning model; and

provisioning the requested item in the wireless device used by the subscriber according to the selected provisioning model.

11. A method as recited in claim 10, wherein:

said packaging the requested item comprises creating a provisioning descriptor for the requested item according to the selected provisioning model, and associating the provisioning descriptor with the requested item; and

said provisioning the requested item in the wireless device comprises sending the packaged requested item to the wireless device used by the subscriber according to a provisioning protocol associated with the selected provisioning model.

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ABSTRACT OF THE DISCLOSURE

A network server system includes a download manager that manages the publication, purchase and delivery of digital products from multiple suppliers to wireless services subscribers in multiple domains. Product suppliers can publish and manage their products on the server system via a computer network and make their products available to the subscribers for purchase or licensing. The subscribers in each domain can access the server remotely to purchase rights to download and use the products on associated wireless communication devices. Multiple different implementations of any product can be maintained, where each implementation corresponds to a different set of device capabilities. Each product can also be associated with multiple different provisioning models, each corresponding to a different set of device capabilities.

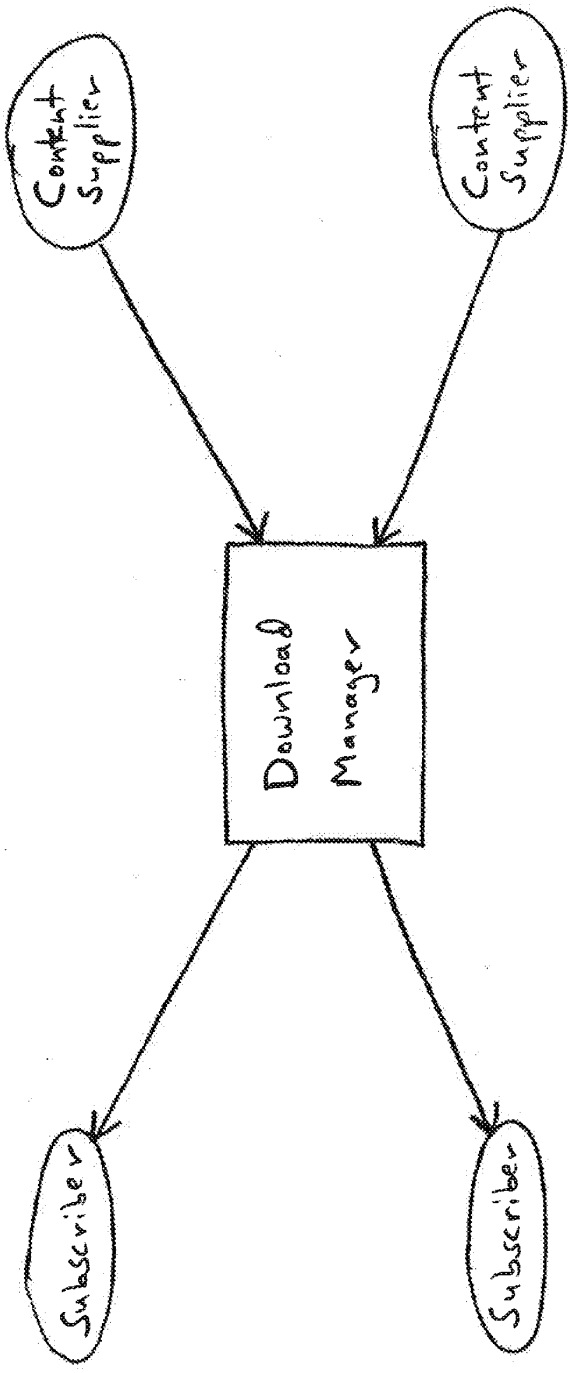
Content Supplier
Content Supplier
Download Manager
Subscriber
Subscriber

FIG. 1

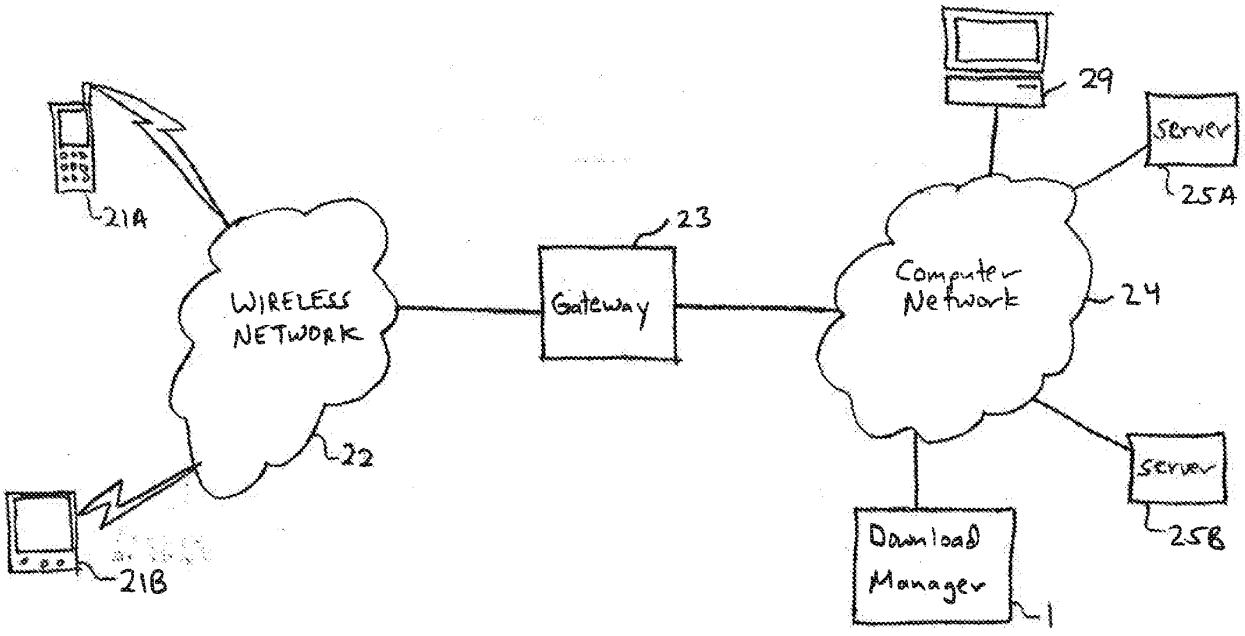
21A
WIRELESS NETWORK
22
21B
Gateway
23
Computer Network
24
29
Server
25A
Server
25B
Download Manager
1

FIG. 2

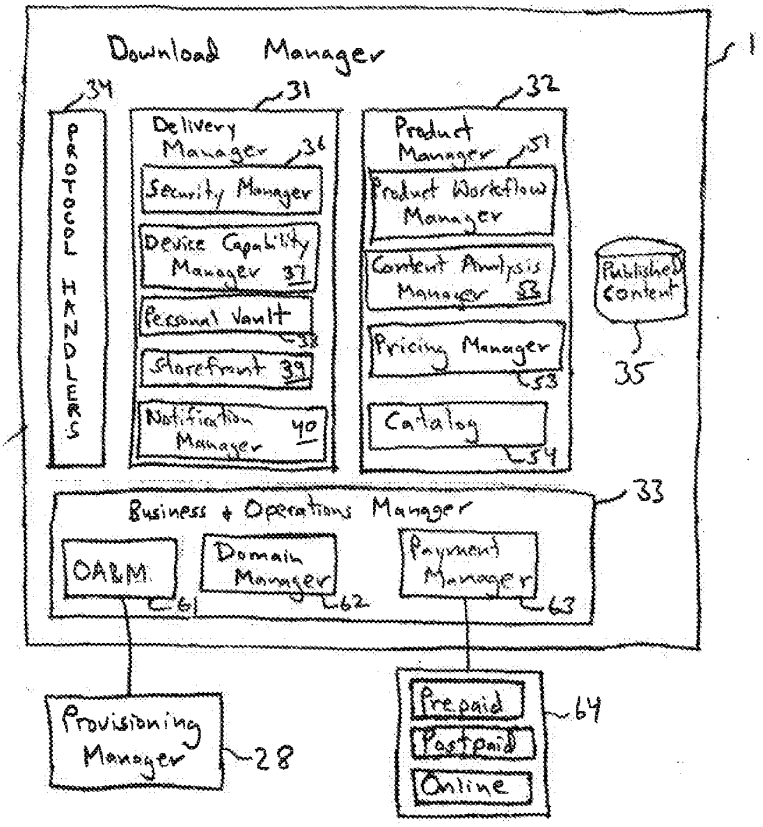
Download Manager
1
34
31
32
Protocol Handlers
Delivery Manager
36
Security Manager
Device Capability Manager
37
Personal Vault
38
Storefront
39
Notification Manager
40
Product Manager
51
Product Workflow Manager
Content Analysis Manager
52
Pricing Manager
53
Catalog
54
Published Content
35
Business & Operations Manager
33
OA&M
61
Domain Manager
62
Payment Manager
63
Provisioning Manager
28
Prepaid
Postpaid
Online
64

FIG. 3

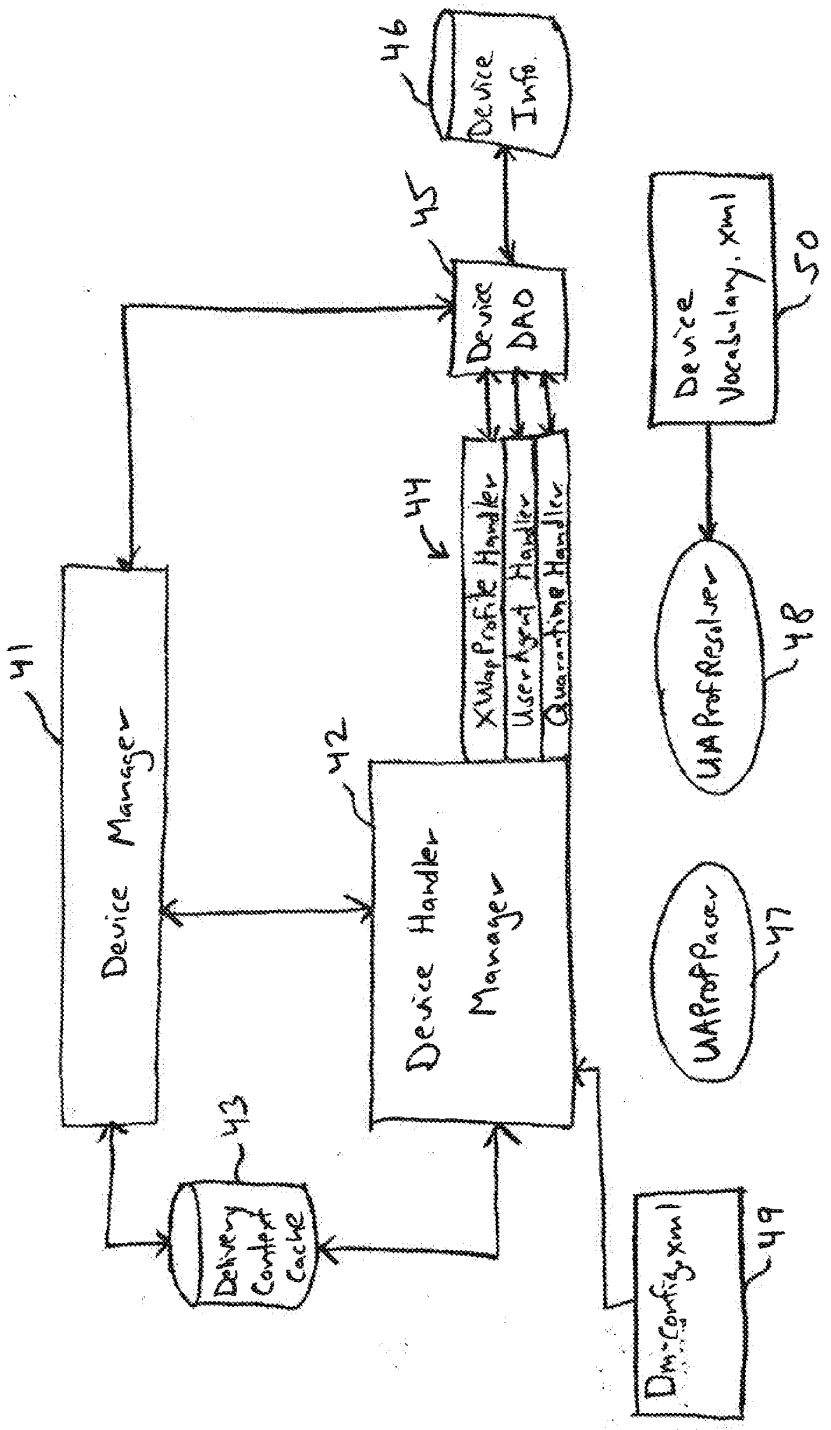
37
Device Manager
41
Device Handler Manager
42
Delivery Content Cache
43
XWap Profile Handler
User Agent Handler
Quarantine Handler
44
Device DAO
45
Device Info.
46
UAProfPacer
47
UAProfResolver
48
DmConfig.xml
49
Device Vocabulary.xml
50

FIG. 4

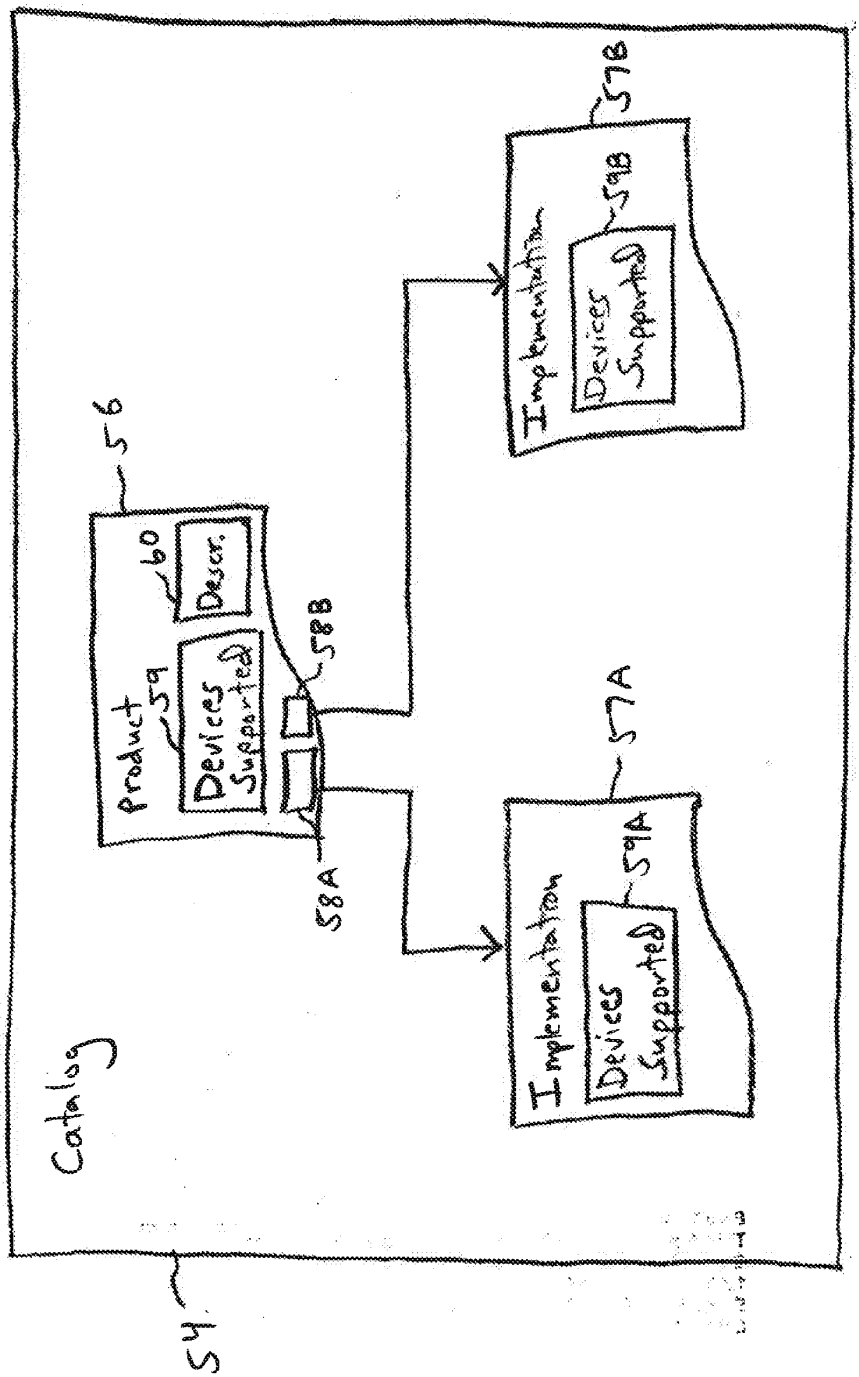
Catalog
54
Product
59
Devices Supported
60
Descr.
56
58A
58B
Implementation
Devices Supported
59A
57A
Implementation
Devices Supported
59B
57B

FIG. 5

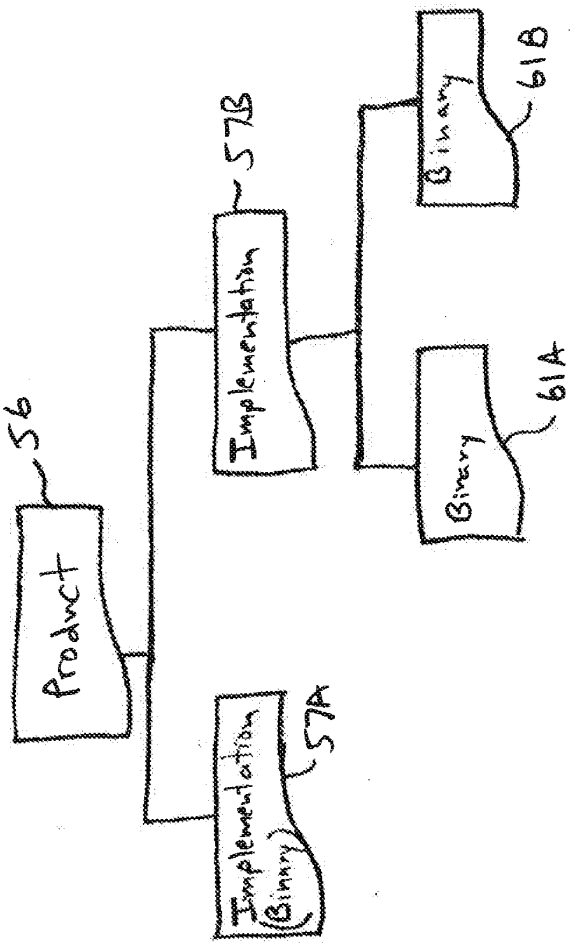
56
Product
57A
Implementation (Binary)
57B
Implementation
61A
Binary
61B
Binary

FIG. 6

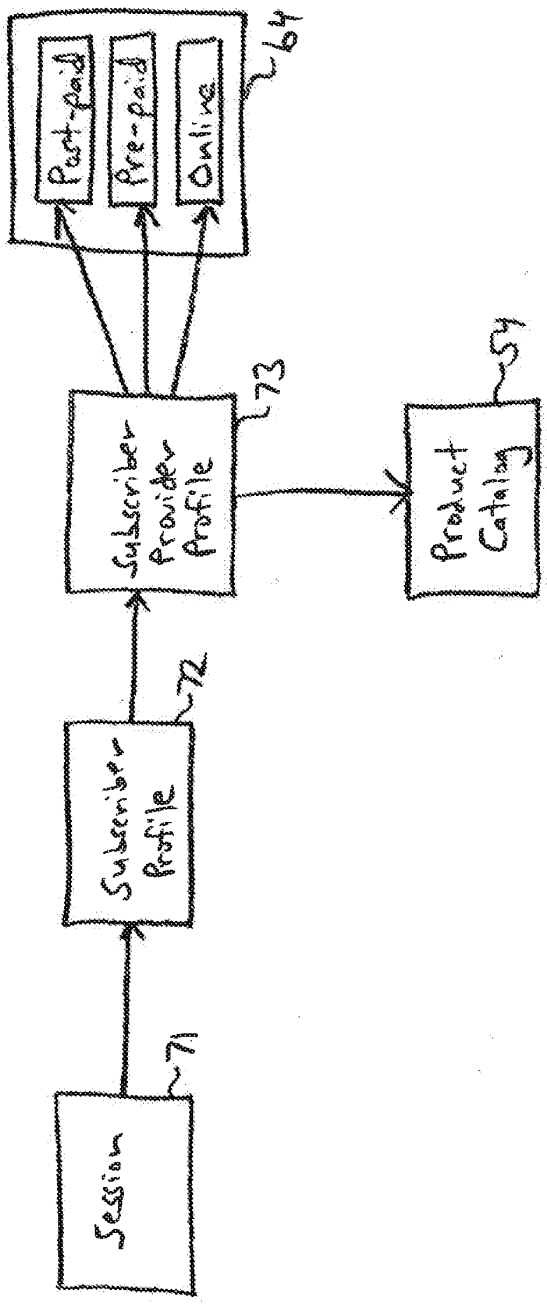
Post-paid
Pre-paid
Online
64
Subscriber Provider Profile
73
Product Catalog
59
Subscriber Profile
72
Session
71

FIG. 7

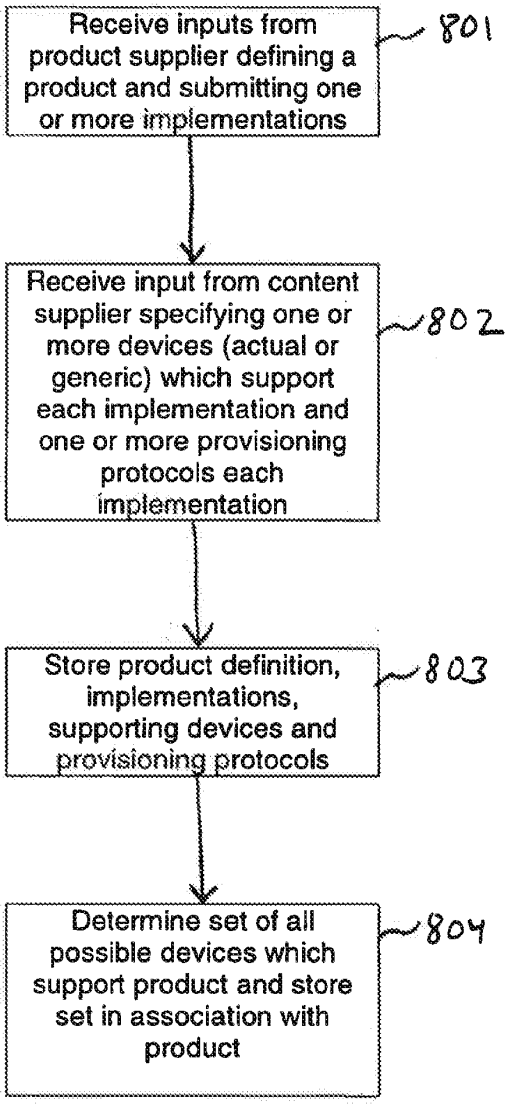
Receive inputs from product supplier defining a product and submitting one or more implementations
801
Receive input from content supplier specifying one or more devices (actual or generic) which support each implementation and one or more provisioning protocols each implementation
802
Store product definition, implementations, supporting devices and provisioning protocols
803
Determine set of all possible devices which support product and store set in association with product
804

FIG. 8

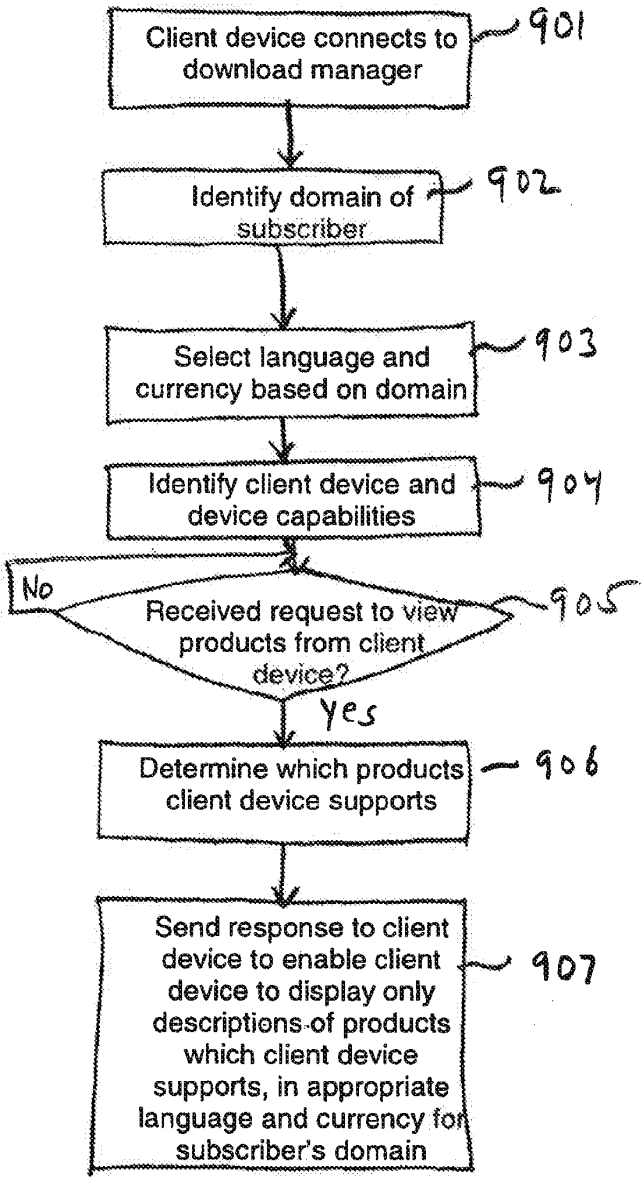
Client device connects to download manager
901
Identify domain of subscriber
902
Select language and currency based on domain
903
Identify client device and device capabilities
904
No
Received request to view products from client device?
905
Yes
Determine which products client device supports
906
Send response to client device to enable client device to display only descriptions of products which client device supports, in appropriate language and currency for subscriber's domain
907

FIG. 9

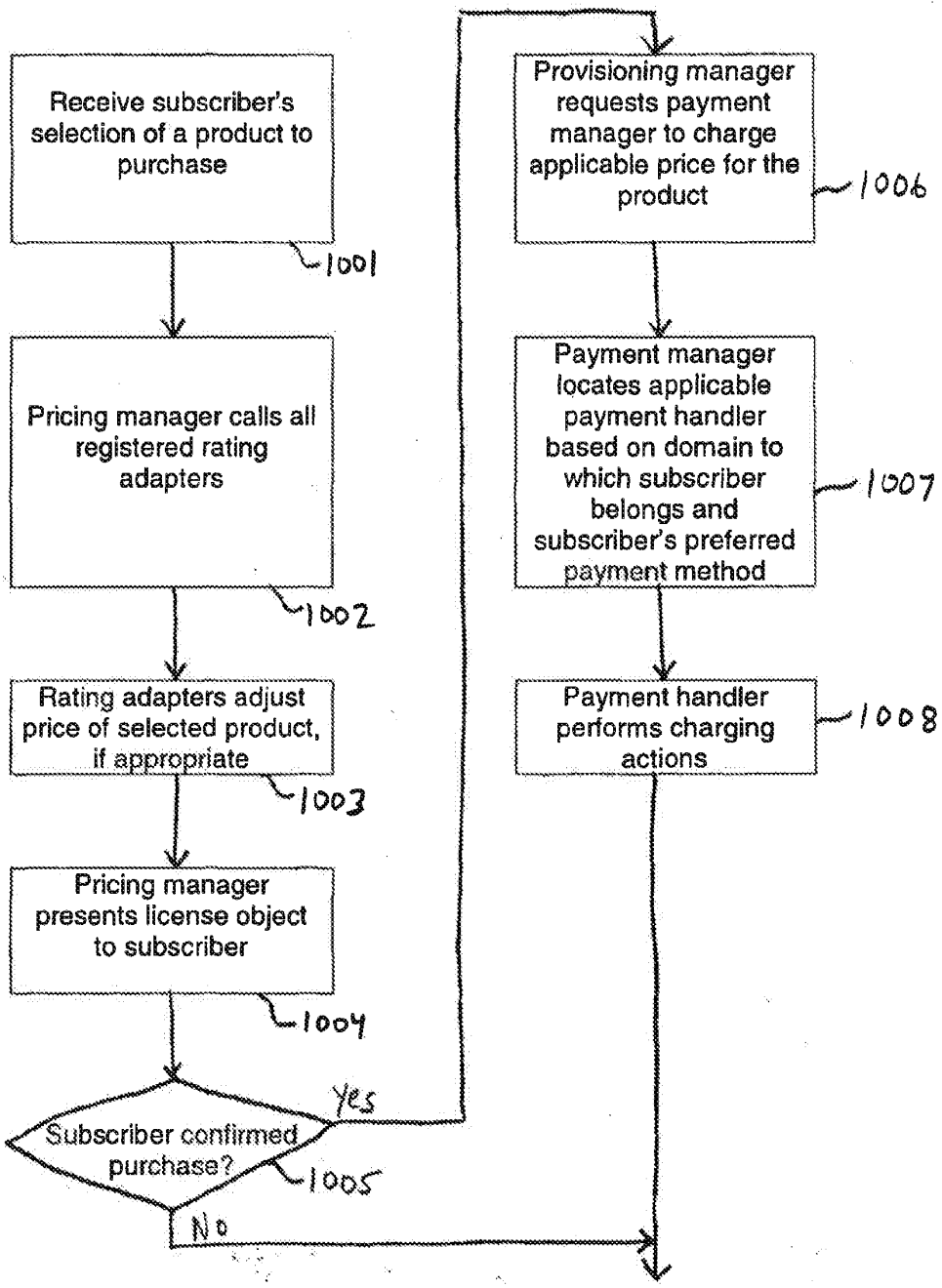
Receive subscriber's selection of a product to purchase
1001
Pricing manager calls all registered rating adapters
1002
Rating adapters adjust price of selected product, if appropriate
1003
Pricing manager presents license object to subscriber
1004
Subscriber confirmed purchase?
1005
Yes
No
Provisioning manager requests payment manager to charge applicable price for the product
1006
Payment manager locates applicable payment handler based on domain to which subscriber belongs and subscriber's preferred payment method
1007
Payment handler performs charging actions
1008

FIG. 10

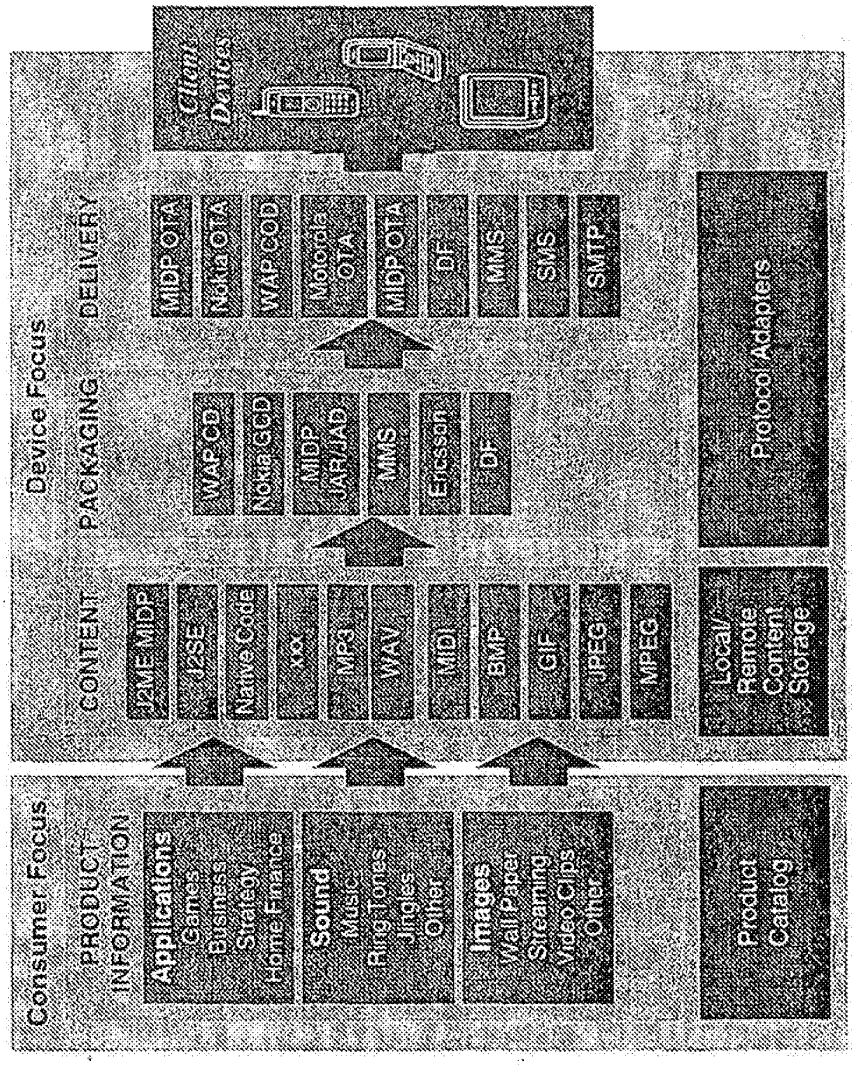
Consumer Focus
PRODUCT INFORMATION
Applications
Games
Business
Stocks
Home Finance
Sound
Music
Ring Tones
Jingles
Other
Images
Wall Paper
Streaming Video Clips
Other
Product Catalog
CONTENT PACKAGING DELIVERY
Device Focus
J2ME MIDP
J2SE
Native Code
WAV
MP3
WAV
MIDI
BMP
GIF
JPEG
MPEG
WAP OD
Nokia OD
MIDP JAR/JAD
MMS
Ericsson
DF
MIDP OTA
Nokia OTA
WAP OD
Motorola OTA
MIDP OTA
DF
MMS
SMS
SMTP
Local/Remote Content Storage
Protocol Adapters
Client Devices

FIG. 11

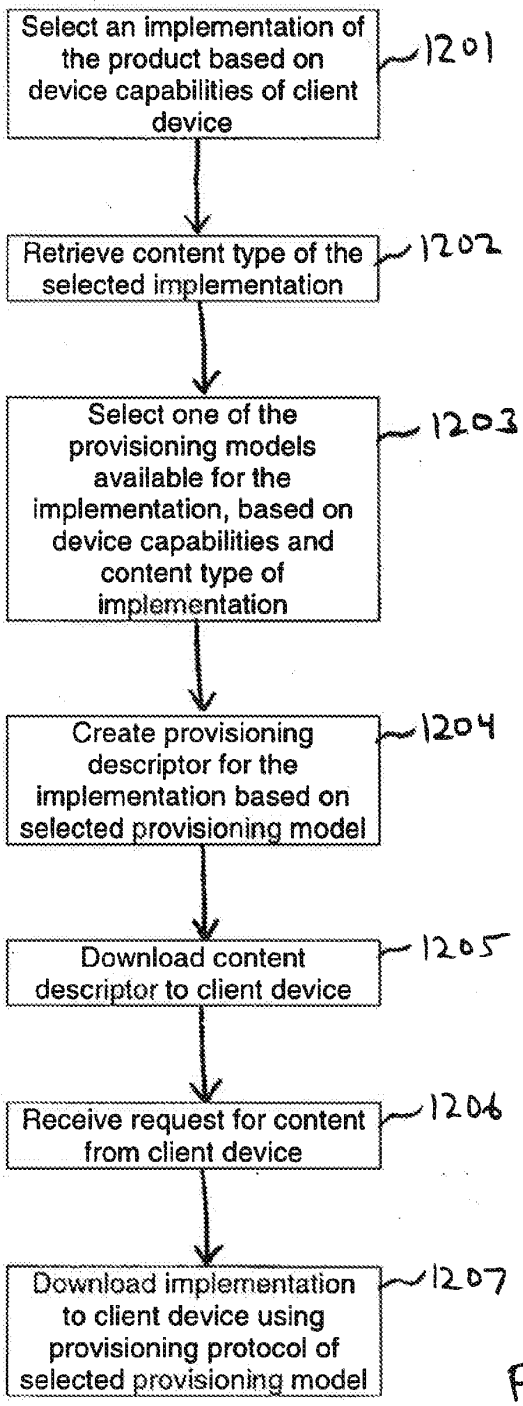
Select an implementation of the product based on device capabilities of client device
1201
Retrieve content type of the selected implementation
1202
Select one of the provisioning models available for the implementation, based on device capabilities and content type of implementation
1203
Create provisioning descriptor for the implementation based on selected provisioning model
1204
Download content descriptor to client device
1205
Receive request for content from client device
1206
Download implementation to client device using provisioning protocol of selected provisioning model
1207

FIG. 12

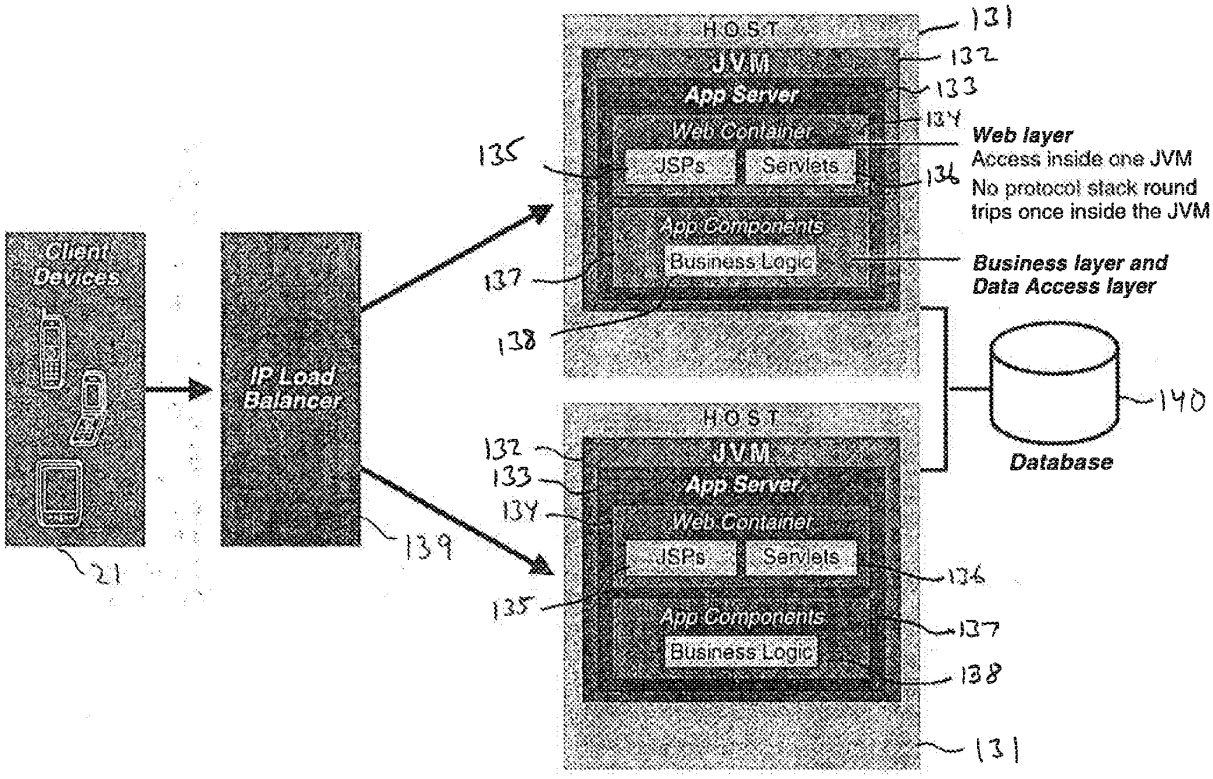
Client Devices
IP Load Balancer
HOST
JVM
App Server
Web Container
JSPs
Servlets
App Components
Business Logic
Web layer
Access inside one JVM
No protocol stack round trips once inside the JVM
Business layer and Data Access layer
Database
131
132
133
134
135
136
137
138
139
140
21

FIG. 13

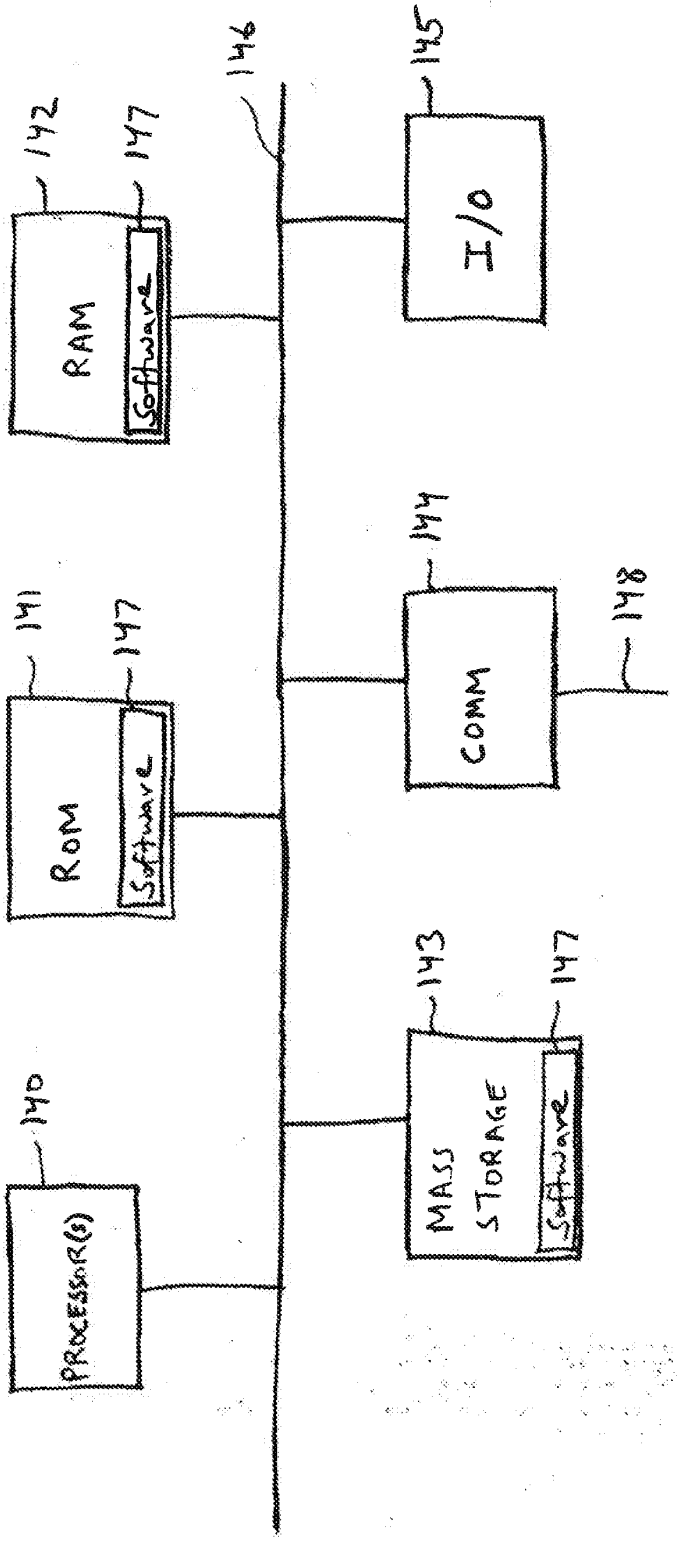
140
PROCESSOR(S)
141
ROM
Software
142
RAM
Software
143
MASS STORAGE
Software
144
COMM
145
I/O
146
147
148

FIG. 14

Attorney's Docket No.: 3399P103/1218 Patent

First Named Inventor: Rikard M. Kjellberg

Check One:

X Declaration Submitted with Initial Filing OR

____ Declaration Submitted After Initial Filing (Surcharge under 37 C.F.R. § 1.16(e) Required).

Complete If Known:

Application No.: Not yet assigned
Filing Date: Herewith
Art Unit: Not yet assigned
Examiner Name: Not yet assigned

DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION

As a below named inventor, I hereby declare that:

My residence, mailing address, and citizenship are as stated below next to my name.

I believe I am the original, first, and sole inventor (if only one name is listed below) or an original, first, and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled
Device Capability Based Discovery, Packaging and Provisioning of Content for Wireless Mobile Devices

the specification of which

X is attached hereto.

____ was filed on (MM/DD/YYYY) _____ as
United States Application Number _____
or PCT International Application Number _____
and was amended on (MM/DD/YYYY) _____ (if applicable)

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claim(s), as amended by any amendment specifically referred to above.

I do not know and do not believe that the claimed invention was ever known or used in the United States of America before my invention thereof, or patented or described in any printed publication in any country before my invention thereof or more than one year prior to this application. I do not know and do not believe that the claimed invention was in public use or on sale in the United States of America more than one year prior to this application, nor do I know or believe that the invention has been patented or made the subject of an inventor's certificate issued before the date of this application in any country foreign to the United States of America on an application filed by me or my legal representatives or assigns more than twelve months (for a utility patent application) or six months (for a design patent application) prior to this application.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 C.F.R. 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or (f), or 365(b) of any foreign application(s) for patent, inventor's or plant breeder's rights certificate(s), or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent, inventor's or plant breeder's rights certificate(s), or any PCT international application having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s)			Priority Claimed?		Certified Copy Attached?	
(Number)	(Country)	(Foreign Filing Date - MM/DD/YYYY)	Yes	No	Yes	No
(Number)	(Country)	(Foreign Filing Date - MM/DD/YYYY)	Yes	No	Yes	No
(Number)	(Country)	(Foreign Filing Date - MM/DD/YYYY)	Yes	No	Yes	No

I hereby appoint the Practitioners associated with Customer Number 26529 as my respective patent attorneys and patent agents, with full power of substitution and revocation, to prosecute this application and to transact all business in the U.S. Patent and Trademark Office connected herewith.

Direct all correspondence to (check one):

X Customer Number or Bar Code Label

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Full Name of Sole/First Inventor:	**Rikard M. Kjellberg**	Citizenship:	**Sweden**
Inventor's Signature:	_____	**Date of Signature:**	_____
Residence: (City)	Santa Cruz	(State/Country)	CA/US
Mailing Address:	23911 East Cliff Drive, Santa Cruz, CA 95062, US		
Full Name of Second/Joint Inventor:	**Sheng Liang**	Citizenship:	**US**
Inventor's Signature:	_____	**Date of Signature:**	_____
Residence: (City)	Cupertino	(State/Country)	CA/US
Mailing Address:	10440 Oakville Avenue, Cupertino, CA 95014, US		
Full Name of Third/Joint Inventor:	**Tomas G. Lund**	Citizenship:	**Sweden**
Inventor's Signature:	_____	**Date of Signature:**	_____
Residence: (City)	Foster City	(State/Country)	CA/US
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PATENT APPLICATION FEE DETERMINATION RECORD
Effective January 1, 2003

Application or Docket Number: 3399P103

CLAIMS AS FILED - PART I

	(Column 1)	(Column 2)
TOTAL CLAIMS	11	
FOR	NUMBER FILED	NUMBER EXTRA
TOTAL CHARGEABLE CLAIMS	11 minus 20=	* 0
INDEPENDENT CLAIMS	3 minus 3 =	* 0
MULTIPLE DEPENDENT CLAIM PRESENT		☐

* If the difference in column 1 is less than zero, enter "0" in column 2

SMALL ENTITY TYPE ☐ OR OTHER THAN SMALL ENTITY

RATE	FEE	OR	RATE	FEE
BASIC FEE	375.00	OR	BASIC FEE	750.00
X$ 9=		OR	X$18=	0
X42=		OR	X84=	0
+140=		OR	+280=	0
TOTAL		OR	TOTAL	757

CLAIMS AS AMENDED - PART II

AMENDMENT A	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	*	Minus	**	=
Independent	*	Minus	***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				☐

SMALL ENTITY OR OTHER THAN SMALL ENTITY

RATE	ADDITIONAL FEE	OR	RATE	ADDITIONAL FEE
X$ 9=		OR	X$18=	
X42=		OR	X84=	
+140=		OR	+280=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

AMENDMENT B	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	*	Minus	**	=
Independent	*	Minus	***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				☐

RATE	ADDITIONAL FEE	OR	RATE	ADDITIONAL FEE
X$ 9=		OR	X$18=	
X42=		OR	X84=	
+140=		OR	+280=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

AMENDMENT C	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	*	Minus	**	=
Independent	*	Minus	***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				☐

RATE	ADDITIONAL FEE	OR	RATE	ADDITIONAL FEE
X$ 9=		OR	X$18=	
X42=		OR	X84=	
+140=		OR	+280=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20."
***If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3."
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

FORM PTO-875 (Rev. 12/02) *U.S. Government Printing Office: 2003 — 486-278/69151 Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE

US 20020078178A1

(19) United States

(12) Patent Application Publication (10) Pub. No.: US 2002/0078178 A1

Senoh (43) Pub. Date: Jun. 20, 2002

(54) CONTENT DISTRIBUTION CONTROL

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(21) Appl. No.: 09/938,664

(22) Filed: Aug. 27, 2001

(30) Foreign Application Priority Data

Aug. 29, 2000 (JP) 2000-258651

Publication Classification

(51) Int. Cl.[7] G06F 15/16

(52) U.S. Cl. 709/219

(57) ABSTRACT

Content distribution control over a network in an electronic distribution system protects the content copyright while distributing content in a format enabling viewing and enjoyment at the user terminal. The method for controlling content distribution over a network comprises generating content in a first format specification by adding content identification data for identifying specific content to data produced in a first format specification for viewing; sending the content to a network; receiving the content via the network; separating the received content into the content identification data and the data in the first format specification; converting the separated data in the first format specification to data in a different, second format specification; generating content in a second format specification by adding the separated content identification data to the data converted to the second format specification; and then sending the content in the second format specification to a user terminal.

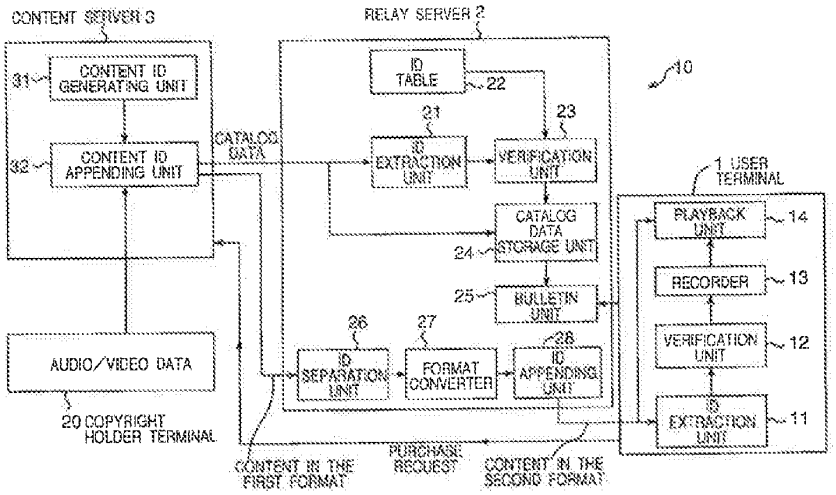
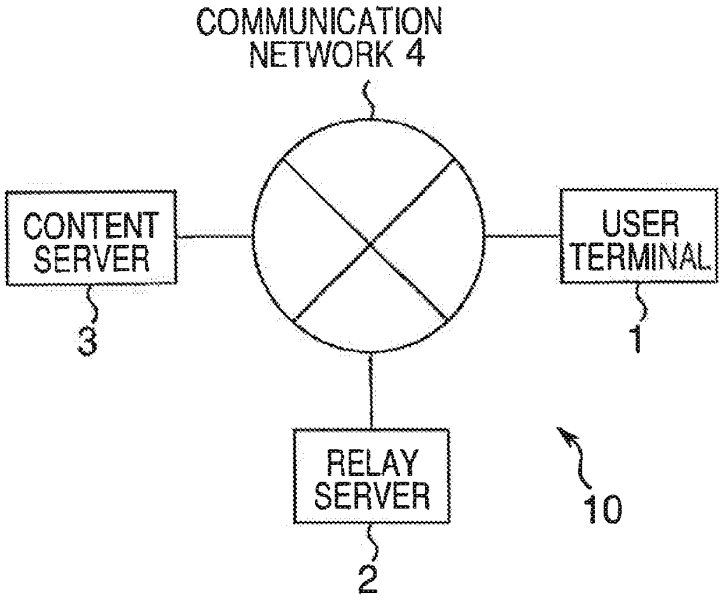


Fig. 1


COMMUNICATION NETWORK 4
CONTENT SERVER
3
USER TERMINAL
1
RELAY SERVER
2
10

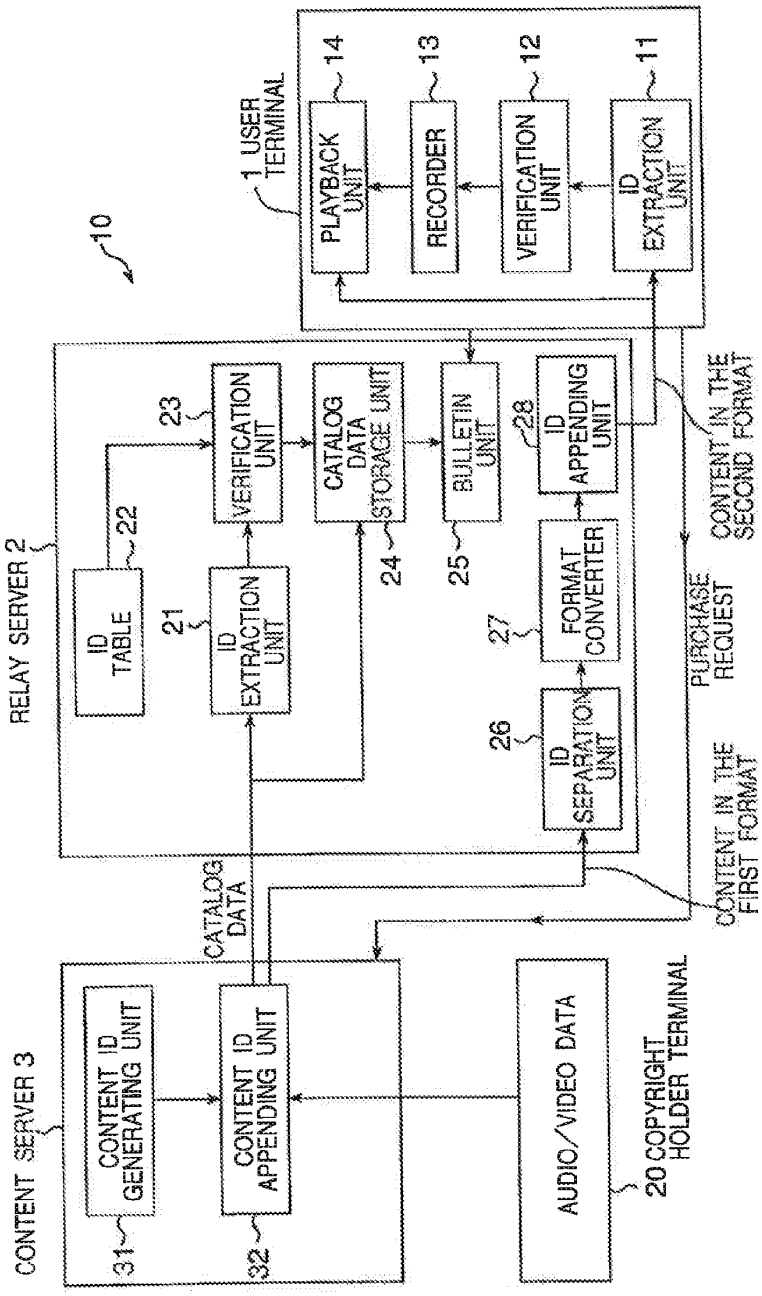

10
1 USER TERMINAL
PLAYBACK UNIT
14
RECORDER
13
VERIFICATION UNIT
12
ID EXTRACTION UNIT
11
RELAY SERVER 2
ID TABLE
22
ID EXTRACTION UNIT
21
VERIFICATION UNIT
23
CATALOG DATA STORAGE UNIT
24
BULLETIN UNIT
25
ID APPENDING UNIT
28
FORMAT CONVERTER
27
ID SEPARATION UNIT
26
CONTENT IN THE SECOND FORMAT
PURCHASE REQUEST
CONTENT IN THE FIRST FORMAT
CATALOG DATA
CONTENT SERVER 3
CONTENT ID GENERATING UNIT
31
CONTENT ID APPENDING UNIT
32
AUDIO/VIDEO DATA
20 COPYRIGHT HOLDER TERMINAL

Fig.2

Fig.3

ID ITEMS	CONTENT 1	CONTENT 2	...
COPYRIGHT HOLDER IDENTIFIER	10001	10054	...
CONTENT IDENTIFICATION CODE		AAAB	...
CONTENT RECORDING DATE	2000.6.17	1999.12.31	...
WHO RECORDED THE CONTENT	TARO YAMASHITA	HANAKO UENO	...
TITLE	BATTLE IN PEBBLE BEACH	COUNTDOWN 2000	...
GENRE	SPORTS	EVENT	...
CONTENT TYPE	FINAL (GOLF TOURNAMENT)	NEW YEAR'S EVE	...
DUPLICATION FEE	$10	$5	...
...	...	...	...
CONTACT ADDRESS FOR THE BUYER	abc@def	ghi@ikl	...
			...

CONTENT ID

Fig.4

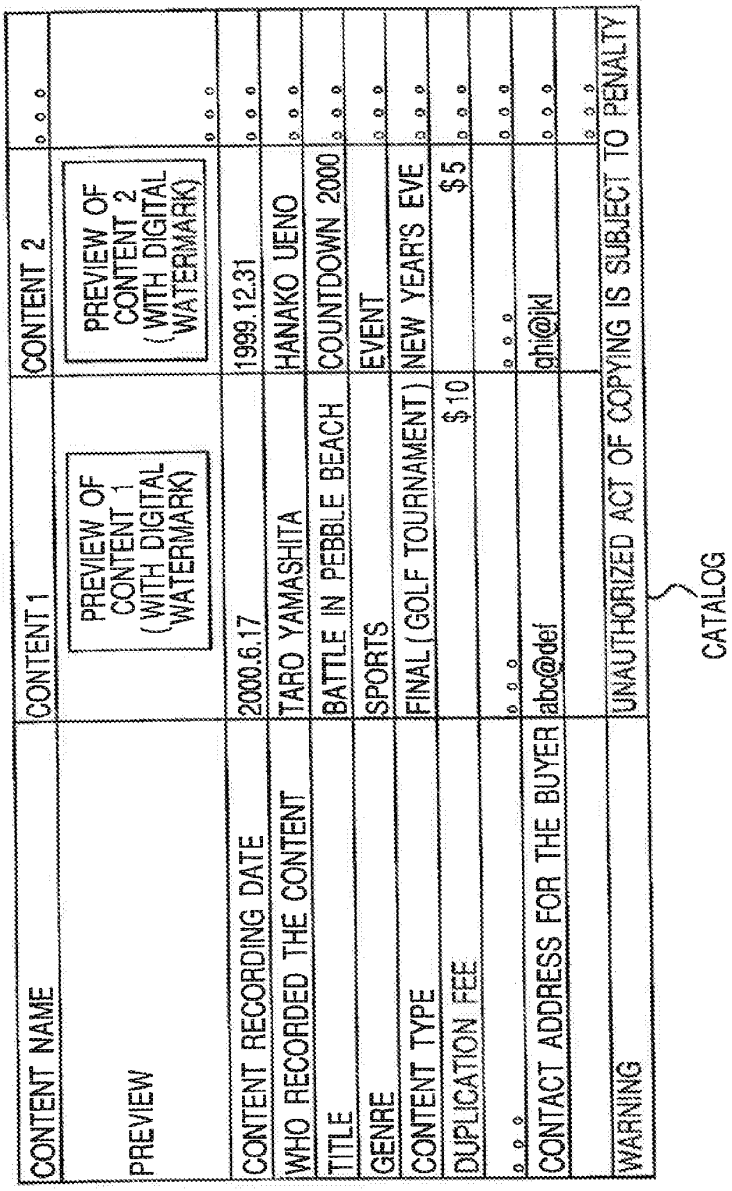

CONTENT NAME
CONTENT 1
CONTENT 2
PREVIEW
PREVIEW OF CONTENT 1 (WITH DIGITAL WATERMARK)
PREVIEW OF CONTENT 2 (WITH DIGITAL WATERMARK)
CONTENT RECORDING DATE
2000.6.17
1999.12.31
WHO RECORDED THE CONTENT
TARO YAMASHITA
HANAKO UENO
TITLE
BATTLE IN PEBBLE BEACH
COUNTDOWN 2000
GENRE
SPORTS
EVENT
CONTENT TYPE
FINAL (GOLF TOURNAMENT)
NEW YEAR'S EVE
DUPLICATION FEE
$10
$5
CONTACT ADDRESS FOR THE BUYER
abc@def
ghi@ikl
WARNING
UNAUTHORIZED ACT OF COPYING IS SUBJECT TO PENALTY
CATALOG

Fig.5

	CONTENT 1	CONTENT 2	CONTENT 3	...
COPYTIGHT HOLDER IDENTIFIER	10001	10054	750009	
CONTENT IDENTIFICATION CODE	—	AAAB	Z3CD	

ID TABLE 22

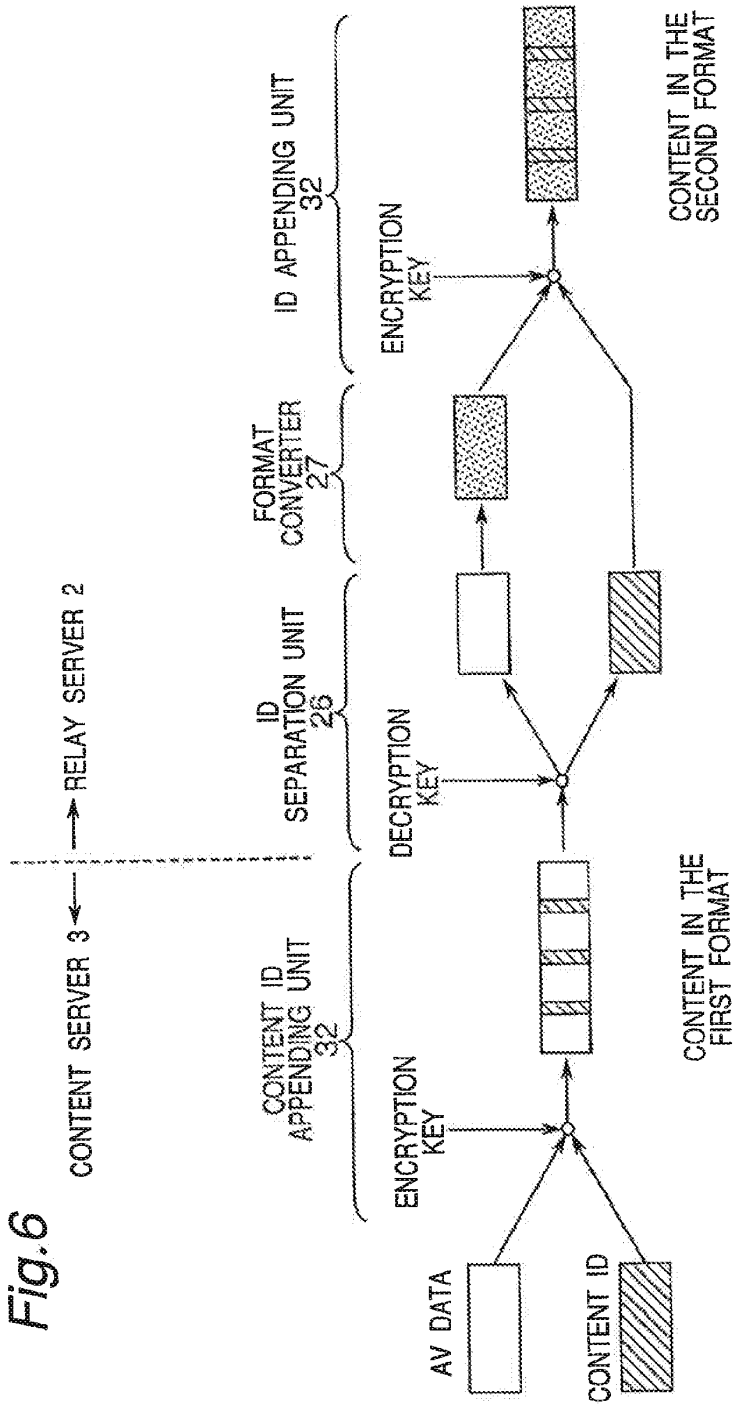
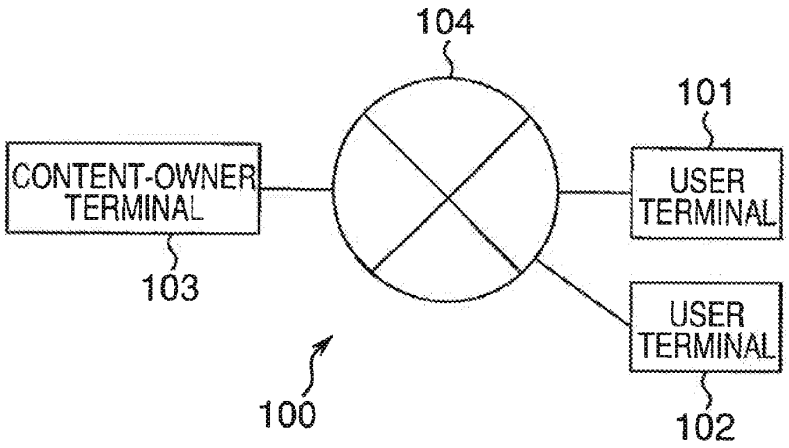

CONTENT SERVER 3
RELAY SERVER 2
CONTENT ID APPENDING UNIT 32
ID SEPARATION UNIT 26
FORMAT CONVERTER 27
ID APPENDING UNIT 32
ENCRYPTION KEY
DECRYPTION KEY
ENCRYPTION KEY
AV DATA
CONTENT ID
CONTENT IN THE FIRST FORMAT
CONTENT IN THE SECOND FORMAT

Fig.6

Fig.7 PRIOR ART



CONTENT DISTRIBUTION CONTROL

BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention

[0002] This invention relates to controlling an electronic distribution system for distributing digital multimedia content, including audio and video, by way of a network.

[0003] 2. Description of Related Art

[0004] FIG. 7 shows a prior art electronic distribution system **100**, which as shown in the figure has plural user terminals **101** and **102** and a content-owner terminal **103**. The plural user terminals **101** and **102** and content-owner terminal **103** are connected to a common network **104**, such as the Internet, whereby they can communicate with each other.

[0005] When content is conventionally distributed using this electronic distribution system **100**, the content owner loads a catalog of the available content onto a web site and solicits users wanting the content. When a user provides credit card information to pay for desired content, the electronic distribution system **100** verifies the credit card information to authenticate the user, and then delivers the requested content to the user.

[0006] More specifically, the content owner publishes a directory of the content that is available for distribution and makes the directory accessible via the network **104**. The published directory is a catalog containing at least titles, content summaries and price information that is uploaded to a web site on the content-owner terminal **103**. When a user of a user terminal **101** wants to obtain particular content, the user connects to the network **104** using the user terminal **101** and accesses the web site where the desired content is located either by using a search engine site to find the web site address or inputting the web site address found from a magazine, for example. If the summary and price of the desired content found in the catalog on the web site are acceptable to the user, the user sends his credit card number and other information to the content-owner terminal **103**. If the content owner successfully verifies the credit card information, the content-owner terminal **103** sends the content to the user terminal **101**.

[0007] The technology described above is described in U.S. Pat. No. 6,055,513, "Method and Apparatus for Intelligent Selection of Goods and Services in Telephonic and Electronic Commerce."

[0008] A problem arises with this prior art electronic distribution system **100** when the specifications of the distributed content differ from the specifications of content that is viewable on the user's terminal or monitor, resulting in the user being unable to enjoy the content. This problem occurs, for example, when the content-owner terminal **103** distributes content in the high definition TV (HDTV) format but the terminal on the user terminal **101**, **102** side can only display content in the standard definition TV (SDTV) format.

[0009] Another problem with this prior art electronic distribution system **100** is that it is not possible to prevent illegal copying of content. More specifically, it is not possible to prevent the user of a user terminal **101** from loading purchased content to the user's own web site without the permission of the content owner so that a third party (such as the user of user terminal **102**) can copy the content from the first user's web site either for a fee or for free. This act subjects the producer and legal owner of the content to significant loss of income and is piratical.

SUMMARY OF THE INVENTION

[0010] An object of this invention is therefore to provide an electronic distribution system that can protect the copyright of the content and also provide content in a format that can be viewed on the user terminal.

[0011] To achieve these objects, a method according to the present invention for controlling content distribution over a network has steps of generating content in a first format specification by adding content identification data identifying specific content to data produced in a first format specification for viewing; sending the content to a communication network; receiving the content via the communication network; separating the received content into the content identification data and the data in the first format specification; converting the separated data in the first format specification to data in a second format specification that is different from the first format specification; generating content in a second format specification by adding the separated content identification data to the data converted to the second format specification; and sending the content in the second format specification to a user terminal.

[0012] The objects of the invention can also be achieved by writing the content distribution control method of the invention as a computer-executable content distribution control program.

[0013] These objects can yet further be achieved with a recording medium storing this content distribution control program.

[0014] Yet further, the objects of the invention can be achieved with a system according to the present invention for controlling content distribution over a network, the system having a first identification data adding unit for generating content in a first format specification by adding content identification data for identifying specific content to data produced in a first format specification for viewing, and then sending the content to a communication network, an identification data separating unit for receiving the content from the first identification data adding unit via the communication network, and separating the received content into the content identification data and the data in the first format specification; a converter for converting data in the first format specification separated by the identification data separating unit to data in a second format specification that is different from the first format specification; and a second identification data adding unit for generating content in a second format specification by adding the content identification data separated by the identification data separating unit to the data to the data converted to the second format specification by the converter, and then sending the content in the second format specification to a user terminal.

[0015] By converting content from a first format specification to a second format specification and sending the reformatted content to a viewer (user) terminal, the content distribution system of the present invention enables a user to enjoy content in the format of a display device that is different from the specifications of the user terminal.

[0016] In addition, by adding the identification data inserted to content in the first format specification to the content converted to the second format specification, the rights of the content owner can be protected even after the format of the content has been changed.

[0017] Yet further, content ID appropriate to content in the second format specification can be achieved by converting the content ID extracted from content in the first format specification according to the conversion to the second format and then adding the converted content ID to the content in the second format.

[0018] A drop in the quality of content in the second format can also be prevented by converting content from the first to the second format after removing the content ID from the content in the first format.

[0019] Other objects and attainments together with a fuller understanding of the invention will become apparent and appreciated by referring to the following description and claims taken in conjunction with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0020] These and other object and features of the present invention will become clear from the following description taken in conjunction with the preferred embodiments thereof with reference to the accompanying drawings, in which:

[0021] **FIG. 1** is a diagram showing the configuration of a content distribution system according to a preferred embodiment of the present invention;

[0022] **FIG. 2** is a block diagram showing a specific configuration of this content distribution system;

[0023] **FIG. 3** is an example of content identification data;

[0024] **FIG. 4** is an example of a catalog containing plural catalog data entries;

[0025] **FIG. 5** is an example of an identification data table;

[0026] **FIG. 6** is the concept of the format conversion process; and

[0027] **FIG. 7** is a prior art electronic distribution system.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0028] The preferred embodiments of the present invention are described below with reference to the accompanying figures wherein parts having the same reference numeral also have the same function.

[0029] **FIG. 1** shows the configuration of a content distribution system **10** according this preferred embodiment of the invention. Content distribution system **10** has a user terminal **1**, relay server **2**, and content server **3**. The user terminal **1**, relay server **2**, and content server **3** are each connected to a communication network **4**, such as the Internet, through which they can communicate with each other. With content distribution system **10**, the content server **3** provides the content available for distribution (selling) on the relay server **2**. Users can view the content published on the relay server **2** and purchase the desired content. User purchase requests are sent to the content server **3**. The content server **3** then sends the requested content to the relay server **2** in a first format specification. The relay server **2** converts the content received from the content server **3** in the first format to a second format specification, and sends the reformatted content to the user terminal **1**. It will be obvious to one with ordinary skill in the related art that while only one user terminal **1** is shown in the figure, plural user terminals can be connected.

[0030] The configuration of this content distribution system **10** is described in greater detail with reference to **FIG. 2**. **FIG. 2** is a block diagram showing a specific configuration of the content distribution system **10**. Note that for convenience the communication network **4** is not shown. This configuration is described next in conjunction with data flow.

[0031] The content producer first produces audio and/or video (AV) data (multimedia data) according to a particular digital specification. This multimedia data is what the user views and listens to, and is commonly and herein referred to as "content." It will also be noted that multimedia data to which content identification data (hereinafter referred to as "content ID" and further described below) has been added for copyright protection is also referred to herein as content. It will be further noted that "data" when used alone means multimedia data to which content ID has not been added.

[0032] The content producer is typically the copyright holder. The content could be only video or only audio. In order to distribute content, the copyright holder sends the content from the copyright holder terminal **20** to the content server **3**. The copyright holder terminal **20** is a computer terminal whereby the copyright holder transmits data. The copyright holder terminal **20** and content server **3** could be the same computer.

[0033] The content server **3** has a content identification data generating unit **31** and a content identification data appending unit **32** (hereinafter referred to as "content ID generating unit **31**" and "content ID appending unit **32**", respectively). The content ID generating unit **31** generates the content ID according to a specified process. The content ID is uniquely and uniformly assigned in order to identify the content.

[0034] **FIG. 3** shows an example of the content ID. As shown in **FIG. 3**, the content ID preferably contains the following information in a specified format: a copyright holder identifier, content identification code, content recording date, who recorded the content, title, genre, content type, duplication fee, and a contact address for the buyer.

[0035] The copyright holder identifier is uniformly and uniquely assigned to each copyright holder, and enables the owner of the copyright to the content to be identified. The copyright holder identifier is transmitted with the content from the copyright holder terminal **20** sending the content, or the sender is identified by the content server **3**.

[0036] The content identification code is a unique value, and is added when the content is commercial content produced by a production company or other content creation company for resale purposes. The content identification code of content **2** in **FIG. 3** is AAAB. The content ID generating unit **31** (**FIG. 2**) generates the content identification code using not only the content creation date, but also the hour, minute, second, and even millisecond data as parameters. If it is desirable to uniquely identify content **2**

worldwide, the producer can apply to an organization for assigning identification codes that are common worldwide and ask for the unique content identification code AAAB for use with the particular content. As will be further described below, this content identification code and copyright holder identifier can be used to determine if content is an illegal copy.

[0037] The name of the recorder, title, and other information is input by the producer.

[0038] Returning again to **FIG. 2**, the content ID appending unit **32** embeds the content ID generated by the content ID generating unit **31** as a digital watermark in the content received from the copyright holder terminal **20**.

[0039] A digital watermark is characterized primarily in that the digital watermark is not lost when the copyrighted material (audio or video) is edited or compressed or expanded; is embedded at a level that is not detectable to the human eye or ear; and the original quality of the copyrighted material is maintained even when a digital watermark is embedded. The content ID is thus integral to and inseparable from the content, overwriting the content ID can be prevented, and the content ID can be used to control playback and recording of the content.

[0040] Various methods can be used to embed a digital watermark. One method is to randomly add the digital watermark data to a specific frequency component of the content. More specifically, the signal containing embedded digital watermark data is

$$ai+xi*ci \quad (1)$$

[0041] where ai is the specific frequency component of the content where the digital watermark is inserted, ci is a random value of +1 or −1, and xi is the value of the content ID that is embedded as the digital watermark.

[0042] This results in content having the content ID superimposed as a digital watermark on the content. It will also be obvious that when the content ID is superimposed as digital watermark data to the content from the copyright holder terminal **20**, the content ID can be encrypted before being superimposed. In this case the value of xi in equation 1 is the value of the encrypted content ID. Either the content ID generating unit **31** or the content ID appending unit **32** can process the encryption. Using encrypted content ID as the digital watermark data also makes unauthorized decryption of the information by a user more difficult and thus more reliably protects the copyright.

[0043] The content server **3** then generates and sends catalog data for the content to the relay server **2** in order to market the content to a wider audience. The catalog data could contain previews of content highlights, a copyright notice, the title, content type, price, and where to contact to purchase the content.

[0044] Referring again to **FIG. 2**, the relay server **2** is a server computer accessible from the network and storing a compiled catalog of plural catalog data entries. If the content contains video, the relay server **2** preferably enables the content highlights to be previewed. If the content is audio (music), a selection of a particular length could be provided as a preview. The copyright notice and warning about illegal act of copying is likewise displayed.

[0045] A sample catalog compiling plural catalog data entries is shown in **FIG. 4**. The catalog can be posted to a common bulletin board (electronic bulletin board) accessible from the network. Users can then select desired content by accessing the bulletin board on the relay server **2** and viewing the catalog. It should be further noted that the content ID is also contained in the preview data extracted from the content.

[0046] The configuration of the relay server **2** is described next. As shown in **FIG. 2**, the relay server **2** has an identification data extraction unit **21** (hereinafter referred to as "ID extraction unit **21**"), identification data table **22** (hereinafter referred to as "ID table **22**"), verification unit **23**, catalog data storage unit **24**, bulletin board **25**, identification data separation unit **26** (hereinafter referred to as "ID separation unit **26**"), format converter **27**, and identification data appending unit **28** (hereinafter referred to as "ID appending unit **28**").

[0047] The ID extraction unit **21** extracts the identification data added to the content from the preview part used in the catalog data. The identification data referred to here is the copyright holder identifier ([10001], [10054] in **FIG. 4**) and the content identification code (AAAB in **FIG. 4**), that is, the digital watermark data added randomly to the specific frequency component.

[0048] The specific method of extracting the identification data is described below. That is, the content is first passed through the same bandpass filter used to insert the digital watermark to extract the frequency component where the identification data is embedded. The same random number used for digital watermark insertion is multiplied with the frequency component, and the result is passed through a filter for extracting only the DC component. As described above with reference to equation 1, the signal containing embedded digital watermark data can be written as [ai+xi*ci] where ai is the specific frequency component of the content where the digital watermark is inserted, ci is a random value of +1 or −1, and xi is the value of the content ID that is embedded as the digital watermark. The value after the ID extraction unit **21** is multiplied by random number ci is therefore

$$(ai+xi*ci)*ci=ai*ci+xi*(ci^2) \quad (2).$$

[0049] When public key encryption is used random number ci is encrypted using the public key and sent only to the relay server **2** and the user terminal of the authorized user. The relay server **2**, for example, then decrypts random ci using a unique secret (private) key. More specifically, random number ci is +1 or −1, so the DC component of ai*ci is 0 and ci^2=1. Filtering this signal with the dc component extraction filter results in (ai+xi*ci)*ci=xi, and the identification data embedded as the digital watermark can be extracted.

[0050] If the content ID used as the digital watermark was first encrypted, a key is needed for decryption. This key can be obtained from the content server **3**. The ID extraction unit **21** uses this key to decode the content ID. If public key encryption is used, the public key used for encryption and the private key used for decryption are both required.

[0051] The identification data can alternatively be encrypted as (xi+ci) where ci is randomly +1 or −1 and xi is the value of the content ID used as the digital watermark and (+) indicates an exclusive OR. By adding ci to xi+ci, the result is

$$(xi+ci)+ci=xi+(ci+ci)=xi+0=xi \quad (3)$$

[0052] and the ID extraction unit **21** can extract the identification data. As noted above, the random number ci is sent only to the relay server **2** and user terminal of an authorized user using public key encryption.

[0053] It will also be noted that encryption and decryption using the copyright holder identifier can also be accomplished by multiplying the copyright holder identifier and a random number or other method.

[0054] The ID table **22** stores the copyright holder identifier and content identification code as a set. **FIG. 5** shows an example of the ID table **22**. The information stored to the ID table **22** is the content identification code and copyright holder identifier information used in the catalog data that is sent from the content server **3** before the catalog data is sent to the relay server **2**.

[0055] The verification unit **23** shown in **FIG. 2** verifies if the combination of copyright holder identifier and content identification code extracted by the ID extraction unit **21** is correct. More specifically, the verification unit **23** compares the copyright holder identifier and content identification code combination extracted by the ID extraction unit **21** with the copyright holder identifier and content identification code combinations stored in the ID table **22**, and if a match is found knows that the content is not an illegal copy. This means that the verification unit **23** determines whether the catalog data and further the content sent from the content server **3** is information that was sent by the copyright holder. If the combination is confirmed to be legal, the verification unit **23** allows the catalog data storage unit **24** to store the catalog data. The catalog data storage unit **24** then stores the catalog data sent from the content server **3**. Distribution of the content is thus allowed, and the content catalog is posted to the bulletin board **25**. The catalog shown in **FIG. 4** contains content **1** and content **2**.

[0056] The verification unit **23** detects an illegal copy if the combination of copyright holder identifier and content identification code extracted by the ID extraction unit **21** does not match a combination stored in the ID table **22**, or if the content ID is not detected, and the catalog data is therefore not posted to the bulletin board **25**. This is because there is a high probability that it is an illegal copy of existing commercial content. In this case the user requesting that the content be posted (the user terminal of the general user that made the illegal copy, for example) is notified that the content will not be posted. This results in illegally copied content not being posted to the bulletin board **25**. To forcefully protect against illegal copying, the legal holder of the content copyright could also be notified that there was an attempt to load an illegal copy of the copyrighted content. It will be noted that by polling the organization assigning common identification codes worldwide to confirm whether a copyright holder identifier and content identification code combination is correct, the verification unit **23** can determine the authenticity (legality) of the identification data.

[0057] The user terminal **1** is described next. The user terminal **1** is the terminal or computer whereby a user views the bulletin board **25** containing the catalog data, views previews of content from the catalog data on the bulletin board **25**, and views or listens to the content. If there is content that the user wishes to purchase, the user sends a purchase request to the content provider (marketer or copyright holder of the content on the content server **3**). This request contains the e-mail address or other information specifying the content provider or other party marketing the content. When the content server **3** receives such a purchase request, it sends a request for credit card information, electronic money, or other payment method to the user terminal **1**. The content server **3** also requests the format supported by the user terminal **1** for viewing the content.

[0058] When the credit card information and format supported by the user terminal **1** is received, the content server **3** verifies the credit card information, electronic money, or other payment information, and then sends the content desired by the user to the relay server **2**. If the format of the content received from the content server **3** is the same as format specified by the user, the relay server **2** simply sends the content directly to the user terminal **1**.

[0059] If the format of the content sent to the relay server **2** differs from the format required by the user terminal **1**, the relay server **2** converts the received format to the format viewable by the user terminal **1**, and then transmits the content to the user terminal **1**. The term "viewable" means that the user terminal **1** supports the format in which the content will be reproduced, or can display the content at the performance of the output display (the display performance of the monitor) of the user terminal **1**. This process is run primarily by the ID separation unit **26**, format converter **27**, and ID appending unit **28**.

[0060] The primary steps of the process of this invention for format conversion are described next with reference to **FIG. 6**. While the format specification includes the encoding method, resolution, and other parameters, a process for converting content in MPEG-2 main profile, high level format (such as HDTV format) to content in MPEG-4 simple profile, level 0 format (such as Quarter Common Intermediate Format (QCIF)) is used by way of example. This conversion process enables the user to view content using a cellular phone or other user terminal **1** on which content cannot be viewed in the normal TV format.

[0061] **FIG. 6** shows the concept of this format conversion process, which is described in sequence below. The copyright holder produces MPEG-2 main profile, high level AV data conforming to the HDTV format, and sends this data to the content server **3**. The content ID appending unit **32** of the content server **3** generates content in first format by adding content ID as a digital watermark encrypted using a public key encryption scheme to the AV data. The content server **3** sends content in this first format to the relay server **2**.

[0062] Using the private decryption key, the ID separation unit **26** of the relay server **2** separates the content ID from the content, and thus extracts the content and the content ID. More specifically, it separates the content ID from the content formatted to this first format specification. The AV data is then obtained by subtracting the content ID from the first format data.

[0063] It should be noted that the process described below can continue by simply extracting the content ID from the content without completely separating the content ID and

AV data. In this case, however, plural different digital watermarks will be added to the content, and content quality will likely deteriorate.

[0064] The format converter **27** then downsamples the MPEG-2 main profile, high level format AV data obtained by the ID separation unit **26** to MPEG-4 simple profile, level 0 format AV data. Using the procedure described above for adding a digital watermark, the ID appending unit **28** of the relay server **2** then adds the extracted content ID to the converted AV data to output data formatted to the second format specification. The ID appending unit **28** sends the reformatted content to the user terminal **1** (FIG. 1).

[0065] It will be noted that the extracted content ID is re-inserted to the reformatted content as the digital watermark without modification in the above example. It will be obvious, however, that the format converter **27** could delete or modify part of the content ID before inserting it as the digital watermark to the AV data. For example, the original content ID could contain information indicating that the content is formatted to the first format specification, and the format converter **27** could modify the content ID inserted to the AV data to indicate that content has been reformatted to the second format specification. In this case it will still be possible to determine that content was illegally obtained even if a third party reformats the content because the digital watermark cannot be changed by a third party and the content ID (digital watermark) will still contain information indicating the first format specification even though the content has been reformatted to the second specification.

[0066] It will also be obvious that different methods and encryption keys can be used to add or insert the digital watermark data.

[0067] It will also be obvious that while conversion from an MPEG-2 main profile, high level format to the MPEG-4 simple profile, level 0 format is described above, the invention shall not be so limited as other conversions will also be possible. Irrespective of whether the content is moving picture data or still image data, conversion from one format to another format such as shown in the following Table 1 is possible.

TABLE 1

Content Type	Format	Application, features
Video	MPEG-2 video, main profile, high level	HDTV High Resolution
	MPEG-2 video, main profile, main level	Standard TV Medium Resolution
	MPEG-1 video	PC, karaoke
	MPEG-4 video, simple profile, level 0	Cellular phone display
	MPEG-4 video, core profile, level 2	PC, Internet
	ITU-T H.26L	Telephone
	ITU-T H.263	Wire telephony
	ITU-T H.261	Wire telephony
	Windows Media Video	PC, Internet
	Real Video	PC, Internet
	Motion JPEG	Cameras
	Motion JPEG 2000	Cameras (future)
Still Image	JPEG	Cameras
	JPEG 2000	Cameras (future)
	GIF	PC

[0068] Format conversion is possible, for example:

[0069] between different moving picture (video) formats (such as from a MPEG-2 video, main profile, high level format to a MPEG-2 video, main profile, main level format);

[0070] between different still image formats (such as from JPEG to GIF);

[0071] from a video format to a still image format (such as from a MPEG-2 video, main profile, high level format to the JPEG 2000 format); and

[0072] from a still image format to a video format (such as from still images in plural JPEG formats to a motion JPEG format, or converting plural GIF format still images to a frame interpolated MPEG-1 video format). It will be noted that the formats shown in the above table are known from the literature, and description of specific conversion algorithms is therefore omitted.

[0073] As described above, the relay server **2** can generate content containing a digital watermark and in a format that is viewable on the user terminal **1**. The content can then be sent to the user terminal **1** so that the user can enjoy viewing the content while simultaneously appropriately protecting the copyright of the content owner.

[0074] The configuration of the user terminal **1** is described next. The user terminal **1** could be a personal computer, cellular phone, or television or video deck having a communication function. The user terminal **1** has an identification data extraction unit **11** (hereinafter referred to as "ID extraction unit **11**"), verification unit **12**, recorder **13**, and playback unit **14**.

[0075] When receiving content in the second format from the relay server **2** begins, the ID extraction unit **11** of the user terminal **1** reads the content ID embedded in the content. It will be noted that only part of the content is received at this time. Based on the read identification data, the verification unit **12** then confirms the authenticity of the content using the same method used by the verification unit **23** of the relay server **2**. If the content is verified, the verification unit **12** permits recording the content to the recorder **13**.

[0076] If content verification fails because the received content is not an authorized copy, for example, or the content ID is not detected, receiving the content is stopped. It will also be obvious that the verification unit **12** could verify the content after reception is completed. If verification fails in this case, the verification unit **12** prevents the playback unit **14** from reproducing and outputting the content, and thus prevents the viewer from seeing the content output on the display. This means that even if a user completely downloads an illegal copy to the user's terminal, the content will not be presented. The copyright is therefore protected.

[0077] As will be known from the preceding description of the present invention, the relay server **2** converts the format specification of the content from a first format to a second format if the format (first format specification) of the content stored on the content server **3** is not the same as the format (second format specification) required for viewing on the user terminal **1**. This assures that the user of the user terminal **1** can enjoy the content. In addition, the content ID inserted as a digital watermark to the content of the first format is not lost and is also contained in the content after conversion to the second format. The content ID contains a

copyright holder identifier enabling the content owner to be identified, and a content identification code identifying the content. Whether content is an illegal copy can be determined based on the content ID, and the copyright of the content owner can therefore be simultaneously protected.

[0078] In the preferred embodiment of the invention described above the content ID appending unit 32 of the content server 3 inserts the content ID to the AV data sent from the copyright holder. This operation can, however, be performed by the relay server 2. In this case the content server 3 sends the content and the content ID to the relay server 2. The relay server 2 could also fetch or generate the content ID.

[0079] The format converter 27 of the relay server 2 also converts content from a first format specification to a second format specification, but a conversion program could be contained in the user terminal 1 for conversion to the desired format specification.

[0080] Purchase requests are also sent directly from the user terminal 1 to the content server 3 in the above embodiment, but could also be sent through the relay server 2 to the content server 3. In this case the content server 3 only processes requests received from the relay server 2, thus simplifying management.

[0081] The processing operations of the various components of the above described content distribution system can also be written as a computer program causing a computer to execute the various processes. Such a computer can be recorded to a CD, DVD, or other optical disc, to a floppy disk or other magnetic storage medium, or to flash memory or other semiconductor storage medium. The computer program could yet further be distributed as an electric signal via the Internet or other network.

[0082] Although the present invention has been described in connection with the preferred embodiments thereof with reference to the accompanying drawings, it is to be noted that various changes and modifications will be apparent to those skilled in the art. Such changes and modifications are to be understood as included within the scope of the present invention as defined by the appended claims, unless they depart therefrom.

[0083] The present disclosure relates to subject matter contained in priority Japanese Patent Application No. 2000-258651, filed on Aug. 29, 2000, the contents of which is herein expressly incorporated by reference in its entirety.

What is claimed is:

1. A method for controlling content distribution over a network, the method comprising:

generating content in a first format specification by adding content identification data for identifying specific content to data produced in a first format specification for viewing;

sending the content to a network;

receiving the content via the network;

separating the received content into the content identification data and the data in the first format specification;

converting the separated data in the first format specification to data in a second format specification that is different from the first format specification;

generating content in a second format specification by adding the separated content identification data to the data converted to the second format specification; and

sending the content in the second format specification to a user terminal.

2. A method for controlling content distribution as described in claim 1, wherein:

the content identification data contains information indicating the content format; and

the converting comprises converting the information indicating the content format according to the conversion of data from the first format specification to the second format specification.

3. A method for controlling content distribution as described in claim 1, wherein the separating comprising:

obtaining the content identification data from the content; and

obtaining the data in the first format specification by subtracting the obtained content identification data from the content.

4. A method for controlling content distribution as described in claim 1, further comprising in the user terminal:

extracting the content identification data from content in the second format specification; and

reproducing the content in the second format specification if the content identification data is correctly extracted.

5. A system for controlling content distribution over a network, the system comprising:

a first identification data adding unit for generating content in a first format specification by adding content identification data for identifying specific content to data produced in a first format specification for viewing and then sending the content to a network;

an identification data separating unit for receiving the content from the first identification data adding unit via the network, and separating the received content into the content identification data and the data in the first format specification;

a converter for converting data in the first format specification separated by the identification data separating unit to data in a second format specification that is different from the first format specification; and

a second identification data adding unit for generating content in a second format specification by adding the content identification data separated by the identification data separating unit to the data to the data converted to the second format specification by the converter, and then sending the content in the second format specification to a user terminal.

6. A system for controlling content distribution as described in claim 5, wherein:

the content identification data contains information indicating the content format; and

the converter also converts the information indicating the content format according to the conversion of data from the first format specification to the second format specification.

7. A system for controlling content distribution as described in claim 5, wherein:

the identification data separating unit obtains the content identification data from the content, and separates the content identification data and the data to be viewed by subtracting the obtained content identification data from the content.

8. A system for controlling content distribution as described in claim 5, wherein:

a content server having the first identification data adding unit and receiving data to be viewed produced in a first format specification from a data creator terminal,

a relay server having the identification data separating unit, converter, and second identification data adding unit, and

a user terminal for receiving content in the second format specification from the second identification data adding unit of the relay server,

are connected to the network.

9. A system for controlling content distribution as described in claim 5, wherein:

the user terminal extracts the content identification data from content in the second format specification, and reproduces the content in the second format specification if the content identification data is correctly extracted.

10. A computer-executable program for controlling content distribution, the program comprising:

generating content in a first format specification by adding content identification data for identifying specific content to data produced in a first format specification for viewing;

sending the content to a network;

receiving the content via the network;

separating the received content into the content identification data and the data in the first format specification;

converting the separated data in the first format specification to data in a second format specification that is different from the first format specification;

generating content in a second format specification by adding the separated content identification data to the data converted to the second format specification; and

sending the content in the second format specification to a user terminal.

11. A computer-executable program for controlling content distribution as described in claim 10, wherein:

the content identification data contains information indicating the content format; and

the converting comprising converting the information indicating the content format according to the conversion of data from the first format specification to the second format specification.

12. A computer-executable program for controlling content distribution as described in claim 10, wherein the separating comprises:

obtaining the content identification data from the content; and

obtaining the data in the first format specification by subtracting the obtained content identification data from the content.

13. A computer-executable program for controlling content distribution as described in claim 10, further comprising in the user terminal:

extracting the content identification data from content in the second format specification, and

reproducing the content in the second format specification if the content identification data is correctly extracted.

14. A recording medium for recording a computer-executable program for controlling content distribution as described in claim 10.

15. A method for relaying content distributed over a network, the method comprising:

receiving content via the network, where the content is generated in a first format specification by adding content identification data for identifying specific content to data produced in a first format specification for viewing;

separating the received content into the content identification data and the data in the first format specification;

converting the separated data in the first format specification to data in a second format specification that is different from the first format specification;

generating content in a second format specification by adding the separated content identification data to the data converted to the second format specification; and

sending the content in the second format specification to a user terminal.

16. A method for relaying content distributed as described in claim 15, wherein the content identification data contains information indicating the content format and the converting includes converting the content identification data according to the conversion of data from the first format specification to the second format specification.

* * * * *

US006035339A

United States Patent [19]

Agraharam et al.

[11] Patent Number: 6,035,339

[45] Date of Patent: *Mar. 7, 2000

[54] **NETWORK INFORMATION DELIVERY SYSTEM FOR DELIVERING INFORMATION BASED ON END USER TERMINAL REQUIREMENTS**

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[73] Assignee: **AT&T Corporation**, New York, N.Y.

[*] Notice: This patent issued on a continued prosecution application filed under 37 CFR 1.53(d), and is subject to the twenty year patent term provisions of 35 U.S.C. 154(a)(2).

[21] Appl. No.: **08/816,234**

[22] Filed: **Mar. 13, 1997**

[51] **Int. Cl.**[7] **G06F 13/00**

[52] **U.S. Cl.** **709/246**; 709/228; 709/230

[58] **Field of Search** 364/140; 395/126; 709/246, 228, 230

[56] **References Cited**

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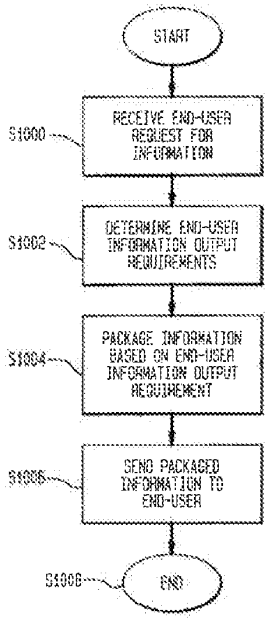
Primary Examiner—Le Hien Luu

Attorney, Agent, or Firm—Oliff & Berridge, PLC

[57] **ABSTRACT**

A network information delivery system automatically determines end-user information output requirements based on predetermined data corresponding to each requesting end-user terminal. A user profile is maintained in a database either associated with a network information delivery system or with the end-user terminal and is accessed by the network information delivery device. If the network information delivery device has authority to access the end-user terminal, a program may be downloaded to the end-user terminal to determine the exact end-user terminal configuration. The program executing in the end-user terminal returns to the network information delivery device a user profile containing the end-user terminal capabilities so that the requested information may be formatted and delivered to the end-user in an optimal manner. The information to be delivered to end-users may be pre-stored in predetermined formats. The predetermined formats may be determined based on a volume of requests and the characteristic of the information. The information may also be stored in a generic format so that packaging the information for a specific user may be efficiently and timely performed.

25 Claims, 8 Drawing Sheets



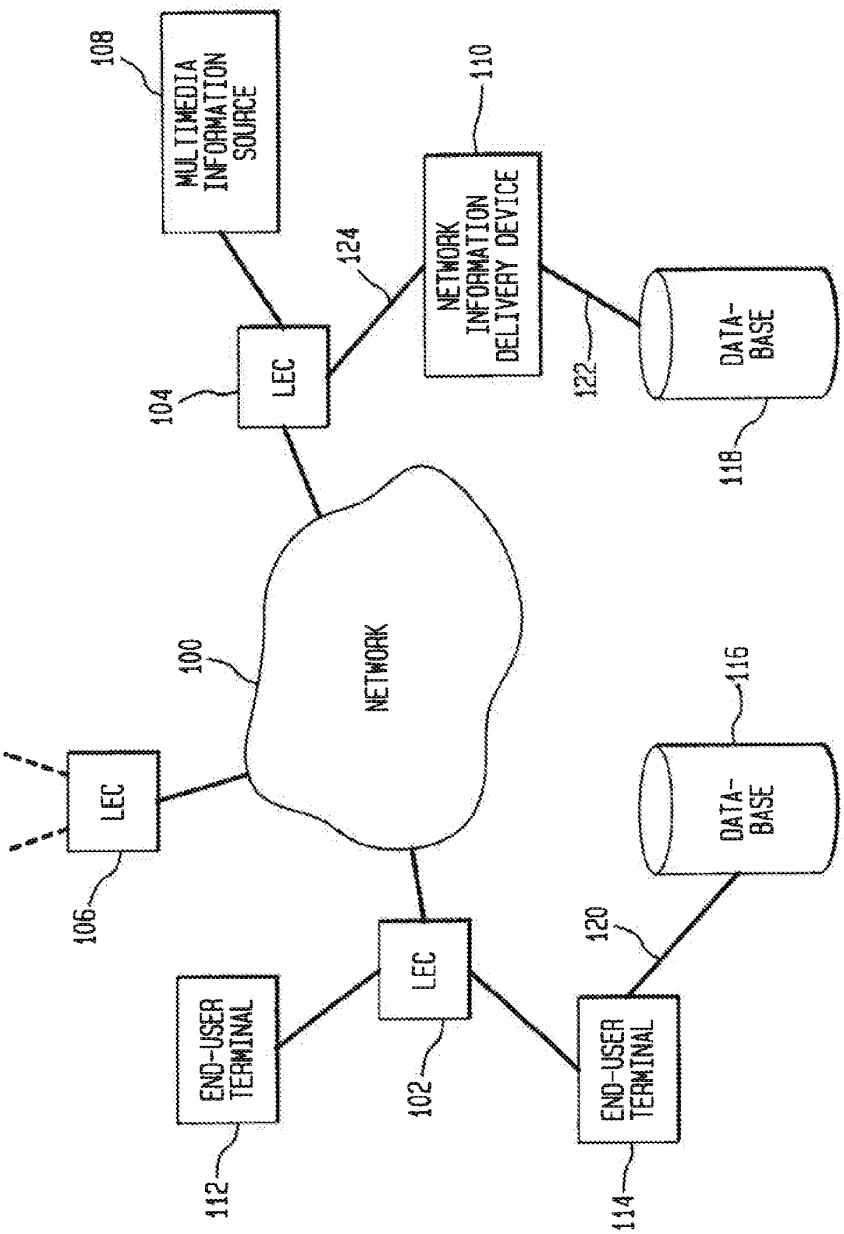

MULTIMEDIA INFORMATION SOURCE
108
NETWORK INFORMATION DELIVERY DEVICE
110
124
LEC
104
DATA-BASE
122
118
NETWORK
100
LEC
106
DATA-BASE
116
120
LEC
102
END-USER TERMINAL
112
END-USER TERMINAL
114

FIG. 1

FIG. 2

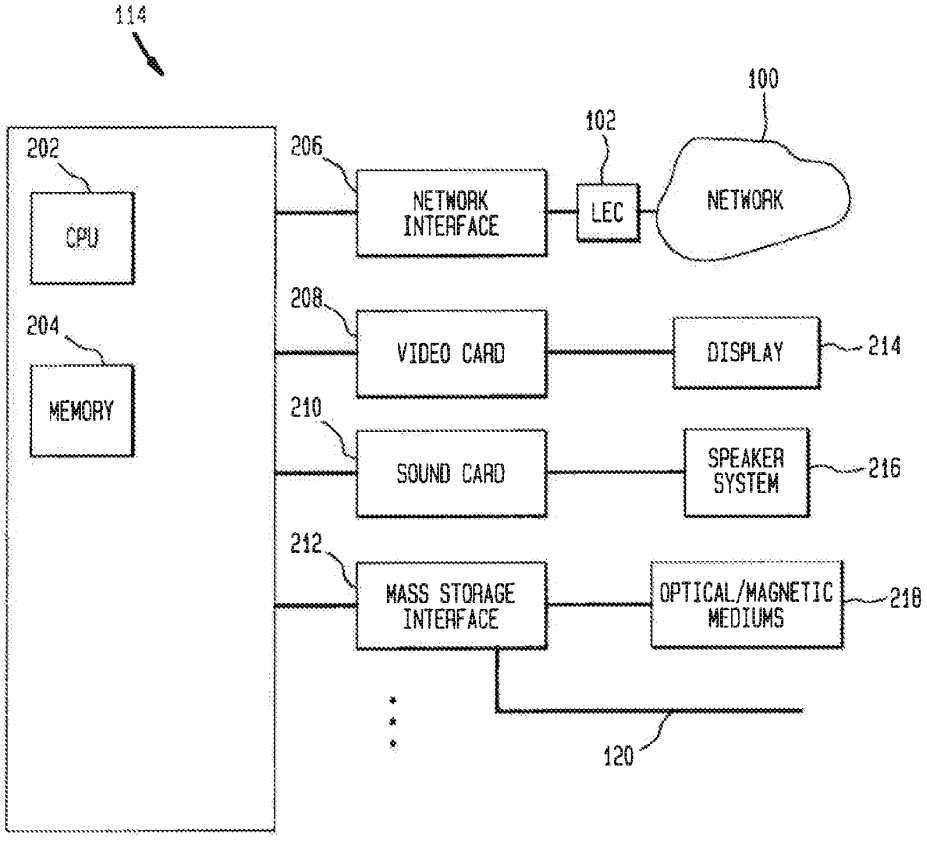

114
100
102
202
206
CPU
NETWORK INTERFACE
LEC
NETWORK
208
204
VIDEO CARD
DISPLAY
214
MEMORY
210
SOUND CARD
SPEAKER SYSTEM
216
212
MASS STORAGE INTERFACE
OPTICAL/MAGNETIC MEDIUMS
218
120

FIG. 3

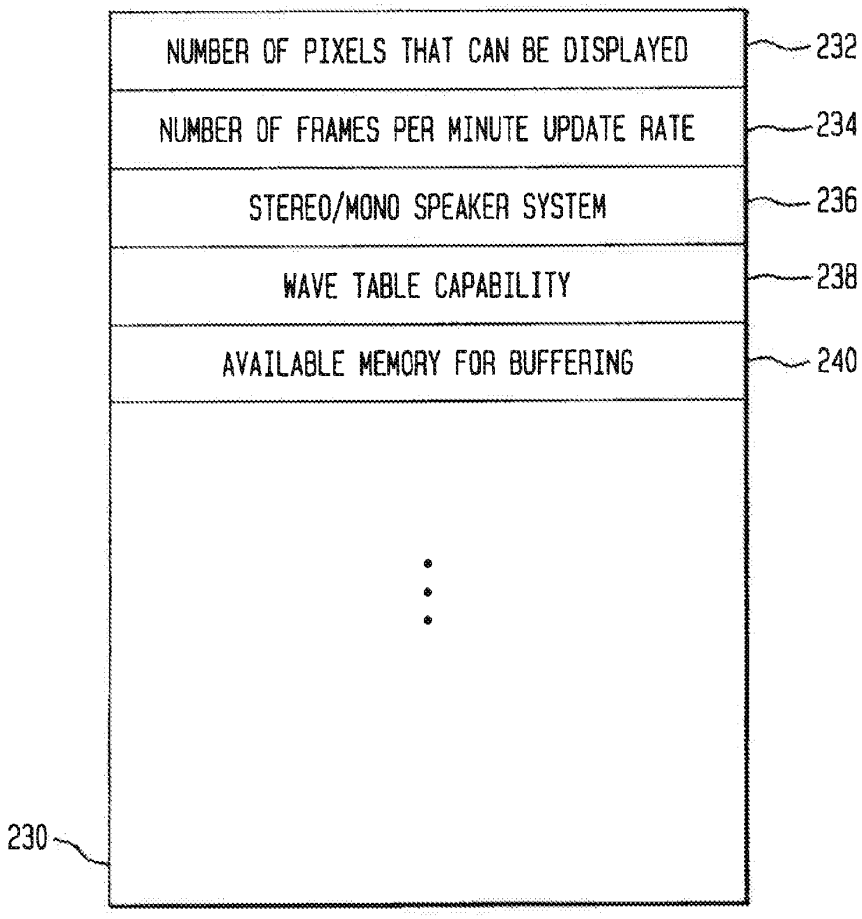

NUMBER OF PIXELS THAT CAN BE DISPLAYED
232
NUMBER OF FRAMES PER MINUTE UPDATE RATE
234
STEREO/MONO SPEAKER SYSTEM
236
WAVE TABLE CAPABILITY
238
AVAILABLE MEMORY FOR BUFFERING
240
230

FIG. 4

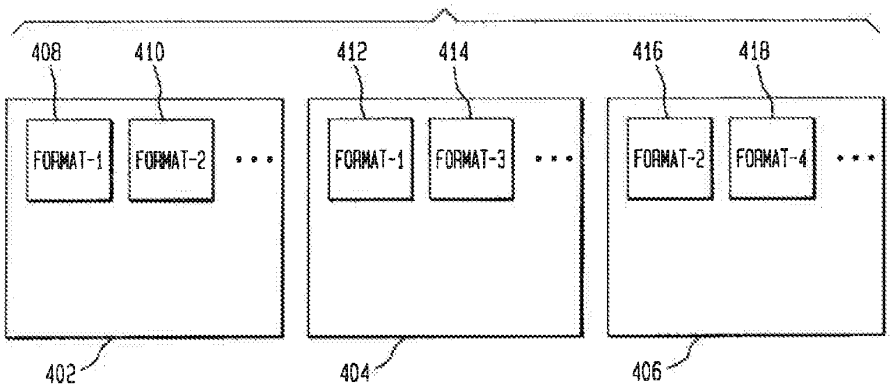

408
410
412
414
416
418
FORMAT-1
FORMAT-2
FORMAT-1
FORMAT-3
FORMAT-2
FORMAT-4
402
404
406

FIG. 5

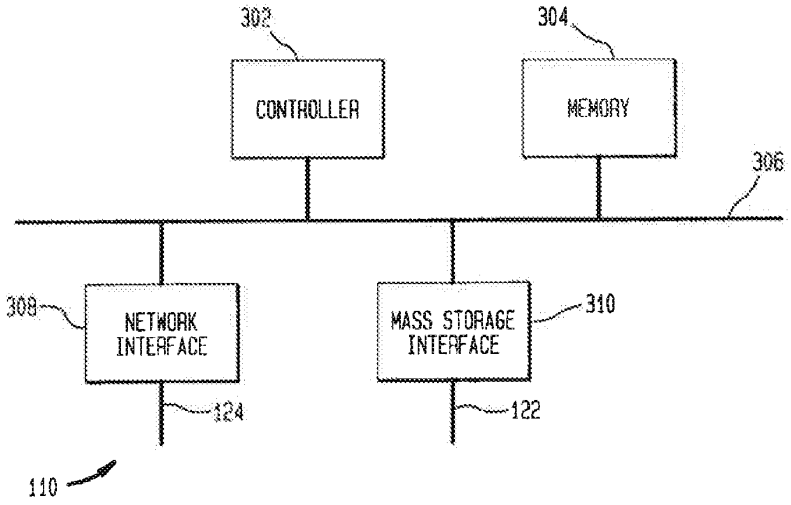

302
304
CONTROLLER
MEMORY
306
308
NETWORK INTERFACE
MASS STORAGE INTERFACE
310
124
122
110

FIG. 6

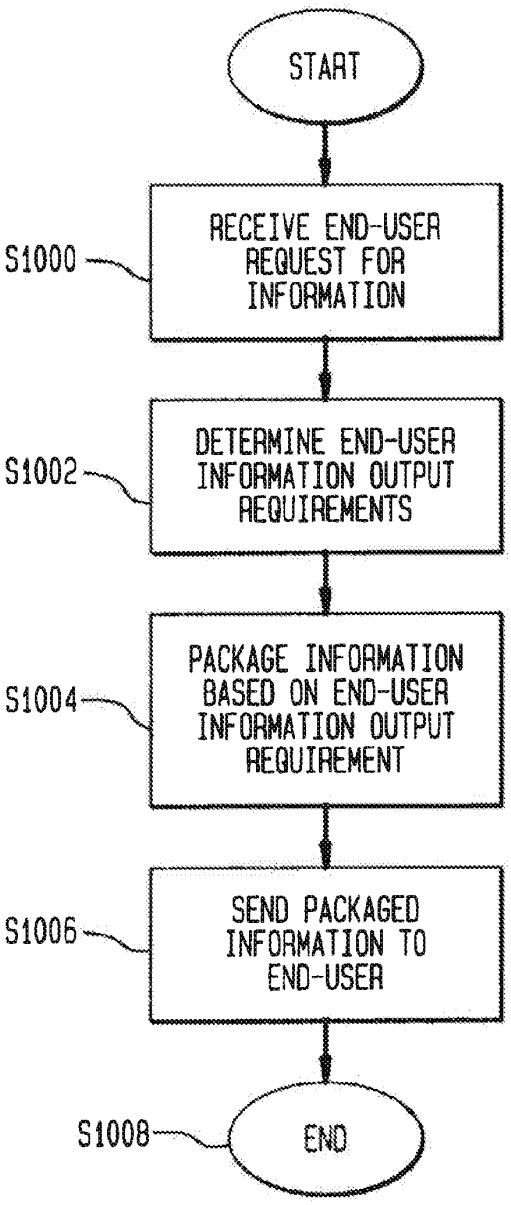

START
S1000
RECEIVE END-USER REQUEST FOR INFORMATION
S1002
DETERMINE END-USER INFORMATION OUTPUT REQUIREMENTS
S1004
PACKAGE INFORMATION BASED ON END-USER INFORMATION OUTPUT REQUIREMENT
S1006
SEND PACKAGED INFORMATION TO END-USER
S1008
END

FIG. 7A

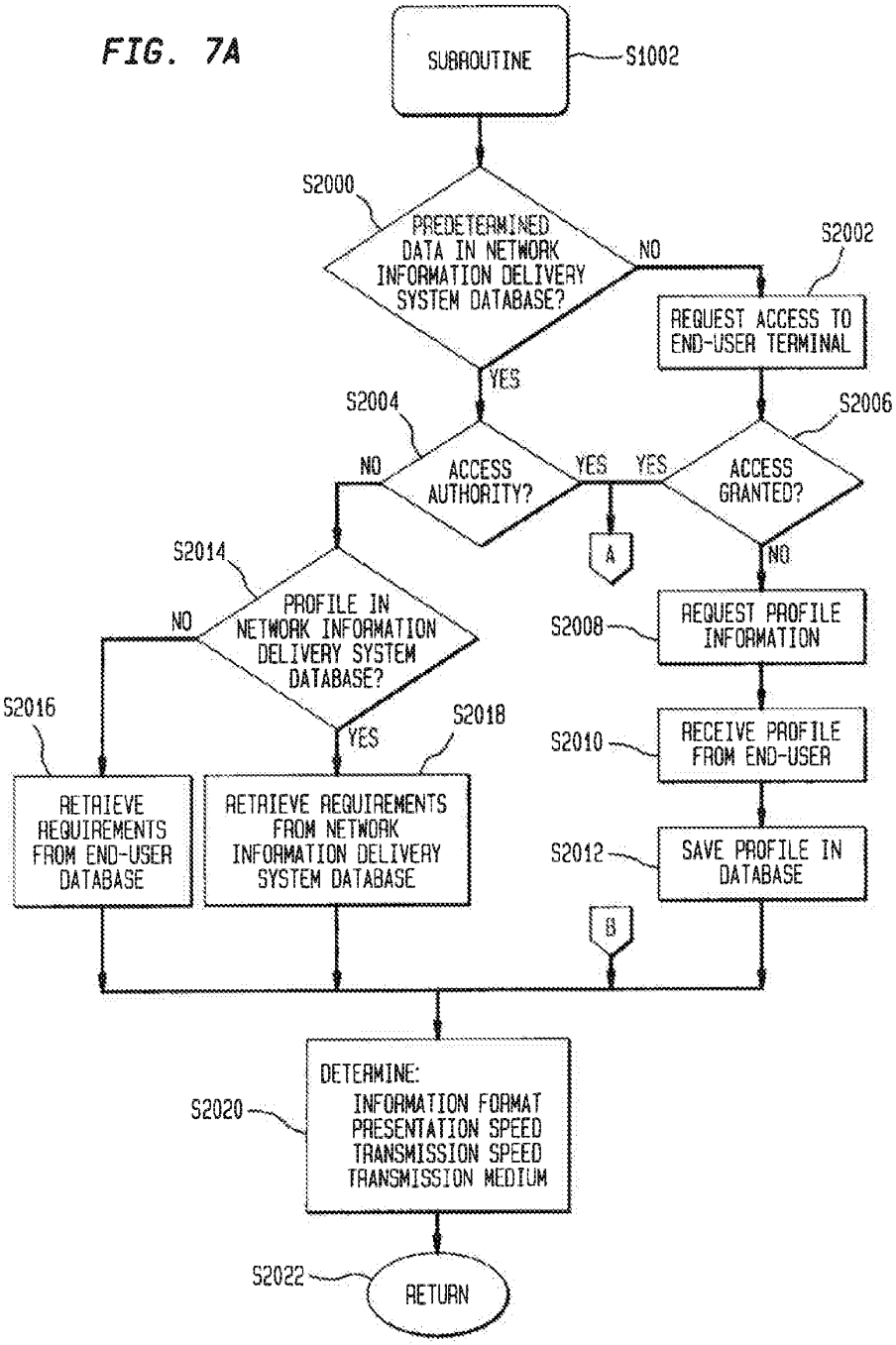

SUBROUTINE
S1002
S2000
PREDETERMINED DATA IN NETWORK INFORMATION DELIVERY SYSTEM DATABASE?
NO
S2002
REQUEST ACCESS TO END-USER TERMINAL
YES
S2004
ACCESS AUTHORITY?
NO
YES
YES
S2006
ACCESS GRANTED?
NO
A
S2014
PROFILE IN NETWORK INFORMATION DELIVERY SYSTEM DATABASE?
NO
YES
S2008
REQUEST PROFILE INFORMATION
S2010
RECEIVE PROFILE FROM END-USER
S2012
SAVE PROFILE IN DATABASE
S2016
RETRIEVE REQUIREMENTS FROM END-USER DATABASE
S2018
RETRIEVE REQUIREMENTS FROM NETWORK INFORMATION DELIVERY SYSTEM DATABASE
B
S2020
DETERMINE:
INFORMATION FORMAT
PRESENTATION SPEED
TRANSMISSION SPEED
TRANSMISSION MEDIUM
S2022
RETURN

FIG. 7B

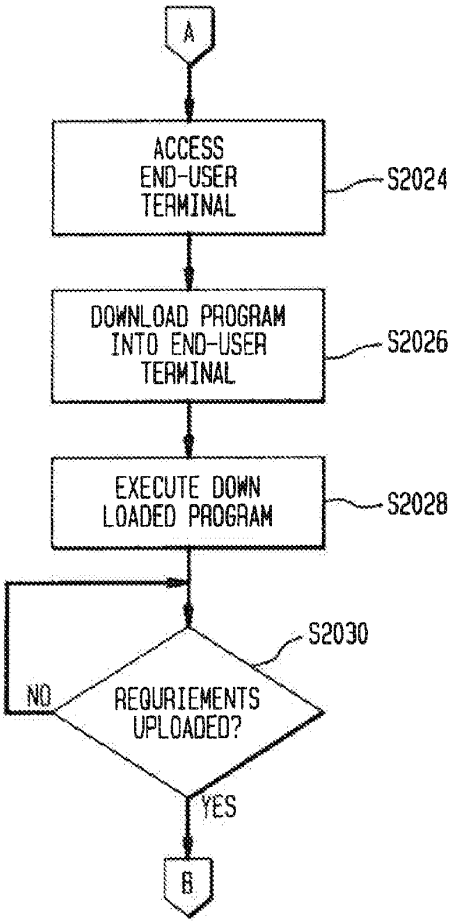

A
ACCESS END-USER TERMINAL
S2024
DOWNLOAD PROGRAM INTO END-USER TERMINAL
S2026
EXECUTE DOWN LOADED PROGRAM
S2028
S2030
NO
REQURIEMENTS UPLOADED?
YES
B

FIG. 8

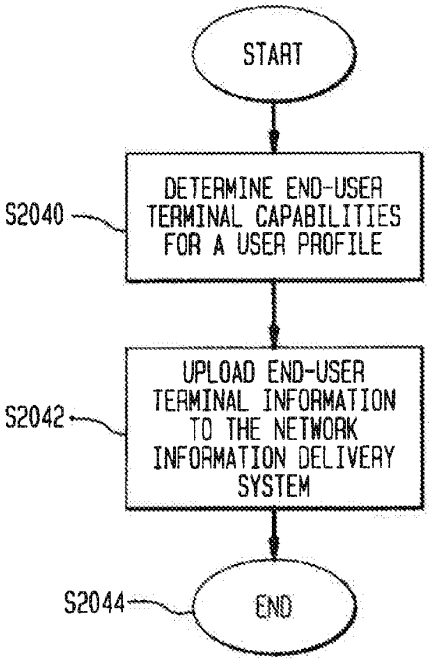

START
S2040
DETERMINE END-USER TERMINAL CAPABILITIES FOR A USER PROFILE
S2042
UPLOAD END-USER TERMINAL INFORMATION TO THE NETWORK INFORMATION DELIVERY SYSTEM
S2044
END

FIG. 9

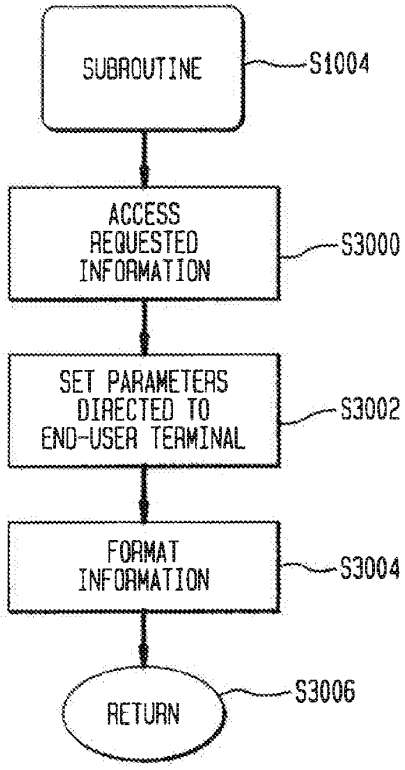
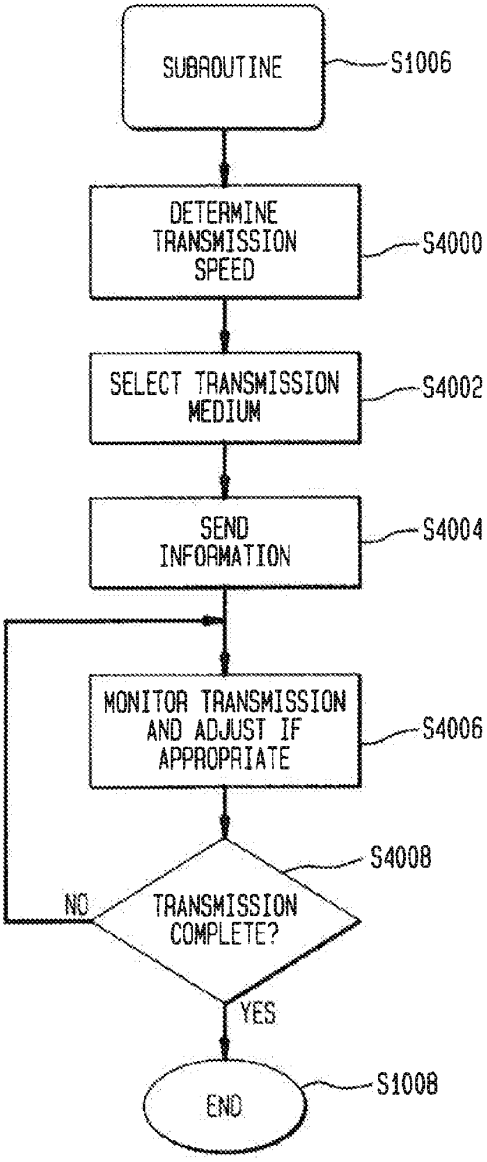

SUBROUTINE
S1004
ACCESS REQUESTED INFORMATION
S3000
SET PARAMETERS DIRECTED TO END-USER TERMINAL
S3002
FORMAT INFORMATION
S3004
RETURN
S3006

FIG. 10


SUBROUTINE
S1006
DETERMINE TRANSMISSION SPEED
S4000
SELECT TRANSMISSION MEDIUM
S4002
SEND INFORMATION
S4004
MONITOR TRANSMISSION AND ADJUST IF APPROPRIATE
S4006
S4008
NO
TRANSMISSION COMPLETE?
YES
END
S1008

NETWORK INFORMATION DELIVERY SYSTEM FOR DELIVERING INFORMATION BASED ON END USER TERMINAL REQUIREMENTS

BACKGROUND OF THE INVENTION

1. Field of Invention

This invention relates to delivering information in a network environment.

2. Description of Related Art

Currently if a user desires to download information (e.g. multimedia information) from a network such as the Internet, an information provider must first determine the capabilities available on a user terminal. Thus, the information provider first queries the user, via a menu for example, to determine the user terminal capabilities such as the number of pixels displayable on the user terminal display, the type of sound system that is installed in the user terminal and data transmission speeds that is supported by the user terminal network interface. The information provider receives the above user terminal information, and, if choices are available, selects the requested information in a most compatible pre-formatted form for delivery to the user.

The requirement for the user to explicitly declare the user terminal capabilities each time information is downloaded is very inconvenient. In addition, many times the user is not technically oriented and may not know what capabilities are available on the terminal. Moreover, if none of the predetermined formats are suitable for information reproduction by the user terminal, the user terminal reproduces the information in an undesirable manner. Thus, there is a need to provide a method and apparatus to more conveniently determine the user terminal capabilities and to deliver information so that the user terminal capabilities may be most effectively used.

SUMMARY OF THE INVENTION

This invention provides an information delivery system that automatically determines end-user information output requirements based on predetermined data corresponding to each requesting end-user terminal. A network information delivery device maintains an end-user profile in a database either associated with a network information delivery device or with the end-user terminal. The end-user profile is accessed by the network information delivery device when the end-user requests delivery of information.

If the network information delivery device has authority to access the end-user terminal, a program may be downloaded to the end-user terminal to determine the exact end-user terminal configuration. The program executing in the end-user terminal returns the information regarding the end-user terminal capabilities to the network information delivery device so that the requested information may be formatted and delivered to the end-user in an optimal manner.

The information to be delivered to end-users may be pre-formatted into predetermined formats. The predetermined formats may be determined based on how often a particular format of the information is requested and characteristics of the information. The information may also be stored in a generic format so that packaging the information for a specific user may be efficiently and timely performed.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention is described in detail with reference to the following drawings, wherein in like numerals represent like elements:

FIG. **1** is a diagram of a network system that delivers information;

FIG. **2** is a diagram of a typical user terminal that includes multimedia capability in the form of plug-in cards;

FIG. **3** is a diagram of a user profile example;

FIG. **4** is a diagram of multimedia information preformatted in several predetermined formats;

FIG. **5** is a block diagram of a network information delivery device that provides information to end-users;

FIG. **6** is a flowchart of the network information delivery device for delivering information to an end-user;

FIGS. **7**A and **7**B are flowcharts of a process for determining end-user information output requirements;

FIG. **8** is a flowchart of a process in a user terminal that determines user terminal information;

FIG. **9** is a flowchart of the network information delivery device process for packaging information based on the end-user information output requirement; and

FIG. **10** is a flowchart of the network information delivery device process for sending the package information to the end-user.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

FIG. **1** shows a network **100** interconnecting a network information delivery device **110** and an information source **108** through a local exchange carrier (LEC) **104**, and end-user terminals **112** and **114** through LEC **102**. The network **100** may include Integrated Services Digital Network (ISDN), Asynchronous Transfer Mode (ATM) or analog telephone switching service (POTS) in wired, wireless or optical mediums. The network information delivery device **110**, the information source **108** and end-user terminals **112** and **114** may all be coupled to different LECs. The configuration in FIG. **1** is shown as an example. Other configurations are possible such as the end-user terminals **112** and **114**, the multimedia information source **108** and the network information delivery device **110** being connected to different LECs or the above components being incorporated directly in the network **100**.

When an end-user using the end-user terminal **114** requests information such as multimedia information from the network information delivery device **110**, the network information delivery device **110** first searches the contents of database **118** to determine information output requirements corresponding to the end-user terminal **114**. The database **118** may be separate from the network information delivery device **110** or may be incorporated in the network information delivery device **110**.

If information output requirements corresponding to end-user terminal **114** is found in the database **118**, the network information delivery device **110** retrieves the multimedia information, for example, from the information source **108** through LEC **104** and packages the multimedia information based on the information output requirements of the end-user terminal **114**. Then, the network information delivery device **110** sends the packaged information to the end-user terminal **114** through the network **100**.

FIG. **2** shows a typical end-user terminal, such as end-user terminal **114**. The end-user terminal **114** includes a CPU **202**, a memory **204** and a plurality of additional features in the form of plug-in cards. The plug-in cards may include a network interface **206** that interfaces with the network **100** through the LEC **102**. In addition, plug-in cards such as a video card **208**, a sound card **210** and a mass storage

interface **212** may also be included. The video card **208** is coupled to a display **214** and provides various display capabilities based on the amount of memory and computing power contained within the video card **208** as well as display capability of the display **214**. For example, the display **214** may be capable of displaying 1024×768 pixels having 256 colors. The video card **208** may contain a large amount of memory and a high speed digital signal processor to process multiple images concurrently. On the other hand, some end-users may have a very simple video card **208** and perhaps only a monochrome display **214**.

The end-user terminal may have a very sophisticated sound card **210** installed together with a high performance stereo speaker system **216**. However, some users may not have sound cards at all but only the standard computer speaker.

The mass storage interface **212** may interface to many types of storage mediums such as read-write optical disks and conventional hard disks. The amount of available mass storage space may determine how a requested information is formatted and blocked for transmission. The type of transmission medium selected for delivery of the requested information may also be affected by the available storage space.

All the above listed features of the end-user terminal **114** may be recorded in a user profile that is associated with the end-user terminal **114**. Additionally, the user profile may contain end-user preferences such as the rate of display update and special sound effects produced by advanced sound cards.

The user profile may be obtained when the end-user first subscribes to the network information delivery device **110**. The user profile may be saved in the database **118**, retrieved and used to package requested information such as multimedia information for delivery to the end-user terminal **114**.

FIG. **3** shows an example of the user profile **230**. The user profile entries **232–240** contain a number of pixels that can be displayed, a number of frames per minute update rate, and indications of: stereo/mono speaker system, wave table sound capability, and an amount of available memory for buffering, respectively. Additional information may also be placed in the user profile **230** by the network information delivery device **110** that may be necessary to properly package the multimedia information for effective delivery to the end-user.

The user profile information also may be stored in a database coupled to the end-user terminal **114** such as database **116**, as shown in FIG. **1**. Mechanisms such as "cookies" provide fixed amount of storage in the end-user terminal **114** to provide a place to store and retrieve information regarding the end-user terminal **114**. "Cookies" are currently being proposed as a general mechanism which, for example, permits server side connections of the Internet to both store and retrieve information on client side of the connection. If mechanisms such as "cookie" are provided on the network, the network information delivery device **110** may store the end-user profiles as "cookies" in the database **116** of the end-user terminal **114**. Thus, when the end-user requests information, the network information delivery device **110** may retrieve the end-user output requirements from cookie files and package the requested information appropriately for output to the end-user terminal **114**.

User profiles may also be generated by a program downloaded from the network information delivery device **110** to the end-user terminal **114**. If the network information delivery device **110** has authority to access and execute programs, such as a Java Script, on the end-user terminal **114**, then the network information delivery device **110** may determine the end-user terminal capabilities at the time when the end-user requests information to be delivered.

Thus, when a request for information such as multimedia information is received, the network information delivery device **110** downloads a program to be executed by the end-user terminal **114** to determine the exact hardware configuration and available storage of the end-user terminal **114**. The information regarding the end-user terminal **114** capabilities is returned to the network information delivery device **110** so that the requested information may be packaged appropriately for effective delivery to the end-user.

Downloading a program into the end-user terminal **114** to determine the exact hardware configuration alleviates the end-user from acquiring the technical knowledge required to determine the end-user terminal capabilities. In addition, the network information delivery device **110** can more accurately determine the end-user terminal capabilities because a program executing on the end-user terminal **114** at the time of information request accounts for any hardware updates that may have occurred prior to the information request.

Thus, by providing the network information delivery device **110** with predetermined information such as a user profile **230** or end-user terminal access information such as passwords and logon identifications, the network information delivery device **110** can automatically determine the best information delivery parameters required for effective delivery of the information requested by the end-user.

The network information delivery device **110** may retrieve requested information from information sources such as information source **108** or other sources connected to physically distant locations such as sources connected to LEC **106**. Because end-users obtain end-user terminal capabilities by purchasing equipment that is available on the market, end-user terminal requirements can be grouped which allows information such as multimedia information to be preformatted into predetermined formats. Based on parameters such as most often requested information and specific characteristics of the information to be formatted, information may be formatted into predetermined formats for efficient delivery to the end-user.

For example, FIG. **4** shows multimedia information **402**, **404** and **406** being formatted in a plurality of formats such as format-1 to format-4. Format-1 to format-4 may be formats such as "Audio Video Interleave" (AVI) (Microsoft's "Video for Windows" standard) or "QuickTime." Thus, as shown in FIG. **4**, multimedia information **402** is formatted in at least format-1 **408** and format-2 **410**; multimedia information **404** is formatted in at least format-1 **412** and format-3 **414** and multimedia information **406** is formatted in at least format-2 **416** and format-4 **418**. Cases that require formats other than the predetermined formats may be handled by formatting the information "on-the-fly" to ensure optimal information delivery to, and reproduction by the end-user terminal **114**.

The network information delivery device **110** may also provide an information delivery database to serve as an information source. Information such as multimedia information from information sources such as information source **108** may be deposited in the information delivery database. When an end-user requests information, the network information delivery device **110** can retrieve the requested information directly from the information delivery database without interacting with the information sources **108** and thus reduce network traffic.

FIG. 5 shows a block diagram of the network information delivery device 110. The network information delivery device 110 includes a controller 302, a memory 304, a network interface 308 and a mass storage interface 310. All of the above components are coupled together through a signal bus 306. The network interface 308 interfaces with the LEC 104 through signal bus 124 and the mass storage interface 310 interfaces with the database 118 through signal bus 122. While FIG. 1 shows the database 118 to be separated from the network information delivery device 110, the database 118 may be incorporated in the memory 304 of the network information delivery device 110.

When an end-user sends a request to the network information delivery device 110 for information, the network interface 308 receives the request and sends a request to the controller 302. The controller 302 processes the information request according to the flowchart as shown in FIG. 6.

In step S1000, the controller 302 receives the end-user request for information and goes to step S1002. In step S1002, the controller 302 determines the end-user information output requirements and then goes to step S1004. In step S1004, the controller 302 packages the information based on the end-user information output requirements determined in step S1002 and then goes to step S1006. In step S1006, the controller 302 sends the packaged information to the end-user and then goes to step S1008 and ends the process.

FIGS. 7A and 7B show the step S1002 of FIG. 6 in greater detail. In step S2000, the controller 302 determines whether the predetermined data is in the network information delivery device database 118. If the predetermined data is in the database 118, the controller 302 goes to step S2004, otherwise, the controller goes to step S2002. In step S2002, the controller 302 requests access to the end-user terminal 114 from the end-user and then goes to step S2006. In step S2006, the controller 302 determines whether the end-user granted access to the end-user terminal 114. If access is granted, the controller 302 goes to step S2012, as shown in FIG. 7B; otherwise, the controller 302 goes to step S2008.

In step S2008, the controller 302 requests the user profile information from the end-user and then goes to step S2010. In step S2010, the controller 302 receives the user profile information from the end-user and goes to step S2012. In step S2012, the controller 302 saves the user profile in either the network information delivery device database 118 or the end-user terminal database 116 based on circumstances of a particular implementation. Then the controller 302 goes to step S2020.

In step S2004, the controller 302 determines whether access authority is granted to the network information delivery device 110 to access the end-user terminal 114. If access is granted, then the controller 302 goes to step S2012 as shown in FIG. 7B; otherwise, the controller 302 goes to step S2014. In step S2014, the controller 302 determines whether the user profile is stored in the network information delivery device database 118. If the user profile is stored in the database 118, then the controller 302 goes to step S2018; otherwise the controller 302 goes to step S2016.

In step S2018, the controller 302 retrieves the user profile from the network information delivery device database 118 and then goes to step S2020. In step S2016, the controller 302 retrieves the user profile from the end-user database 116 and then goes to step S2020.

In step S2020, the controller 302 determines specific formatting and delivery requirements such as information format, presentation speed, transmission speed and transmission medium based on the user profile retrieved during the prior steps. Then the controller 302 goes to step S2022 which returns control to step S1004 of FIG. 6.

In step S2024, as shown in FIG. 7B, the controller 302 accesses the end-user terminal 114 and goes to step S2026. In step S2026, the controller 302 downloads a program into the end-user terminal 114 and goes to step S2028. In step S2028, the controller 302 commands the downloaded program to begin execution and goes to step S2030. In step S2030, the controller 302 determines whether the program executing in the end-user terminal 114 has uploaded a user profile for the end-user terminal 114. If the user profile has been uploaded, the controller 302 goes to step S2020 of FIG. 7A; otherwise, the controller 302 returns to step S2030.

FIG. 8 shows a flowchart of the program downloaded to the end-user terminal 114 and performed by the end-user terminal CPU 202. In step S2040, the CPU 202 determines the end-user terminal capabilities for the user profile and goes to step S2042. In step S2042, the CPU 202 uploads the user profile to the network information delivery device 110 and then goes to step S2044 to the end the process.

While FIGS. 7A, 7B and 8 show that the program executing in the end-user terminal only uploads the user profile to the network information delivery device 110, the program may also save the user profile in the database 116. The network information delivery device 110 may receive the uploaded user profile and store that information in the database 118. Whether the user profile is saved in either of the databases 116 and 118 or only used for the immediate information delivery is dependent upon particular implementation requirements.

For example, if it is determined that the program executing in the end-user terminal 114 consumes too much time so that the interaction between the end-user and the network information delivery device 110 is adversely affected, the user profile retrieved from the end-user terminal 114 may be saved in either the end-user terminal database 116 or the network information delivery device database 118 so that future requests for information delivery may be performed without the time consuming process for determining the end-user terminal capabilities.

FIG. 9 shows step S1004 of FIG. 6 in greater detail. In step S3000, the controller 302 accesses the user profile determined in step S1002 and goes to step S3002. In step S3002, the controller 302 sets appropriate parameters based on the information delivery requirements derived from the user profile for the end-user terminal 114 and the information being requested and then goes to step S3004. In step S3004, the controller 302 formats the requested information based on the parameters set in step S3002 and goes to step S3006 which returns control to step S1006.

FIG. 10 shows step S1006 of FIG. 6 in greater detail. In step S4000, the controller 302 determines the transmission speed appropriate for the information delivery requirements determined by prior steps. Then, the controller 302 goes to step S4002. In step S4002, the controller 302 determines the available transmission mediums and selects a routing of the information delivery path so that the information delivery requirements of the end-user may be met. Then, the controller 302 goes to step S4004. In step S4004, the controller 302 sends the requested information to the end-user terminal 114 and then goes to step S4006.

Before transmitting the requested information, the controller 302 may determine a status of the network 100 and choose several possible routing paths. One of these routing paths is selected to transmit the requested information. The controller 302 may also tag each portion of the requested

information before transmission. The controller **302** monitors the progress of the transmission by receiving feedback messages from the end-user terminal or a server that receives the requested information from the network **100** and transferring the requested information to the end-user. If the transmission progress is not as expected, then the controller **302** may switch the routing path to another one of the possible routing paths. For example, if the controller **302** determines by checking the tags that portions of the requested information have been "dropped" or lost (i.e. dropped data packets), then the selected routing path may be incapable of delivering the needed transmission rate and another routing path should be used.

In step **S4006**, the controller **302** continues to monitor the transmission of the requested information and to readjust the routing path if necessary to satisfy the information delivery requirements of the end-user. If the transmission medium chosen initially failed to deliver a required transmission speed due to unexpected traffic volume, for example, the controller **302** may re-route the delivery path for remaining portions of the requested information. Then, the controller **302** goes to step **S4008**.

In step **S4008**, the controller **302** determines whether the transmission of the requested information has completed. If the transmission has completed, the controller **302** goes to step **S1008** and ends the process; otherwise, the controller **302** returns to step **S4006** and continues to process.

While this invention has been described in conjunction with specific embodiments, thereof, it is evident that many alternatives, modifications and variations will be apparent to those skilled in the art. For example, the network information delivery device **110** may maintain a repository of information received from information sources such as information source **108**. The formats of the information in the repository may be stored in deliverable formats or in a generic form that may be quickly and efficiently packaged into a large number of specific formats as required. Accordingly, preferred embodiments of the invention as set forth herein are intended to be illustrative, not limiting. Various changes may be made without departing from the spirit and scope of the invention as defined in the following claims.

What is claimed is:

1. A method for operating a network information delivery system, comprising:

determining end-user terminal information output multimedia viewer requirements based on predetermined data corresponding to said end-user terminal and type of multimedia viewer used on said end-user terminal;

packaging information based on the end-user terminal multimedia viewer requirements by retrieving the information to be packaged from an information source, setting parameters directed to the end-user terminal for regulating information presentation based on the end-user terminal multimedia viewer requirements, selecting one of a predetermined multimedia viewer formats of the information, and formatting into the selected multimedia viewer format the information and the parameters into the package information based on the end-user terminal multimedia viewer requirements; and

sending the packaged information to the end-user terminal through a network.

2. The method of claim **1**, wherein the determining step comprises:

retrieving the predetermined data from at least one of a network information delivery device database and an end-user terminal database; and

generating the end-user multimedia viewer requirements based on the retrieved predetermined data.

3. The method of claim **2**, wherein the multimedia viewer requirements include at least one of information format, presentation speed, information transmission speed, and information transmission medium.

4. The method of claim **3**, wherein the multimedia viewer requirements further include end-user terminal feature parameters for reproducing the packaged information on the end-user terminal.

5. The method of claim **1**, wherein the information source includes a database of the network information delivery device.

6. The method of claim **1**, wherein the formatting the information step comprises transforming the information from a generic format into a format selected based on the end-user multimedia viewer requirements.

7. The method of claim **1**, wherein the sending step comprises:

setting a network transmission speed based on the end-user multimedia viewer requirements;

selecting a transmission medium based on the end-user multimedia viewer requirements; and

sending the packaged information on the transmission medium at the network transmission speed.

8. The method of claim **7**, wherein the sending step further comprises:

monitoring transmission progress; and

changing the transmission medium if the transmission progress fails to meet the end-user multimedia viewer requirements.

9. The method of claim **1**, wherein the predetermined data includes an end-user profile comprising:

end-user terminal hardware features;

end-user software features; and

end-user preferences.

10. The method of claim **1**, wherein the determining step comprises:

accessing the end-user terminal based on the predetermined data;

executing a program in the end-user terminal to determine the end-user terminal multimedia viewer requirements; and

sending the end-user terminal multimedia viewer requirements to the network information delivery device.

11. The method of claim **10**, further comprising storing the end-user terminal multimedia viewer requirements in either a network information delivery device database or an end-user terminal database.

12. The method of claim **10**, wherein the predetermined data comprises access authority to the end-user terminal.

13. The method of claim **12**, wherein the access authority includes a password of the end-user terminal.

14. The method of claim **10**, wherein the determining step further comprises downloading the program from the network information delivery device.

15. The method of claim **1**, wherein the network includes at least one of Integrated Services Digital Network, Asynchronous Transfer Mode and analog telephone switching service, the network having physical mediums that includes at least one of wired, wireless and optical.

16. A network information delivery system, comprising:

a network;

an end-user terminal connected to the network;

a network information delivery device connected to the network that determines end-user terminal multimedia

viewer requirements based on predetermined data corresponding to the end-user terminal and type of multimedia viewer used on said end-user terminal, retrieves information requested by said end-user terminal from an information source, selects one of a predetermined multimedia viewer formats, packages the retrieved information and parameters directed to the end-user terminal into the selected multimedia viewer format based on the end-user multimedia viewer requirements, and sends said package information to said end-user terminal through the network.

17. The system of claim 16, further comprising a first database coupled with the network information delivery device, the first database storing the predetermined data, wherein the network information delivery device retrieves the predetermined data from the first database and generates the end-user multimedia viewer requirements based on the retrieved predetermined data.

18. The system of claim 16, further comprising a second database coupled with the end-user terminal, the first database storing the predetermined data, wherein the network information delivery device retrieves the predetermined data from the second database and generates the end-user multimedia viewer requirements based on the retrieved predetermined data.

19. The system of claim 16, wherein the predetermined data includes authorization for accessing the end-user terminal, the network information delivery device determining the end-user multimedia viewer requirements by executing a program in the end-user terminal, the program determining the end-user terminal capabilities and sending a user profile that includes end-user terminal capabilities information.

20. The system of claim 19, wherein the program is downloaded to the end-user terminal from the network information delivery device.

21. The system of claim 19, wherein the network multimedia viewer device generates the end-user information output requirements based on the user profile sent by the program executing in the end-user terminal.

22. The system of claim 16, wherein the information source includes a database of the network information delivery device.

23. The system of claim 16, wherein the network information delivery device transmits the package through a transmission medium at a transmission speed based on the end-user information output requirements.

24. The system of claim 16, wherein the network information delivery device monitors a transmission of the packaged information, if the transmission fails to meet the end-user multimedia viewer requirements, then the network information delivery device changing a transmission medium or a transmission speed to meet the end-user multimedia viewer requirements.

25. The system of claim 16, wherein the network includes at least one of Integrated Services Digital Network, Asynchronous Transfer Mode and analog telephone switching service, the network having physical mediums that includes at least one of wired, wireless and optical.

* * * * *

US006421726B1

(12) **United States Patent**
Kenner et al.

(10) **Patent No.: US 6,421,726 B1**
(45) **Date of Patent: *Jul. 16, 2002**

(54) **SYSTEM AND METHOD FOR SELECTION AND RETRIEVAL OF DIVERSE TYPES OF VIDEO DATA ON A COMPUTER NETWORK**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

This patent is subject to a terminal disclaimer.

(21) Appl. No.: **09/039,077**

(22) Filed: **Mar. 1, 1998**

Related U.S. Application Data

(60) Provisional application No. 60/039,086, filed on Mar. 14, 1997.

(51) **Int. Cl.**[7] **G06F 15/173**; G06F 15/16

(52) **U.S. Cl.** **709/225**; 709/224; 709/219

(58) **Field of Search** 709/250, 245, 709/244, 238, 235, 226, 228, 227, 224, 219, 217, 105, 225; 707/5, 104.1; 345/716, 717; 725/115

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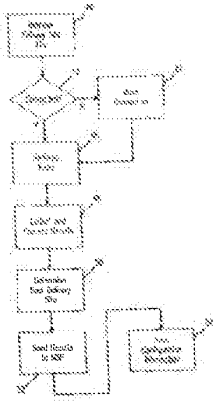
Assistant Examiner—Jason D. Cardone
(74) *Attorney, Agent, or Firm*—David H. Judson

(57) **ABSTRACT**

A system and method for the selection and retrieval of various types of video data from distributed delivery sites calls for the deployment of "Smart Mirror" sites throughout a network, each of which maintains a copy of certain data managed by the system. Each "Smart Mirror" site maintains copies of the data in several alternative file formats. Every user is assigned to a specific delivery site based on an analysis of network performance with respect to each of the available delivery sites. Generalized network performance data is collected and stored to facilitate the selection of additional delivery sites and to ensure the preservation of improved performance in comparison to traditional networks. The appropriate file format is automatically selected based on the capabilities of a user terminal making a request for data.

4 Claims, 5 Drawing Sheets



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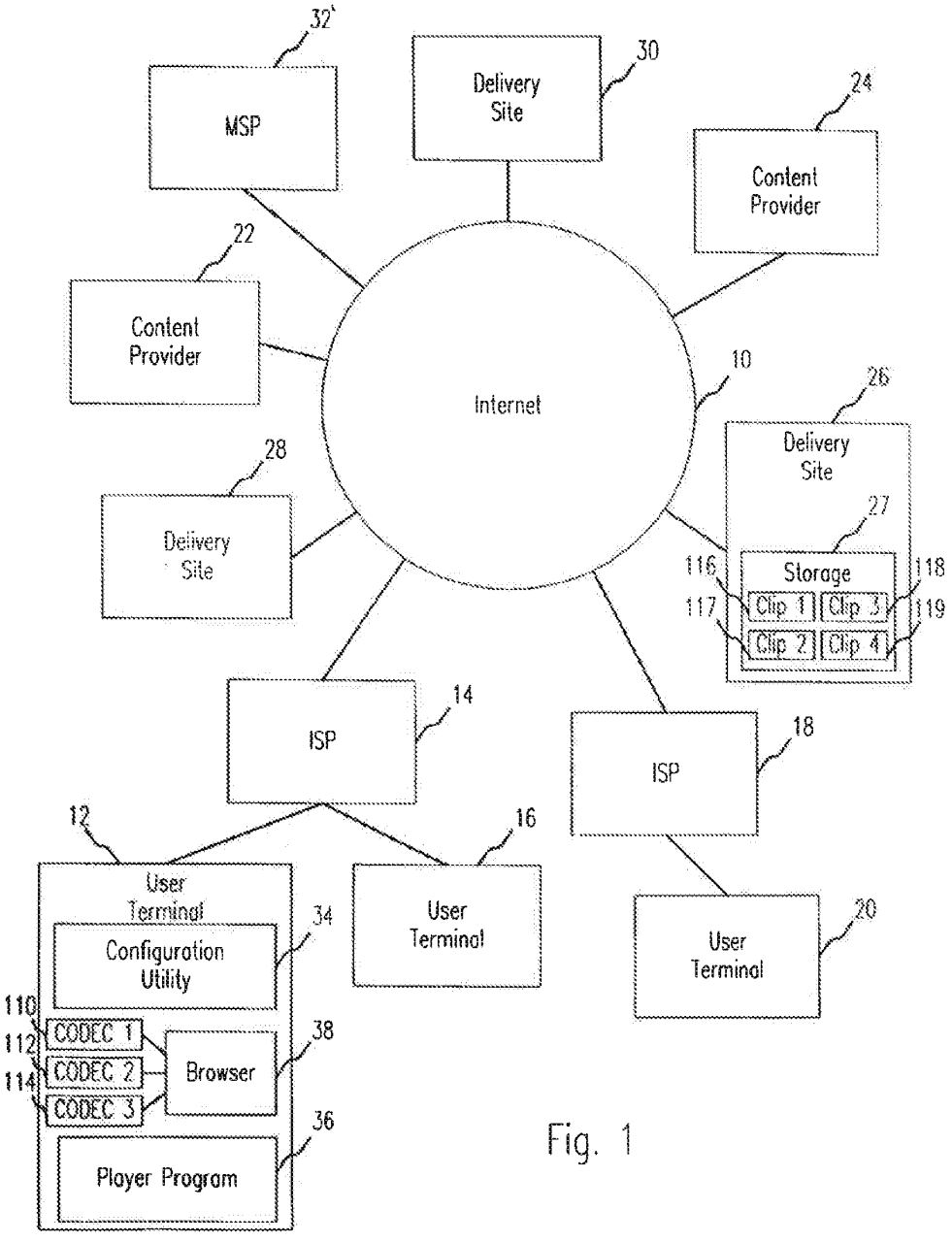

32
MSP
Delivery Site
30
24
Content Provider
22
Content Provider
Internet
10
26
Delivery Site
28
Delivery Site
27
Storage
116
118
Clip 1
Clip 3
117
119
Clip 2
Clip 4
ISP
14
ISP
18
12
16
User Terminal
User Terminal
User Terminal
20
34
Configuration Utility
110
CODEC 1
112
CODEC 2
114
CODEC 3
Browser
38
36
Player Program

Fig. 1

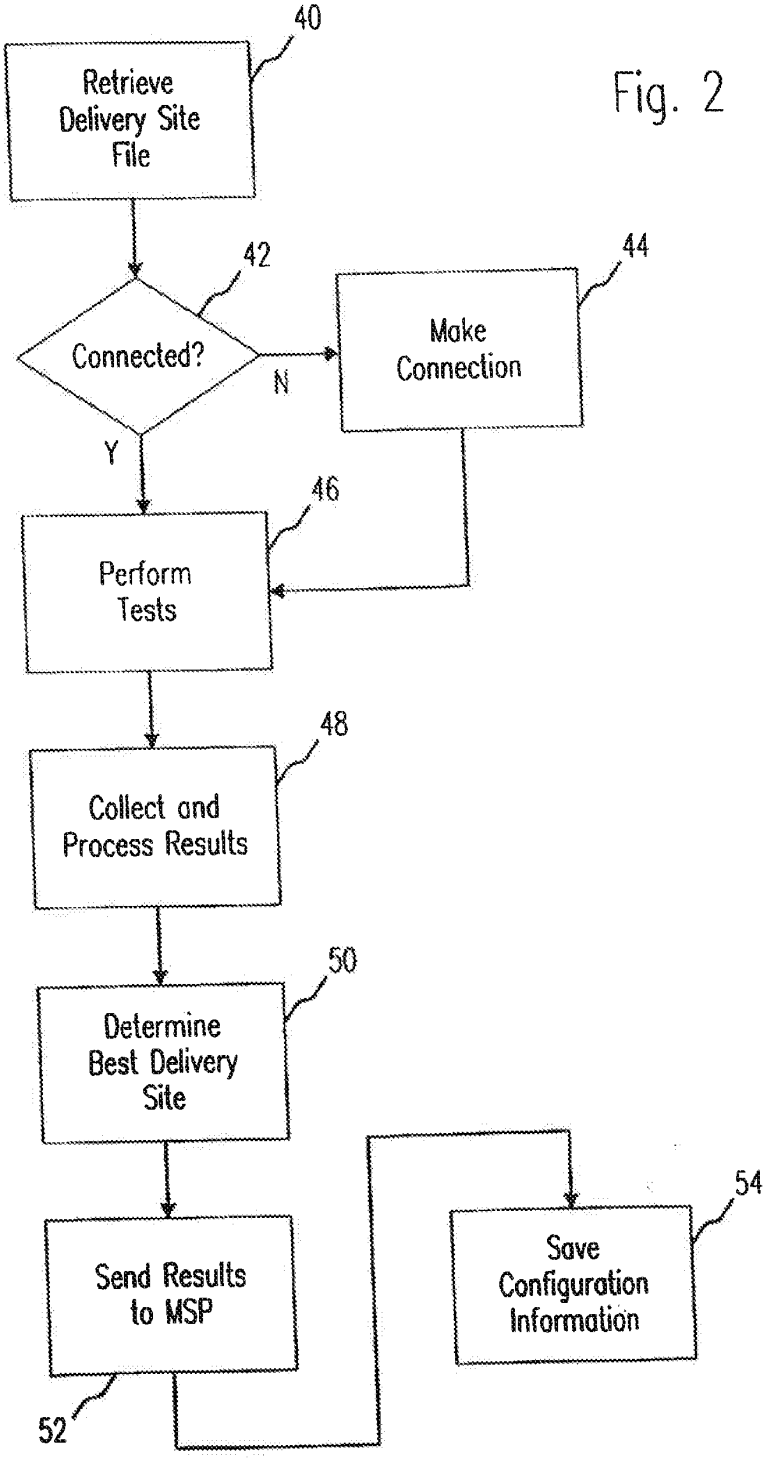

40
Retrieve Delivery Site File
42
Connected?
N
Y
44
Make Connection
46
Perform Tests
48
Collect and Process Results
50
Determine Best Delivery Site
Send Results to MSP
52
54
Save Configuration Information

Fig. 2

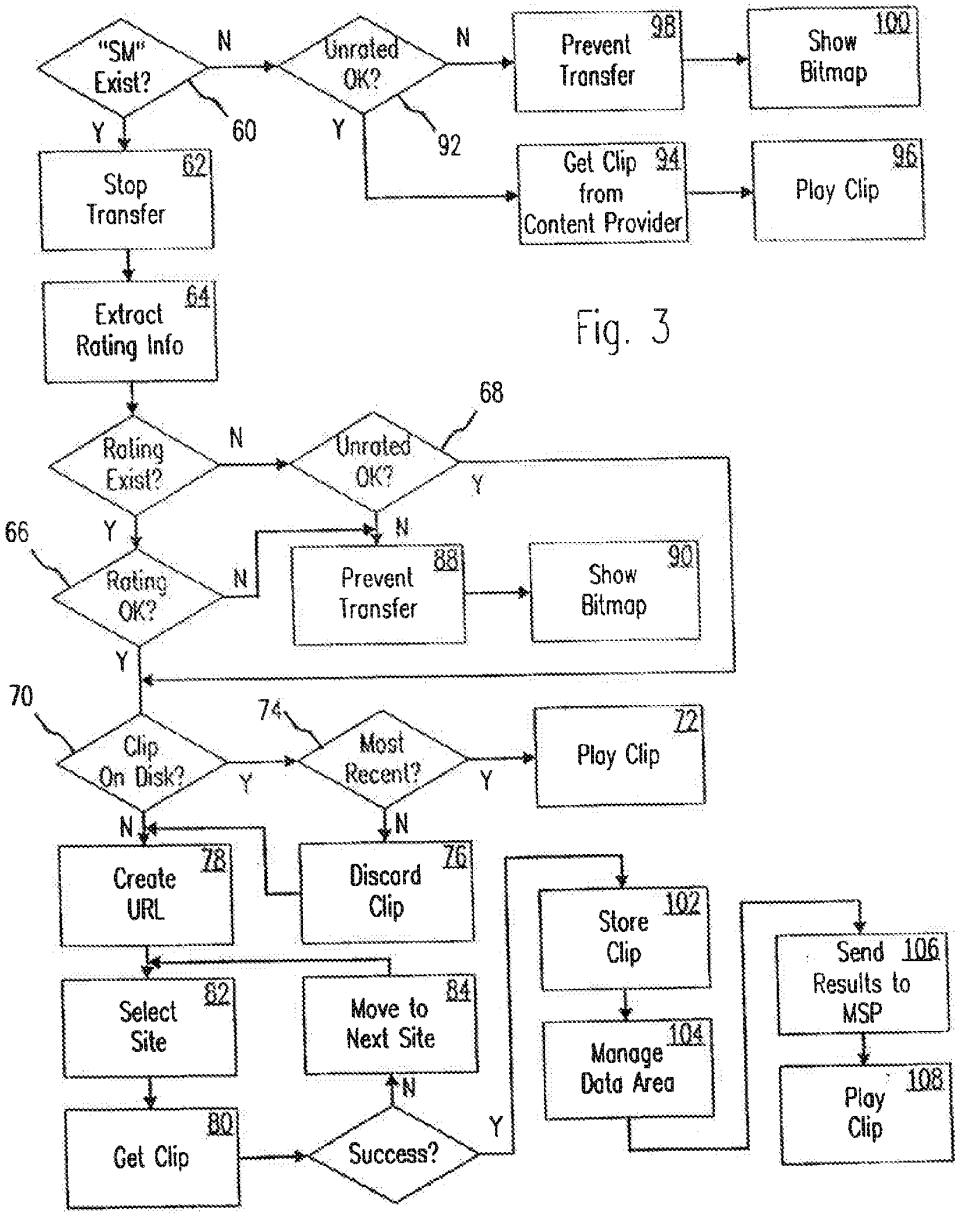

"SM" Exist?
N
Unrated OK?
N
Prevent Transfer
98
Show Bitmap
100
Y
60
Y
92
Stop Transfer
62
Get Clip from Content Provider
94
Play Clip
96
Extract Rating Info
64
68
Rating Exist?
N
Unrated OK?
Y
66
Y
N
Rating OK?
N
Prevent Transfer
88
Show Bitmap
90
Y
70
74
Clip On Disk?
Y
Most Recent?
Y
Play Clip
72
N
N
Create URL
78
Discard Clip
76
Store Clip
102
Send Results to MSP
106
Select Site
82
Move to Next Site
84
Manage Data Area
104
N
Y
Get Clip
80
Success?
Play Clip
108

Fig. 3

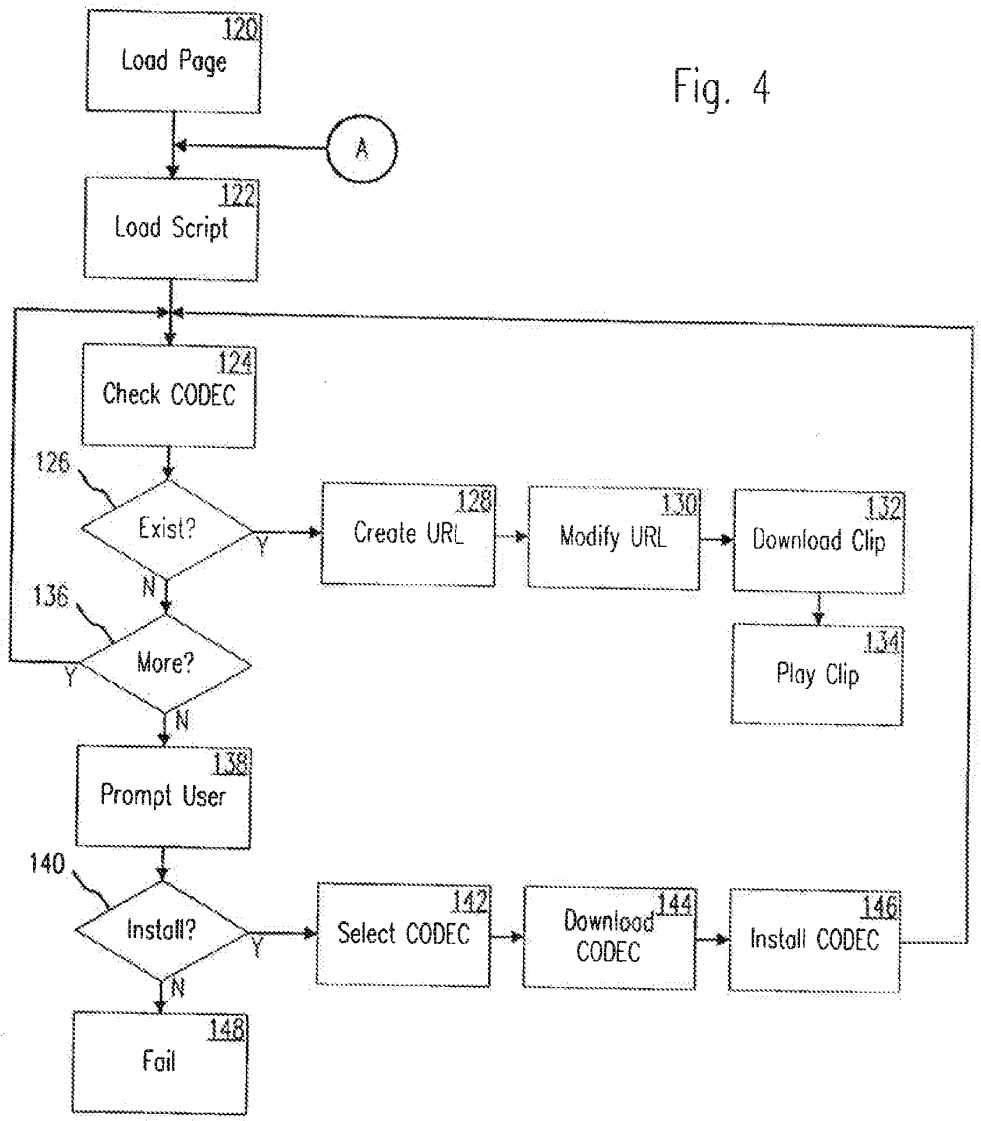
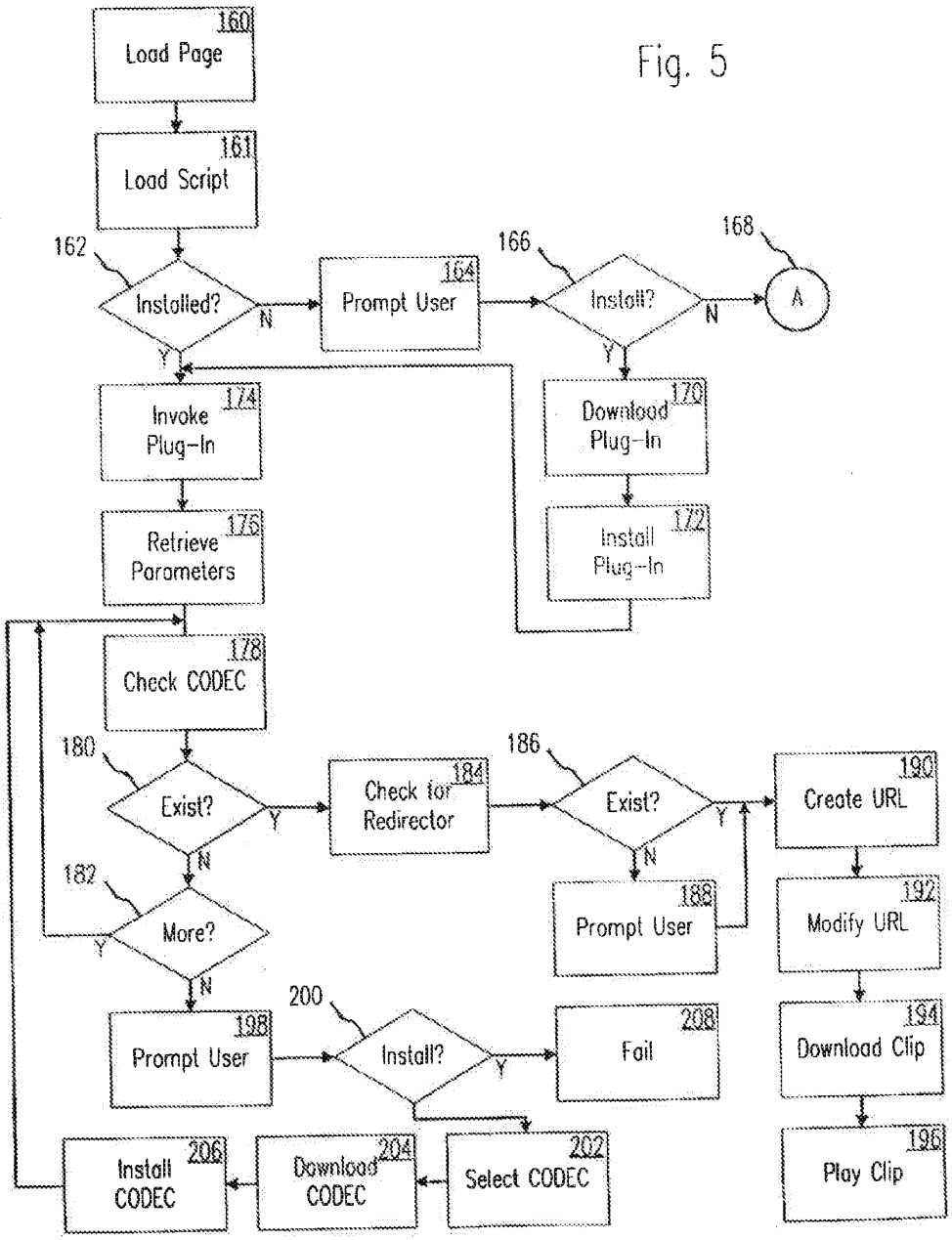

120
Load Page
A
122
Load Script
124
Check CODEC
126
Exist?
Y
N
128
Create URL
130
Modify URL
132
Download Clip
134
Play Clip
136
More?
Y
N
138
Prompt User
140
Install?
Y
N
142
Select CODEC
144
Download CODEC
146
Install CODEC
148
Fail

Fig. 4

Fig. 5


160
Load Page
161
Load Script
162
Installed?
N
Y
164
Prompt User
166
Install?
N
Y
168
A
174
Invoke Plug-In
170
Download Plug-In
172
Install Plug-In
176
Retrieve Parameters
178
Check CODEC
180
Exist?
Y
N
184
Check for Redirector
186
Exist?
Y
N
190
Create URL
182
More?
Y
N
188
Prompt User
192
Modify URL
198
Prompt User
200
Install?
Y
208
Fail
194
Download Clip
206
Install CODEC
204
Download CODEC
202
Select CODEC
196
Play Clip

SYSTEM AND METHOD FOR SELECTION AND RETRIEVAL OF DIVERSE TYPES OF VIDEO DATA ON A COMPUTER NETWORK

This application claims priority under 35 U.S.C. § 119(e) from Provisional Application No. 60/039,086 filed on Mar. 14, 1997.

The invention relates to a system and method for distributed data storage and retrieval, and more particularly, to a system and method whereby a user can acquire network performance information for a dynamic and distributed multipurpose network, and use this information to identify and select optimum delivery sites or servers from which to receive computer data, specifically multimedia content, as well as to select the particular type of multimedia content viewable by the user. Such delivery sites, servers, and content type are selected so as to increase network capacity, distribute server load, reduce transmission delays between the server and the user, and reduce obstacles to viewing the multimedia content.

BACKGROUND OF THE INVENTION

The Internet is a loose network of connected computers spread throughout the world. A message can be sent from any computer on the Internet to any other by specifying a destination address and passing the message from computer to computer via a series of "hops." Each computer, router, or "node" on the Internet has a unique Internet address. When an intermediate computer or router receives a message in transit, the computer checks the intended destination of the message and passes it along accordingly.

The Internet is growing, in terms of both size and sophistication, at a rapid rate. In the past, most users of the Internet were academic, research, or institutional users; the Internet was primarily used at that time to transmit and receive electronic mail and network news and to allow transfer of computer files. However, since the introduction of the World Wide Web (also known as the "Web" or the "WWW") several years ago, the Internet has begun to host increasing amounts of other types of data of general interest, namely representations of images, articles, etc.

The Web protocol and language establish a graphical means to navigate the expanses of the Internet. "Web pages," often consisting primarily of text and graphical material, are stored on numerous computers, known as "Web servers," throughout the Internet. A software program known as a "browser" can be used to access and view Web pages across the Internet by specifying the location (i.e. Internet address) of the desired Web page. When a Web page is accessed, its information is transmitted from the remote computer (server or delivery site), wherever in the world it may be located, across the Internet, to the user.

In recent times, the Web has begun to host highly sophisticated types of multimedia content, such as audio and video data, and computer software. Compared to first generation Web content, namely text and still images, audio clips, video clips, and software programs have extremely high storage and bandwidth requirements.

Before a video clip can be transmitted over a computer network, the clip must be digitized by encoding the video's analog signal to "1s" and "0s." In order to reduce the bandwidth required to transmit the digitized video, the video data stream is frequently compressed. Video compression is a process by which redundant data is eliminated from the video data stream so that the overall size of the data stream is reduced. There are many different compression formats

which are used to reduce video data streams, e.g., MPEG, JPEG, H261, Indeo, Cinepak, AVI, Quicktime, TrueMotion and Wavelet.

Video clips received in a compressed format generally s must be decompressed before they can be viewed. Decompression of a video is commonly performed by a video player "CODEC" program, or COmpressor/DECompressor, often located at a user's multimedia terminal. Generally speaking, a single CODEC program can only recognize and decompress a single compression format.

When a video clip is stored for transmission in a format which can be decompressed by the CODEC at a user terminal, delivery of the video clip to the user can proceed smoothly. This is typically the situation where a subscription service provides video delivery over a confined network. The service provides a subscribing user with a preferred CODEC, and stores video clips in the compression format recognized by the provided CODEC.

However, when a service begins to make video clips available over the Internet, it is more likely that the video clips will be requested by a non-subscribing user whose multimedia terminal does not have the service provider's preferred CODEC. In this case, if the user wishes to view the video clips, he would be required to acquire or download a CODEC program capable of decompressing the desired video clip. Like video clip files, CODEC program files can be large files that take a long time to download. Moreover, a CODEC program can be difficult, time-consuming, or inconvenient to install onto the multimedia terminal. If a user is forced to download a CODEC program before he can play a video file, he may be discouraged from pursuing that particular video request any further.

At present, it is difficult, if not impossible, to provide sustained high-speed transmission of large audio/video files over a multi-node link on the Internet. Because the data is often transferred from afar, many factors can cause the delay or even loss of parts or all of a transmission. It is generally not critical if a user experiences minor delays in receiving small graphic or text files. However, it is recognized that real-time data such as video has very specific and stringent timing requirements for data transfer and display.

Unfortunately, the present design of traditional Internet-like data networks is based on the principle that delays and significant data transmission rate variations are acceptable for ordinary data (e.g. text and still images). Consequently, because of the high value of permitting access to text and graphical information from locations around the world, such transmission defects are considered acceptable, and the base capacity of the Internet is somewhat "oversubscribed" to reduce data transmission costs. In other words, the timeliness of network data transmission has been significantly compromised in order to render relatively insignificant the aggregate cost of long distance communication connections.

In order to successfully transfer audio-video data across a message-oriented network such as the Internet, for any more than a few users, network resources should be committed in a manner facilitating timeliness of transmittal. A system using committed network resources generally cannot take advantage of the existing pricing scheme of shared networks like the Internet, since it cannot participate in the sharing of network resources on a data packet by data packet basis. Video data must be transmitted to the exclusion of lower-priority data. Transmission costs thus become significant, especially when the connection is "long distance" or when the connection is continued over an extended period of time.

Another consequence of the timeliness vs. cost compromise discussed above has been the seemingly indiscriminate

topographical design of the network. Since delays and throughput variations have traditionally been excused in favor of low cost, the configuration of the Internet infrastructure has also been driven by cost considerations. Accordingly, the interconnection efficiency of the network has rarely been considered. The rapid growth of real time data is changing this requirement.

It is recognized that inadequate data transfer performance of time-sensitive data on the Internet is typically caused by four factors: packet loss, excessive server utilization, the relatively low capacity of the network infrastructure, and inherent delays in the network hardware. Packet loss, in particular, is caused by inadequate infrastructure and lack of robustness in routing. The inherent delays are believed to be caused by, among other things, the lack of flow control between adjacent nodes in a multiple-node path on the Internet.

Unlike smaller text and graphic files, relatively large video files can take several minutes (or more) of "streaming," or constant data flow. Consequently, the usual network performance problems are exacerbated. Network bandwidth, or the data-carrying capacity of a particular network, is limited. Thus, packet loss and delays increase. Long delivery times consume a large amount of server capacity for a long time, decreasing the resources available to other users. Accordingly, because the network infrastructure becomes increasingly congested, packet loss and delays continue to increase, transmission times rise, and server load increases further.

This pattern exemplifies a "downward spiral" of network performance, which can be driven by the attempted transmission of large data files such as video clips. As long as network traffic remains within the limits imposed by network bandwidth, network performance will remain acceptable. However, whenever peak network loads exceed capacity, the downward spiral described above will begin, causing increasing periods of poor network performance.

As discussed above, a browser program can be used to access and view Web pages across the Internet by specifying the location (i.e. Internet address) of the desired Web page, or more commonly, by "hotlinking" to Web pages. Common browsers are Lynx, NCSA Mosaic, Netscape Navigator, and Microsoft Internet Explorer. The desired Web page is specified by a uniform resource locator ("URL"), indicating the precise location of the file using the syntax "http://internet address/directory/filename.html".

Web pages are generally described, in terms of layout and content, by way of a language known as "HTML" (HyperText Markup Language). Any particular computer linked to the Internet can store one or more Web pages, i.e. computer files in HTML format, for access by users.

Hotlinking from one HTML Web page to another is accomplished as follows. The user first accesses a Web page having a known address, often on the computer located at the user's ISP (Internet Service Provider). The ISP is the organization providing Internet connectivity to the user. That Web page can contain, in addition to textual and visual data specified in HTML format, "links," or embedded information (in the form of URLs) pointing to the Internet addresses of other Web pages, often on other computers throughout the Internet. The user, by selecting a link (often by pointing and clicking with a mouse), can then access other Web pages, which can in turn contain further data and/or additional links.

Various extensions to HTML, such as Netscape's EMBED tag, allow references to other data to be embedded into Web pages. Some browsers are not capable of handling data other than text and images. Other browsers can handle the data in various ways. NCSA Mosaic, for example, handles references to unknown types of data by allowing the data to be downloaded to the user's computer, and then optionally invoking an external program to view or manipulate the data. Recent releases of Netscape Navigator and Microsoft Internet Explorer take the concept one step further: a browser extension, or "plug-in," can be automatically invoked to handle the data as it is received from the remote Web page. Other means, such as network program "applets" written in the Java language (or a similar language), can be used to extend the functionality of the browser environment or network.

Digital multimedia data can have extremely high storage and bandwidth requirements. In particular, video files can be very large, from approximately 10 megabytes to 10 gigabytes. In order to play video files at speeds approaching their recorded rate at a user's terminal, the files have to be delivered at a fast, constant speed. Too slow, and the image plays back slower than originally recorded. If the speed is uneven, then the video appears jerky, like an old-time movie.

The network design compromises discussed above generally adversely impact the transmission of audio and video data across the Internet. While a user using a browser to "surf" the Web might not notice minor delays and transmission rate variations while retrieving text and still images, such defects become apparent and significant when real-time audio and video information is accessed.

In an attempt to solve these problems, Internet content providers sometimes spread popular content around the Internet on various servers or delivery sites known as "mirror sites." Each mirror site contains information that is essentially identical to that of the original site. For example, if a popular Web site is located in New York, mirror sites might be located in Los Angeles, London, and Tokyo. Accordingly, if a European user is having difficulty accessing the original New York site, he can hotlink to the mirror site that is geographically closest, i.e. London.

However, mirror sites have several disadvantages. For example, mirror sites may be widely distributed geographically, but may not be efficiently distributed on the network in terms of actual usage, network traffic, etc. Thus, New York and Los Angeles mirror sites might both be connected to the same national Internet service provider's network, meaning that difficulty in accessing one of the sites might also affect the other.

Furthermore, mirror sites might not be optimally placed to reduce load on each server. Although an "educated guess" might be made as to where a mirror site should be located, actual usage patterns might differ. Furthermore, there is no guarantee of enhanced performance. The bandwidth of the mirror site might be lower than that of the original site, or it might be overloaded for other reasons.

Moreover, mirror sites are often hosted on a voluntary basis. If a Web site is extremely popular, and a service provider determines that the subject matter might be of interest to its subscribers, that service provider might agree to host a mirror site of the original Web site. Such an arrangement would be attractive to host of the mirror site because people would be drawn to the mirror site, and might hotlink to other content hosted there. On the other hand, such voluntary alliances typically are not reliable and might be severed at any time.

In essence, a mirror site offers a secondary source for data, which may or may not be available, and which may improve

user convenience, but which does not address network bandwidth or efficiency. A mirror site does not account for performance characteristics of the network, nor identify available bandwidth which could be used to efficiently transmit video data while still taking advantage of the existing low-cost pricing schemes such as those on the Internet.

Currently, there is no guidance in selecting optimal locations for delivery sites, nor is there a known method permitting a user to determine which mirror site to connect to that will ensure optimum performance. In fact, the use of a traditional mirror site is voluntary. Typically, a user will try to access the original site (or a known mirror site), and will switch to another mirror site only if performance is found to be insufficient after one or more attempts. This approach is an inefficient utilization of network resources. Clearly, mirror sites are not an optimum solution to the problem of overloaded Web sites. A principal reason for this, among others, is the failure to consider network performance.

Network analysis, particularly the performance of specific paths and links over the Internet, is well known and developed. For example, the "ping" program allows a computer connected to the Internet to determine whether a remote host is accessible. However, the ping program uses a low-priority network protocol known as the ICMP protocol, and accordingly does not provide meaningful performance analysis information. The "traceroute" program follows the transmission of a message from a computer to a remote host, tracking delays along each link, and determining the path taken by the message. The traceroute application can be used to map the flow of data. However, it lacks the ability to provide meaningful performance analysis information. Traceroute only provides route information for a message propagating in one direction, and only for one instant in time.

Moreover, only the connectivity characteristics of paths leading to and from the single computer running the tests are typically determined; expanding the scope of testing is possible but logistically impracticable, since the Internet is so large.

Traditional network analysis techniques such as the "ping" and "traceroute" programs offer a view of network connectivity but provide little understanding of what performance can be expected from providers and mirror sites across the Internet. Therefore, only "guesses" can be made as to where delivery or mirror sites should be located or which mirror sites should be used to optimize performance.

Since video delivery over the Internet has quickly gained in popularity, a need exists for a system that can make sure that a user's video request can, in most cases, be satisfied by video clip stored in a compression format recognized by a CODEC on the user's terminal, thereby eliminating or reducing the user's need to download a new CODEC program.

A further need exists for a method of determining overall network performance. A further need exists for a system applying that method to enable content providers to dynamically locate data delivery or mirror sites at optimum network locations, and to allow users to select optimum mirror sites from which to receive data.

SUMMARY OF THE INVENTION

The invention is directed to a system and method for the optimized distribution of Web content to and from sites located around the Internet. An intelligent mirroring scheme, called here "Smart Mirroring," is used to determine the need for and distribution of mirror sites and to direct user requests for certain Web content to an optimum mirror site. A format selection scheme is used to automatically select a video clip file compressed in a format recognized by a CODEC program already installed and operative on a user terminal.

A number of "smart" delivery or mirror sites are used to distribute popular Web content to various parts of the Internet. A comprehensive scheme of network analysis, based on tests performed by a large number of users, is used to interactively determine the preferred locations for the sites, and to determine the optimum sites to be used by each individual user.

Accordingly, because each individual user is routed to a Smart Mirror or delivery site that provides improved performance, overall network congestion is reduced. In most cases, the improved server is located electronically close to a user in order to decrease the number of network connections over which data must travel, thereby reducing packet loss and delay.

Furthermore, network analysis results allow message traffic to be routed away from those delivery sites and network regions that are already overloaded, and toward underutilized servers and networks. This results in an improvement in throughput as seen by each user, and will thereby increase the appeal of the content offered by content providers using the system. Content providers are able to reach a larger number of users across the Internet without suffering significant decreases in performance.

A system according to the invention begins with an original Web site and at least one additional delivery (or mirror) site. Each user desiring to use the system will be provided, in a preferred embodiment, with software which includes a configuration utility and a client program. The configuration utility is used first to determine which delivery sites provide improved performance for that particular user.

In one embodiment of the invention, the configuration utility first downloads a "delivery site file" from a service provider. This delivery site file contains a list of available delivery sites and a list of network tests to be run. The types of tests and frequency of testing to be performed may be specified in the delivery site file, as dependent on the number of users testing the network and the estimated drain on network or delivery system capacity.

The configuration utility will run a subset of the tests specified in the delivery site file. The test results show which delivery sites yield improved performance for the user, and also contain information on various generalized network capabilities from the standpoint of the user running the tests. The network test results and the identity of the chosen delivery site will be sent (via e-mail in one possible configuration) back to the delivery service provider for incorporation into the service provider's database.

The delivery site chosen by the configuration utility is then used by that user for the retrieval of all content managed by the delivery system service provider. Consequently, when the user is browsing Web content, and finds a particular item, e.g. a video clip, that is managed by the service provider's delivery system, the client software will automatically retrieve it from the specified "Smart Mirror" delivery site. Site preferences and default sites can be updated periodically on request, at specified times, or in response to changes in network load and traffic.

Moreover, because the configuration utility of the invention is performing various network tests and providing the test results to the service provider, valuable data on system and network performance is available. Such data provides information on which "Smart Mirror" delivery sites are

performing effectively and which are not, which Smart Mirror delivery sites are overloaded, and what portions of the Internet might benefit from the addition of more delivery sites or capacity.

Such data also makes it possible to perform such sophisticated network analysis as end-to-end performance measurements, workload characterization, route stability, and outage metrics. Thus, from an engineering standpoint, the mirror service provider can continue to ensure that improved performance is being provided. From a marketing perspective, content providers can be told where to locate Smart Mirror or delivery sites for improved performance, and what ISP provides improved delivery.

A Web page hosting an embedded video clip also includes code to activate the Smart Mirroring and format selection schemes. Accordingly, a video clip selection and retrieval system according to the invention stores each video clip at various locations in a number of different compression formats. A format selection module comprises software programs that instruct the user terminal to determine which CODEC programs are installed at a user terminal, select a preferred CODEC for use, locate video clips stored in a compression format recognized by the preferred CODEC, and redirect or modify a video request so the video delivery system can locate and retrieve the desired clip. Where no appropriate CODEC is detected, the format selection module prompts the user to download and install a preferred CODEC.

In a first embodiment of the format selection module, a video clip is stored in a number of different compression formats at individual delivery sites connected to the Internet. The video clip and its address are referenced on a Web page providing access to the server. The Web page also contains an embedded software program for querying the user terminal to determine what CODECs are installed at the terminal. The embedded program is automatically executed when the user requests a video clip which is referenced on the Web page. If the query detects the presence of a CODEC that can decompress a video clip stored by one of the servers, the embedded program will select that CODEC and request the appropriate video clip.

In a second embodiment of the format selection module, a relatively small program is installed on the browser as a "plug-in" or the like. The "plug-in" embodiment performs the same functions as the embedded software program described in the preceding embodiment and has the added functionality of interacting with the Smart Mirror facilities discussed above.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a block diagram of an illustrative network topology of a system according to the invention, including multiple users and multiple content providers;

FIG. **2** is a flowchart describing the operation of the configuration utility used in a system according to the invention;

FIG. **3** is a flowchart describing the operation of a client program used in a system according to the invention;

FIG. **4** is a flowchart describing the operation of an embedded program embodiment of the format selection module according to the invention; and

FIG. **5** is a flowchart describing the operation of a "plug-in" embodiment of the format selection module according to the invention.

DETAILED DESCRIPTION OF THE INVENTION

The invention is described below, with reference to detailed illustrative embodiments. It will be apparent that the invention can be embodied in a wide variety of forms, some of which may be quite different from those of the disclosed embodiments. Consequently, the specific structural and functional details disclosed herein are merely representative and do not limit the scope of the invention.

Referring initially to FIG. **1**, the Internet **10**, which is intended to be representative of wide-area communications networks in general, is depicted as a "cloud." The Internet is known to be an interconnected network of a large number of computers. Although Internet-connected computers that are "geographically" near each other can be "electronically" near each other on the Internet, such is not usually the case. However, one computer connected to the Internet can communicate with any other computer connected to the Internet; the message will most likely travel over a path comprising a sequence of links, or "hops," between computers that are directly connected to each other.

A first user terminal **12** is also depicted in FIG. **1**. The first user terminal **12** is connected to an Internet service provider (ISP) **14**, which is typically just a computer, router, or terminal server connected to the Internet **10**. An ISP **14** can host additional user terminals, such as a second user terminal **16**. Other ISPs, such as a second ISP **18**, are also connected to the Internet **10**. A third user terminal **20** is shown connected to the second ISP **18**. Only three user terminals are shown; however, it should be recognized that the number of concurrent users of the invention is unlimited, subject to the operational details set forth below.

As is known in the art, content providers are also connected to the Internet **10**. A first content provider **22** might provide a certain kind of content, for example sports scores and highlights. A second content provider **24** might provide a different kind of content, for example business news. Traditionally, if a user (such as the one using the first user terminal **12**) wished to access the content provided by the first content provider **22**, the terminal **12** would query the first content provider **22** directly. A request message would propagate from the terminal **12**, across the Internet **10**, to the content provider **22**. The content provider **22** would send the desired data across the Internet **10** back to the terminal **12**.

Several delivery, or "mirror" sites are shown connected to the Internet **10** in FIG. **1**. A first delivery site **26** might be located a small number of "hops" from the first user terminal **12**. The first delivery site **26** includes a storage module **27** for storing content such as audio/video clips. A second delivery site **28** might be located further away from the first user terminal **12**, but close to the third user terminal **20**. A third delivery site **30** might be as close to the third user terminal **20** as the second delivery site **28** is. As previously noted, a user and a provider or delivery site that are "geographically" near each other might not be "electronically" near each other on the Internet. By decreasing the "electronic" distance between the user and the provider or delivery site, the number of network connections and routers over which data must travel can be decreased.

As discussed above, the Smart Mirroring system acts to improve network performance by decreasing the incidence of the foregoing network problems. Packet loss and delay problems are generally decreased by reducing the number of network connections over which data must travel, although in some cases, the network testing procedure of the invention shows that some longer paths provide better throughput than some shorter paths. Very little packet loss, and essentially no delay, occurs in network cable; it typically is caused by overloaded network storage and routing devices. Because the Smart Mirror sites of the invention are located electroni-

cally near each user, packet losses and delays are reduced. The problem of excessive server utilization is reduced because multiple delivery sites share the load that typically would have been handled by a single server. The relatively low capacity of the network infrastructure becomes less of a problem, because data retrieved from parallel delivery sites in different locations generally need not travel over the same network links.

For the purposes of describing this invention, a delivery site is a "node" on the network which may store data or other files, such as software code, for delivery. The term can also include a site which is responsible for data delivery, including mirror sites, content providers, and servers for broadcast video streams or Web sites.

In the system, a mirror service provider (MSP) **32** is connected to the Internet **10**. The MSP **32**, which exercises a management function over the distribution of delivery sites **26**, **28**, and **30**, and over the allocation of requests to the original and delivery sites from user terminals **12**, **16**, and **20**, includes a database capable of transmitting and receiving data over the Internet **10**.

This management function is facilitated by the use of a configuration utility **34** and a client program **36** run within a storage medium (i.e. random access memory) on the user terminal **12**. Although the configuration utility **34** and the client program **36** are shown in FIG. **1** as a part of only the first user terminal **12**, it should be recognized that any user terminal, such as terminals **16** and **20**, participating in the system will use such software. A user desiring to participate in the system can obtain the software comprising the configuration utility **34** and client program **36** directly from the MSP **32**, or through traditional retail or other channels (such as being part of the browser or operating system of the computer). It should be noted that the functions performed by the configuration utility **34** in the described embodiment of the invention can be integrated into general Internet application software, such as a browser or other network application; a stand-alone program is not necessary.

Configuration Utility

In a preferred embodiment, the configuration utility **34** must be run by the user, either by command or automatically, before the user terminal **12** will have access to the system. The operation of the configuration utility **34** is shown in detail in FIG. **2**.

The configuration utility **34**, when first run on the user terminal **12**, retrieves a delivery site file (step **40**) from the MSP **32** (FIG. **1**). If the user already has a delivery site file (e.g., it was received with the configuration utility **34**), and that delivery site file is sufficiently new, the delivery site file can be retrieved from the local hard disk of the user terminal **12**. This delivery site file contains a list of all available delivery sites (such as delivery sites **26**, **28**, and **30**) and a list of network tests to be run at the user terminal **12**. In the context of the invention, there can be as few as two delivery sites, or if the number of users justifies it, as many as several thousand. The number of sites in principal is unlimited, with each available delivery site represented in the delivery site file.

The delivery site file is generated by the database from within the MSP's computer system. The database application uses information about the user to dynamically determine the optimum tests to run. Consequently, the delivery site file need not contain entries for every delivery site in existence; the list can be tailored to include only those sites which appear appropriate or feasible.

Initially, the magnitude of run-time variation in test configurations for the delivery system users is low; that is, the first group of users all run essentially the same tests. As the delivery service grows, however, the intensity of each user's testing is reduced in order to compensate for the increased magnitude of testing network-wide. The scope of testing and the number of delivery sites tested both can be narrowed to further reduce the aggregate load of network testing.

In one embodiment, the delivery site file will have a format generally as follows:

1. File Revision Number and Message. The file includes this field to determine whether a new version of the configuration utility **34** is available. If the revision number in the delivery site file is higher than the version number for the configuration utility, configuration is not allowed. Instead, the user would be prompted to acquire a newer version of the configuration utility **34**. File revision verification as described herein ensures that the most up-to-date delivery site selection algorithms are applied to the test data generated by the configuration utility **34**.
2. A list of available Smart Mirror delivery sites. For each available delivery site, the following information is provided:
   a. Host name. In the known Internet format of "www.server.com."
   b. IP Address. A numerical Internet address in the known format. The address is presently a 32-bit number of the form w.x.y.z., where w, x, y, and z are each in the range of 0 to 255.
   c. Alternate Name. An informal name such as "The First Mirror Site."
   d. A list of tests to be executed. For each test, the following information is provided:
      i. Test ID. Each type of test has a unique identifier known to the configuration utility **34**.
      ii. Weighting factor. Each test will be weighted by a specified percentage.
      iii. Frequency. Each test is not necessarily run every time. This field specifies a probability, determining how often a particular test will be run.
      iv. Additional Information (optional). For certain tests, additional information may be needed.
   e. Site Preference Level. Each site can be given a weighting, or preference level, between, for example, 1 and 100. As discussed below, aggregate data in the MSP's database is used to perform network usage analysis not possible with only the single user's instantaneous end to end testing. The weighting factor provided here is used to incorporate the test results received from the service provider's database. This weighting factor is also used to limit assignment of new users to a delivery site once a predetermined maximum usage level has been reached.
   f. Test Site Flag. If this flag is enabled, the foregoing tests will be run, but the site will not be assigned as a delivery site even if it yields the best performance.
   g. Content Provider Groups. Each site can belong to one or more content provider groups, thereby mirroring only certain content. If a user is not interested in the types of data hosted by a particular delivery site, then it does not need to be tested.

The configuration utility **34** then queries the user (step **42**) for various items of information needed in the configuration process, for example, the user's name, e-mail address, password, modem speed, and information related to access control (e.g. what levels of various attributes are viewable by the user). The access control mechanism will be dis-

cussed in further detail below. In one embodiment of the invention, the information received from the user is encrypted and stored in a configuration file on the user terminal **12**.

The configuration utility **34** then determines whether the user terminal **12** is connected to the Internet (step **42**). If not, it will initiate a connection (step **44**) or prompt the user to do so.

A series of network tests is then performed (step **46**). One or more tests can be performed for each available site listed in the delivery site file; not all sites in the file need to be tested.

The following test types are presently considered to provide useful data.

1. Ping. Provides information on whether a remote server is reachable, and if so, how long it takes for a low-priority message to travel round trip from the user terminal **12** to the remote server and back. Ping is a simple test useful in deciding whether a site is available for further evaluation. Excessive times returned by the ping application can be used to eliminate delivery systems which are far too "slow" for effective information delivery. This test is used by the terminal to reduce the number of delivery sites tested.
2. Traceroute. Provides information on what route is taken by a message from the user terminal **12** to a remote server, including what systems are used along the way, and how long each hop takes. Traceroute is used by the configuration program **34** to document the path of information transmission. Several traces with differing results might indicate that the stability of the route from a particular user to a specific server is not acceptable. Previously aggregated data on particular routes, from the service provider's system database, may also influence the decision to choose a particular delivery site for a specific user. Route stability is the primary consideration.
3. Reverse Traceroute. Provides information on what route is taken by a message from a remote server to the user terminal, including what systems are used along the way, and how long each hop takes. Reverse Traceroute is used by the configuration program to document the path of information receipt. Several traces with differing results might indicate that the stability of the route from a particular server to a specific user is not acceptable. Previously aggregated data on particular routes, from the service provider's system database, may also influence the decision to choose a particular delivery site for a specific user. Again, route stability is the primary consideration.
4. Dynamic Traceroute. Similar to traceroute or reverse traceroute, but between any specified pair of computers on the Internet. Dynamic Traceroute is used by the configuration program to document a path of information transmission. Several traces with differing results might indicate that the stability of the route between two network locations is not acceptable. Previously aggregated data on particular routes, from the service provider's system database, may also influence the decision to choose a particular delivery site for a specific user. As above, route stability is the primary consideration.
5. Name Server Resolution Delay. If the numeric Internet address is unspecified, a name server lookup is performed to determine what numeric address corresponds to the desired host name. This process can take a substantial amount of time.
6. Throughput. A sample file is downloaded, or partially downloaded, from the remote server to determine the actual throughput in bytes per second.
7. Throughput variation. A sample file is downloaded, or partially downloaded, from the remote server to determine if the throughput is relatively constant or fluctuating.
8. Error rate. A sample file is downloaded, or partially downloaded, from the remote server to determine if the transmission is subject to transmission errors. This information is obtained by counting the number of error message packets returned to the user, thereby learning of the error rate from the user to the server, and by tracking the number of bytes received as a fraction of the number of bytes transferred, thereby learning of the error rate from the server to the user.
9. Packet Fragmentation. A sample file is downloaded, or partially downloaded, from the remote server to determine if the transmission is subject to fragmentation or out-of-order packet reception.
10. Capacity Query. If the remote server is so enabled, the configuration utility **34** queries the server to determine its transmission capacity and its average load. This information is collected via the Simple Network Management Protocol ("SNMP"), which is supported by nearly all Internet servers.
11. Macroscopic Network Analysis. The data accumulated by the MSP database offers a global view of network behavior. This information permits the Smart Mirror system user to have a historical view of the performance of the available delivery sites. The accumulated data is manipulated by the delivery system database to analyze network performance, in order to emphasize usage in high-capacity areas of the network, while deemphasizing usage in areas already experiencing diminished performance.

Information on how each of the foregoing tests are performed is well known in the art of network analysis. See, e.g., Bob Quinn and Dave Shute, *Windows Sockets Network Programming* (Addison-Wesley 1996). In one embodiment of the invention, testing is accomplished by performing a "ping" test to verify whether a server is reachable, a series of small (e.g. 20K) downloads, a series of large (e.g. 200K) downloads, and "traceroute" and "reverse traceroute" tests to document delivery paths.

The traceroute information is used by the MSP **32** to correlate test data to information in its database; in that way, particularly bad network links and servers can be identified. Such information is provided in the delivery site file discussed above; if a particular link or server is known to be unreliable, based on information obtained from other users, an individual user can be routed away from it, even if a single test gives good results.

The short downloads are used to determine server capacity. The name server resolution delay can be determined by such a test, as well as the time it takes a server to begin sending data. The later result is strongly related to server load, capacity, and performance.

The long downloads allow the configuration utility **34** to determine how packet loss, network congestion, and server utilization affect file delivery. It is not ideal to determine which of the foregoing factors is causing decreased performance based on test results from a single user. However, such results in the aggregate, as stored in the database maintained by the MSP **32**, indicate the root causes.

It should be noted that some of the test results may be used in conjunction with other test results. For example, the load

on a delivery site as determined through a capacity query can be divided by the results of a throughput test to derive an average expected download time, given the load characteristics of the server.

After all specified tests are run, the results are collected and processed (step **48**). It is possible that certain tests were not able to be successfully performed; in such cases, the results should indicate an appropriate worst-case value (e.g. zero throughput or extremely high delay).

It is important to note that not all possible tests will be performed each time the configuration utility **34** is run. When a large number of users is using the system, a substantial drain on server and network capacity would be caused by the testing procedure alone, increasing the downward spiral of network performance previously discussed.

As noted above, a test frequency number is stored in the delivery site file for the purpose of dynamically controlling the number of users performing a test. The testing performed by the configuration utility **34** is performed to achieve statistical confidence in deciding which delivery site is best suited for data delivery to a particular user. Statistical confidence is obtained by either testing a small sample of users sufficiently well and using that data to influence the choice of a delivery site, or by having a large number of users each "lightly" test several available sites and using that data in the aggregate.

Accordingly, when the system is used initially, a relatively small number of users are "enrolled" in the system. The delivery site file maintained by the MSP **32** reflects those conditions, and requires each user to test the network (through the configuration utility **34**) relatively heavily. As the number of users increases, the delivery site file is modified to decrease the tests performed by each user. By the time a very large number of users are using the system, the configuration utility **34** may predominantly test for delivery site reachability (via a "ping"-type test, as discussed above), and rely primarily on test data provided by other users and stored in the database maintained by the MSP **32**. However, even when many users are testing the system, a small number of users (e.g. one in 5,000) may be selected to run a comprehensive set of tests.

Preferably, testing should not contribute more than approximately 5% of total server load. One way to reach this goal is to lightly test a large number of servers, yielding a group of delivery sites having adequate performance. This group of delivery sites can then be used in rotation to retrieve data. Information on multimedia clip actual download times for each of the delivery sites in the group is accumulated as discussed below, and further information on delivery site performance can then be furnished to the MSP **32** transparently, without the need for further outright testing.

Accordingly, on the basis of the collected test results, and on information provided in the delivery site file by the MSP **32**, the configuration utility **34** determines which delivery site, or group of delivery sites, is best for the user terminal **12** (step **50**). This determination can be made numerically by weighting the various tests performed and comparing the score for each site.

In a presently preferred embodiment, for use in a low-traffic environment with a relatively small number of delivery sites and users, the configuration utility **34** relies primarily on ping and throughput tests for each available delivery site. An initial ping test is performed to determine if a delivery site is reachable. Short and long downloads are performed in the throughput tests to determine the maximum and minimum throughputs from the delivery site, and to determine whether throughput variation is small enough to accommodate the transmission of video data. Accordingly, those tests are all given high weights. Other tests, such as traceroute, can be performed, and the results reported to the MSP **32**, without playing a role in the choice of delivery sites (such other tests can be given weights of zero, or nearly zero, for example). As the size of the system increases, and additional delivery sites and users are enrolled, the site selection formula can be altered, by changing the delivery site file contents, to reflect changing network conditions.

In one embodiment of the invention, a proprietary graphical interface is provided so that the location of the user and the locations (both geographic and electronic) of each site tested can be displayed on a monitor connected to the user terminal **12**, allowing a visual indication of the relative distances between sites. In one embodiment, the display is shown in the form of a "radar screen," upon which the user terminal **12** and delivery sites are displayed as "blips" superimposed over a map of the pertinent geographical region. In order to encourage the user to use the application and to offer more network-wide data, the user interface can allow the user to enter an "ad-hoc" test site for additional performance testing. In this case, the configuration utility will test either the default Web page file (e.g., "index.html") or a specific file requested by the user. Analysis results from the user-selected site are adjusted so that reasonable comparisons can be made with results from other sites.

It should be noted that multiple sets of delivery sites can be maintained by the invention, to accommodate several groups of content providers. Each content provider might be mirrored only at certain sites. Accordingly, for each content provider having a unique set of delivery sites, a primary delivery site is selected by the configuration utility **34**. To accomplish this, the foregoing tests can be run once, and then, in one embodiment, a numerical weighting can be applied to each appropriate set of delivery sites. A plurality of Smart Mirror sites is selected, one for each content provider group. The content provider groups is specified in the delivery site file; each possible delivery site is identified as belonging to one or more content provider groups. When content provider groups are used, there can be as few as two groups; the maximum number is essentially unlimited.

It should also be noted that a prioritized ranking of delivery sites can also be generated and maintained. If this is done, failure of the primary Smart Mirror site to respond will allow the system to fall back to the next-highest ranked Smart Mirror site.

After a Smart Mirror site is selected, certain data will be sent to the MSP **32** (step **52**) via e-mail or other Internet electronic protocol. The information received by querying the user, the identity of the selected Smart Mirror site, and all raw test data and results, including the time and date at which each test was run, is compiled into a text file (which is encrypted in one embodiment). Upon receipt by the MSP **32**, the data is stored in a database for use in managing and analyzing the system.

Finally, the configuration utility **34** saves the identity of the selected Smart Mirror site for each set of delivery sites, or the prioritized list, to the (encrypted) configuration file (step **54**). The configuration utility may also save information on relative performance for each tested delivery site. The client program **36** uses the encrypted configuration file to download data files (video clips or other content) from the appropriate Smart Mirror site.

It should be noted that in the operation of the system, the MSP **32** performs certain functions. The MSP **32** maintains the delivery site list, adding and deleting sites as necessary.

The MSP **32** also maintains the database of network performance, containing information received via e-mail or other means from users running the configuration utility **34**. As large amounts of data are received from numerous users, the database can provide valuable information on the performance and other characteristics of the Internet and portions thereof. Various data processing techniques are known to derive such information.

The locations of the delivery sites used with the invention are ultimately determined by a number of factors, including marketing considerations and cost/benefit analyses. However, the data stored in the MSP's database can confirm the utility of placing a delivery site at a given location on the Internet or other network. In one embodiment, servers are located on each major backbone (portion of the Internet maintained by a single corporation) and on other Internet lines serving large numbers of users, such as the major lines operated by the Regional Bell Operating Companies ("RBOCs"). In certain networks serving large numbers of users or having heavy video delivery traffic, servers can be placed at major Points of Presence ("POPs") for the network to ensure that each user has excellent to a fast server.

Once the configuration utility **34** has been run, the user can use the system to enable and facilitate the receipt of data files, specifically video clips, audio clips, software programs, and other content.

As time passes and the usage patterns of a user's region of the Internet change, the user might become dissatisfied with the performance of the Smart Mirror site associated with his user terminal **12**. If that happens, the user is free to re-run the configuration utility **34**. By that time, additional delivery sites might have been placed into service, or a different pre-existing site might perform better than the one previously assigned. Furthermore, if the player program **36** determines that the selected Smart Mirror site is not performing adequately (e.g., it has failed three times out of ten attempts), the player program **36** can prompt the user to re-run the configuration utility **34**. In another embodiment of the invention,the testing and mirror assignment is run automatically with each request for a file on the Smart Mirror service or at some intermittent times such as after every other, every third, every tenth or every one hundredth request.

Smart Mirroring

In one embodiment of the invention, the Smart Mirror system is used to locate a delivery site from which to download a video or audio clip ("clip") referenced on a Web page. In this embodiment, the client program can be referred to or considered a "player program." The player program, in addition to carrying out the functions of the client program **36**, enables the retrieval and playback of video data. Ordinarily, a browser program **38** is run on the user terminal **12** to view Web content. Browser programs typically used include NCSA Mosaic, Netscape Navigator, and Microsoft Internet Explorer. The browser program **38** allows the user to hotlink among various Web sites on the Internet.

The EMBED tag is used within HTML documents to indicate which Web pages include content managed by the system. When the browser program **38** receives a Web page containing an EMBED tag, a download of the file referenced by the tag is commenced, and the file type is analyzed. If the file is of a type handled by the player program **36**, e.g. MPEG, the browser program **38** initiates the player program **36**. The contents of the tag are then passed by the browser program **38** to the player program **36**.

The player program **36** (FIG. 1) provides the Smart Mirroring services facilitated by the MSP **32**. The operation of the player program **36** is shown in detail in FIG. 3.

The player program first analyzes the EMBED tag to determine if there is an "SM" (Smart Mirror) parameter (step **60**); the presence of such a parameter indicates that the embedded clip is enabled for Smart Mirroring. Data associated with the "SM" parameter specifies the particular content provider from which the desired clip originated, as well as the group of mirror servers that particular content provider uses.

If the player program **36** determines that the EMBED tag references a video clip or other content handled by the system (step **62**), the transfer of the embedded clip from the content provider **22** is stopped. The player program **36** then extracts access control or rating information from the EMBED statement (step **64**), if any exists. This rating information is compared against the reference levels stored in the configuration file stored at the user terminal **12** (step **66**). If rating information does not exist for the clip, the configuration file is queried to determine whether unrated clips, as defined below, may be played (step **68**). Based on the foregoing information, the player program **36** will authorize or decline the viewing of the desired clip.

If playback is authorized, the player program **36** attempts to find the referenced clip on the local computer belonging to the user terminal **12** (Step **70**). If it exists there, it is not re-downloaded, and can be played directly on the computer (from the disk or from RAM) (step **72**). However, the time and date of creation of the clip on the local computer is first verified against the time and date for the clip available on the network, to determine if the stored clip is the most recent version (step **74**). If it is not, the stored clip is discarded (step **76**) and the download proceeds as follows.

If the clip does not exist on the local computer, the player creates a new URL (step **78**) in the following form: "http://", plus the IP address of the selected Smart Mirror site stored in the configuration file, plus the path name to mirror files (e.g. "/pub/mirror/"), plus the name of the content provider taken from the "SM" parameter in the EMBED statement, plus the filename taken from the EMBED statement. The constructed URL is used to retrieve the selected clip from the appropriate Smart Mirror site selected by the configuration utility **34** (step **80**). If more than one set of delivery sites exists for different content providers, the "SM" parameter is further used by the player program **36** to determine which Smart Mirror site in the configuration file is to be used in the constructed URL (step **82**).

If the clip corresponding to the constructed URL is not found at the Smart Mirror site, or is unable to be accessed, then the download proceeds from the next-highest ranked Smart Mirror site in the configuration file (step **84**). If all delivery sites fail, the download proceeds from the original content provider's site as specified directly by the EMBED statement.

If playback is disallowed, the player prevents the clip from being transferred (step **88**) and displays a bitmap (step **90**) advising the user that the download is not permitted.

If the player program **36** determines that the EMBED tag references a video clip or other content not handled by the system, the player will check whether the access control level set in the configuration file allows the user to play these clips or other files which are considered "unrated" (step **92**). If so, the clip is transferred from its original content provider **22** by traditional means (step **94**), and the player program **36** displays the downloaded file (step **96**). If not, the player prevents the clip from being transferred (step **98**) and displays a message (step **100**) advising the user that the download is not permitted.

Upon download, the data file representing the desired clip is stored within a specified data area on the local computer,

usually on the hard disk, belonging to the user terminal **12** (step **102**). In one embodiment, this data area can be managed on a least-recently-used basis by the player program **36**. That is, if no room in the data area remains for a new clip, the least-recently-used (or viewed) clip or clips can be discarded to make room (step **104**).

In one embodiment of the invention, the client program **36** is capable of sending messages to the MSP **32** (step **106**) to reflect whether downloads were successful. This message contains the Internet address of the user terminal **12**, the identity of the selected server set, the Internet address of the site used to accomplish the download, the Internet addresses of all sites which failed, the name of the file downloaded, and the time to download the file. This information can also be used by the MSP **32** to track file downloads and to determine, in real time, whether there are any problems with any Smart Mirror sites.

Alternatively, the client program **36** can maintain a small local database of file transfer performance. Each download would then be timed. Specifically, information can be gathered on the time it takes a server to begin sending the requested file, the stability of the data transfer rate, and the error rate of the transfer. At some interval (e.g. weekly or once every 100 downloads), a message containing the accumulated file transfer performance information, as well as the user and server information discussed above, would be sent (automatically or upon request) to the MSP **32** (step **106**) to update the MSP's database. This additional information increases the MSP's "knowledge" of network performance without incurring any additional testing overhead.

This data is especially valuable in ascertaining the performance of delivery sites, for the purpose of assessing the quality of service purchased from the delivery site provider, and for documenting the quality of service to content providers, to support the cost of the system. It is recognized, however, that much of the same information can be obtained through new users running the configuration utility **34**.

Furthermore, the provision of download information to the MSP facilitates the use of the invention as a premium subscription-based service. As successful downloads are tracked in a database, each user can have an associated "account" to track charges. The user can be charged for use of the Smart Mirror system by the file, by the megabyte, by the month, or by other known means. In one embodiment, the EMBED tag associated with a file contains billing information, or a "price" for the file. The invention's tracking of download performance allows discounts or credits to be issued if downloads are found to be unduly difficult or slow.

To ensure that files stored on Smart Mirror delivery sites are used only by authorized users of the invention (e.g. those users having paid accounts), the files stored at the delivery sites can optionally be in encrypted form, and the downloading step described above can include a decryption step. Such encryption and decryption can be performed by well known means.

As discussed above, the clips managed by the invention can have content rating information associated therewith. This is accomplished by providing a "PG" parameter in the EMBED statement corresponding to the clip. In one embodiment, four characteristics are rated: nudity, sexuality, profanity, and violence. Accordingly, the PG parameter can be specified by a four-digit argument. Each characteristic is rated on a scale of one to three. One corresponds to no filtering (i.e. all content is allowable), two corresponds to some filtering (e.g. equal to levels typically allowed in broadcast television), and three corresponds to the most extensive filtering (e.g. for children). The ratings levels contained in the EMBED statement for a file are compared to the ratings filter levels contained in the configuration file stored at the user terminal **12** in the foregoing authorization process, and only authorized files are transferred.

Format Selection

The invention is capable of selecting a preferred file format from a plurality of available formats. Accordingly, the storage module **27** of the first delivery site **26** (FIG. **1**) includes storage for a plurality of video clips in different formats. Four clips **116**–**119** are shown, although any number can be used under the system and method of the invention.

Likewise, the browser **38** (FIG. **1**) has installed a plurality of CODECs. Three CODECs **110**–**114** are shown, although any number can be used under the system and method of the invention.

One embodiment of the format selection component of the invention will be described in conjunction with the flowchart of FIG. **4**. The format selection process attempts to identify one of the video clips **116**–**119** as being in a preferred format that is both stored in the storage module **27** (FIG. **1**) and supported by one of the CODECs **110**–**114** (FIG. **1**).

A Web page embedding a reference to a video clip for use with the invention, as described in FIG. **4**, also includes an embedded software program. This software program can be written in the JavaScript language, which is known in the art and compatible with a number of Web browsers presently available, including Netscape Navigator and Microsoft Internet Explorer.

First, the Web page containing the video clip is loaded by the user terminal (step **120**). The embedded software program "script" is then read and interpreted (step **122**) by the browser.

The embedded script specifies a sequence of preferred CODECs and corresponding video clip format types. Clips in each of the specified formats are stored on one or more delivery sites (FIG. **1**). The CODECs are specified in the script in a prioritized order. If the first-listed CODEC is installed on the user terminal, it will be used. If only a lower-listed CODEC is installed, it will be used instead.

First, the embedded script queries the browser to check if a preferred CODEC is installed (step **124**). If not (step **126**), the embedded script verifies whether more CODECs are supported and available for use (step **136**), and if so, returns and queries the browser again (step **124**).

If one of the preferred CODECs is installed (step **126**), a URL is created from the storage location of the video clip (step **128**). For example, such a created URL might be "http://www.deliverysite.com/clips/watchme". Note that the created URL does not have a format type extension. The created URL is then modified (step **130**) by appending a format type extension (e.g. ".mpg" for MPEG-formatted clips, or ".avi" for Microsoft Video for Windows-formatted clips) to the location of the video clip. The format type extension used depends on the selected CODEC. The resulting URL (e.g. "http://www.deliverysite.com/clips/watchme.mpg") uniquely specifies a video clip file in a format recognized by the preferred CODEC installed on the user terminal. This URL is then transmitted to the delivery site specified by the URL, and the clip is downloaded (step **132**) and played (step **134**). When the video clip file is received, the browser automatically invokes the proper CODEC for its display.

If all preferred CODECs have been checked (step **136**) and none is installed on the user terminal, the embedded

script prompts the user to install a preferred CODEC (step 138). If the user chooses to do so (step 140), the user can be given a further choice of CODECs to download (step 142), or this choice can be made automatically by the embedded script. The CODEC is then downloaded (step 144) and installed (step 146). The embedded script is re-executed to check for proper installation of the new CODEC, and to use it if it installed correctly (steps 124–134). If the user does not want to install a new CODEC, a failure message is displayed (step 148) and no video is downloaded or played.

Under certain circumstances, the installation of a CODEC (step 146) might not be accomplished automatically by the embedded script. For example, current versions of Netscape Navigator will not recognize a new plug-in until the application is exited and re-started. In such a case, the embedded script can, prior to downloading the CODEC, query the browser to determine what variety it is (e.g. Microsoft Internet Explorer or Netscape Navigator), and take alternative steps depending on the result of the query. In the latter case, for example, the embedded script can provide the user with instructions on how to manually install the downloaded CODEC. On the other hand, Microsoft Internet Explorer allows ActiveX controls, programs operable within the browser, to be downloaded and installed without user intervention; the embedded script can contain browser-dependent code to implement this feature. In a like manner, different CODEC programs can be selected for use with the different browser environments.

The above embodiment of the format selector module operates by appending a format type extension to an otherwise static URL referring to a video clip. Alternatively, the format selector module can be implemented such that alternative formats are stored at different delivery sites. In this alternative implementation, the URL is created (step 128) and modified (step 130) in one step;

each preferred CODEC causes an entirely unique URL, rather than only a unique file type extension, to be used. For example, "http://www.deliverysite.com/clips/watchme.mpg"might represent an MPEG version of a particular video clip, while "http://www.othersite.com/videos/watchme.avi"might represent an AVI version of the same clip.

It should be noted that the embodiment of the format selection module described with reference to FIG. 4 does not interact with the Smart Mirroring system as previously described. However, unique URLs for different clip formats can be used to spread demand for a certain clip across several delivery sites, thereby implementing a primitive form of mirroring.

A second, presently preferred embodiment of the invention is capable of file format selection in conjunction with mirror site selection. This embodiment, which uses an embedded software program ("script") along with a pre-installed plug-in program, will be described in conjunction with the flowchart of FIG. 5.

First the Web page containing the video clip is loaded by the user terminal (step 160). The embedded software program "script" is then read and interpreted (step 161).

The embedded script verifies whether the format selection plug-in is installed (step 162). If not, the script gives the user an opportunity to download and install the plug-in (step 164). If the user does not want to install the plug-in (step 166), then the script proceeds as described in FIG. 4 (label "A", step 168, transferring control to step 122).

Otherwise, if the user wants to install the plug-in (step 166), the plug-in is downloaded (step 170) and installed (step 172). As discussed above, the plug-in might not be installable automatically by the script. If that is the case, the user can be given instructions to install it manually.

If the plug-in is already present, or the user has taken the appropriate steps to install it, the plug-in is then invoked by the embedded script (step 174). This can be accomplished by an "EMBED" statement specifying an embedded file having a type (or extension) associated by the browser with the format selection plug-in.

The EMBED statement also specifies parameters to be used by the plug-in for format selection. The plug-in retrieves those parameters (step 176) comprising a prioritized list of preferred CODECs and file type extensions.

The plug-in then, like the embedded script embodiment, queries the browser to determine whether a preferred CODEC is installed (step 178). If not (step 180), the plug-in verifies whether more CODECs are supported and available for use (step 182), and if so, returns and queries the browser again (step 178).

If a preferred CODEC is installed (step 180), the plug-in queries the browser to determine if the functions of a request redirector are available (step 184). The redirector implements the features of Smart Mirroring, as discussed above, and may be implemented as a separate plug-in from the format selector module, or may be implemented as part of the same plug-in. In either case, the functions of the redirector may or may not be available, depending on whether the user has subscribed to a Smart Mirroring service, configured the software properly, or other considerations. If the redirector is not available (step 186), the user is prompted to download and install the appropriate software (step 188).

Whether the redirector is available or not, a URL is then created by the plug-in (step 190) from the parameters passed in the EMBED statement. As discussed above in association with FIG. 4, the created URL comprises a static video location; the URL is then modified by appending a file type based on the preferred CODEC present on the user terminal (step 192).

The clip is then downloaded (step 194), either directly, or through the redirector (i.e. player program 36) implementing the Smart Mirroring feature of the invention, as discussed in conjunction with FIG. 3. Specifically, if the player program 36 is present, control is passed to step 60, which then handles the downloading of the clip. Playback (at step 72, 96, or 108) is accomplished by the appropriate CODEC, automatically invoked by the browser or the player program 36.

If the clip is downloaded directly (and the redirector features are not available), the clip is played by traditional means. However, the format selection plug-in may have associated with it a configuration file, containing a listing of delivery sites containing the video clips managed by the invention. Instead of using the URL stored on the Web page for the download of a clip, the plug-in can make a random selection from the list of delivery sites, and append the name of the clip and the preferred format type to that selected delivery site. The download can then take place (step 194) from the randomly selected delivery site. While this does not accomplish the Smart Mirroring method, it does accomplish a certain level of load distribution. Although the choice made at a particular user terminal might not be optimum for that terminal, video clip demand will be spread over a plurality of delivery sites.

When the video clip file is received, the browser automatically invokes the proper CODEC for its display (step 196).

If all preferred CODECs have been checked by the plug-in (step 182) and none is installed on the user terminal,

the embedded script prompts the user to install a preferred CODEC (step 198). If the user chooses to do so (step 200), the user can be given a further choice of CODECs to download (step 202), or this choice can be made automatically by the plug-in. The CODEC is then downloaded (step 204) and installed (step 206). The plug-in then checks for proper installation of the new CODEC, and uses it if it installed correctly (beginning at step 178). If the user does not want to install a new CODEC, a failure message is displayed (step 208) and no video is downloaded or played.

As above, the installation of a CODEC (step 206) might not be accomplished automatically by the embedded script. Accordingly, a browser-dependent series of steps can be undertaken to either automatically install the CODEC or give the user instructions for manual installation, as discussed above in conjunction with FIG. 4.

The latter embodiment of the format selection module is described as having two primary functions: first, selecting the preferred CODEC and file format, and second, choosing a delivery site by way of the Smart Mirroring system and method. It should be noted that the precise order of these two operations is not of primary importance. Although the described embodiment performs format selection first and delivery site selection second, it is understood that the reverse order is equally functional, and may have certain advantages and disadvantages when compared to the disclosed embodiment.

In view of the above, it will be appreciated that embodiments of the invention may be employed in many different applications to permit the acquisition and analysis of performance data for networks between a given user and content provider or delivery site. Thus, although the described embodiment illustrates the system operating within the context of the Internet, it is recognized that such a system could prove to be useful in other network environments, such as corporate "intranets."

Moreover, although the illustrative embodiments are described primarily for use in a video delivery system, it should be recognized that a system according to the invention can be used to distribute various other kinds of computer data (e.g. application programs, database files and other business information, virtual reality files, multimedia such as Macromedia Shockwave files, and large text files such as books) as well. Such other types of data can be managed by the invention in different content provider groups as discussed in detail above; a different type of program (rather than the player program 36 or the CODECs) typically would be invoked at the user terminal 12 to view or use other types of data.

It should also be noted that certain functionality described as performed at the user terminal 12 (specifically, certain functions performed by the configuration utility 34, or client/player program 36) can be implemented as a standalone program, as a "plug-in" or "helper application" to run within a browser program, or as a Java applet downloaded from a delivery site to run within a browser environment. For user terminals capable of running the Microsoft Windows operating system, an environment known as Microsoft ActiveX is also useful, and can be used to implement software programs that operate similarly to "plug-ins" as described above.

What is claimed is:

1. A method for serving a media file in a preferred format, comprising:

storing copies of the media file on a set of delivery sites;

responsive to receipt at a content provider site of a request from a client, serving a page that includes a reference to the media file together with given code, wherein the given code is executable at the client to identify a preferred format for the media file;

locating a preferred delivery site from the set of delivery sites, wherein the step of locating a preferred delivery site comprises:

analyzing given network performance metrics; and

selecting the preferred delivery site based on analysis of the given network performance metrics; and

responsive to receipt at the preferred delivery site of a request for the media file in the preferred format, serving the media file in the preferred format.

2. The method as described in claim 1 wherein the set of delivery sites are located at Internet Points of Presence (PoPs).

3. The method as described in claim 1 wherein the preferred delivery site is electronically near the client.

4. The method as described in claim 1 further including the step of serving to the client a media player for use in rendering the media file in the preferred format.

* * * * *

US006345279B1

(12) **United States Patent**
Li et al.

(10) **Patent No.: US 6,345,279 B1**
(45) **Date of Patent: Feb. 5, 2002**

(54) **METHODS AND APPARATUS FOR ADAPTING MULTIMEDIA CONTENT FOR CLIENT DEVICES**

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(73) Assignee: **International Business Machines Corporation**, Armonk, NY (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **09/298,576**

(22) Filed: **Apr. 23, 1999**

(51) **Int. Cl.**[7] **G06F 17/30**

(52) **U.S. Cl.** **707/104**; 707/3; 707/5; 707/10; 707/501; 707/514; 709/224; 709/231; 709/217

(58) **Field of Search** 707/103, 3, 102, 707/10, 513, 104, 5, 501, 203, 514; 709/224, 203, 217, 226, 231, 232, 227, 246, 235; 370/252; 713/201

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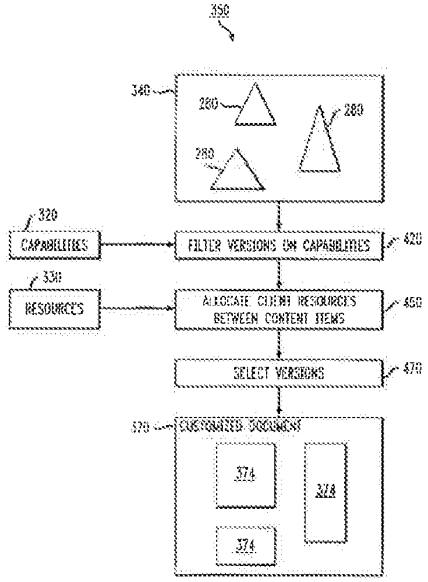
Primary Examiner—Jean M. Corrielus
(74) *Attorney, Agent, or Firm*—Ryan, Mason & Lewis, LLP; Robert P. Tassinari, Jr.

(57) **ABSTRACT**

A method of adapting multimedia content to a client device, wherein the multimedia content includes one or more items and the client device has capabilities and resources associated therewith, is provided. The method includes transcoding the multimedia content into a plurality of transcoded content versions, wherein the plurality of transcoded content versions have different modalities and resolutions associated therewith. Next, the transcoded content versions that are not compatible with client device capabilities are filtered out. Then, at least a portion of the resources associated with the client device are allocated among the one or more items of the multimedia content. Lastly, one or more of the transcoded versions of the multimedia content are selected to generate a customized content based on allocation of the client device resources.

31 Claims, 5 Drawing Sheets



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A. Fox et al., "Adapting to Network and Client Variability Via On-demand Dynamic Distillation," ASPLOS–VII, Cambridge, MA, pp. 1–11, Oct. 1996.

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FIG. 1

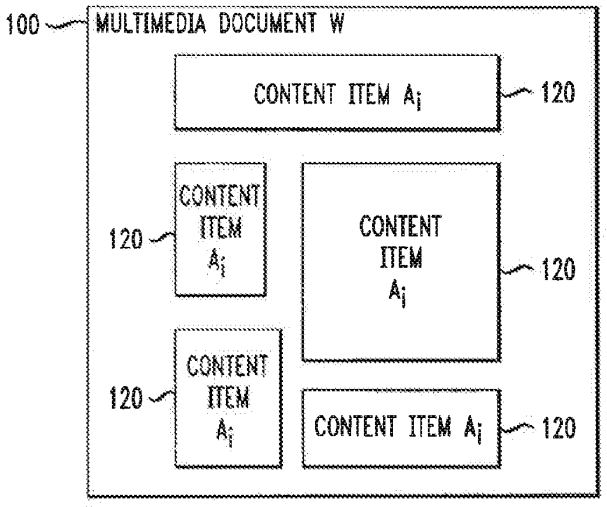

100
MULTIMEDIA DOCUMENT W
CONTENT ITEM A_i
120
CONTENT ITEM A_i
120
CONTENT ITEM A_i
120
CONTENT ITEM A_i
120
CONTENT ITEM A_i
120

FIG. 2

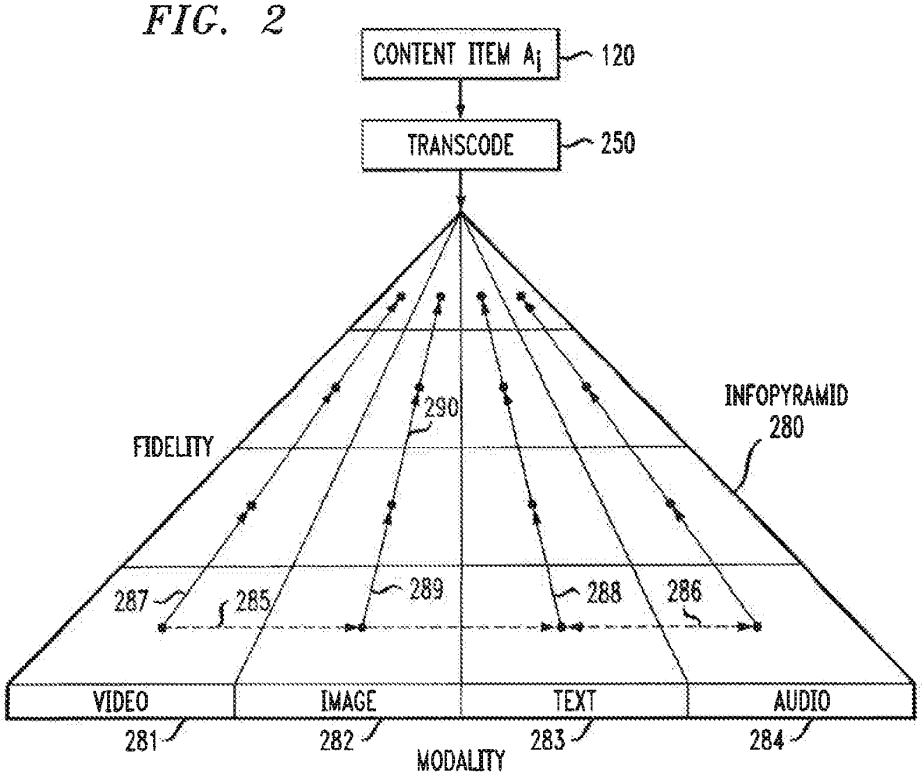

CONTENT ITEM A_i
120
TRANSCODE
250
INFOPYRAMID
280
FIDELITY
290
287
285
289
288
286
VIDEO
281
IMAGE
282
TEXT
283
AUDIO
284
MODALITY

FIG. 3

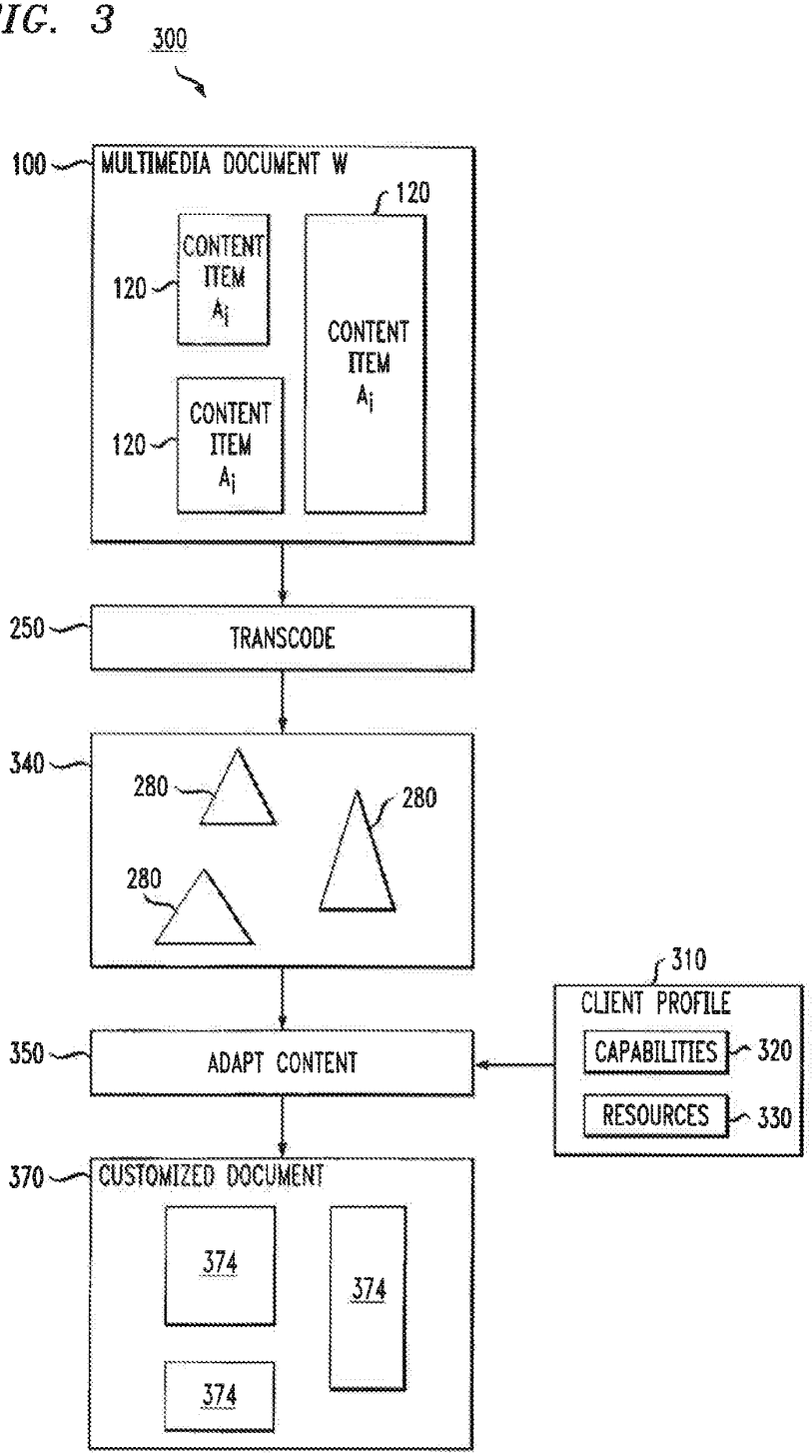

300
100
MULTIMEDIA DOCUMENT W
120
CONTENT ITEM A_i
120
CONTENT ITEM A_i
120
CONTENT ITEM A_i
250
TRANSCODE
340
280
280
280
310
CLIENT PROFILE
350
ADAPT CONTENT
CAPABILITIES
320
RESOURCES
330
370
CUSTOMIZED DOCUMENT
374
374
374

FIG. 4

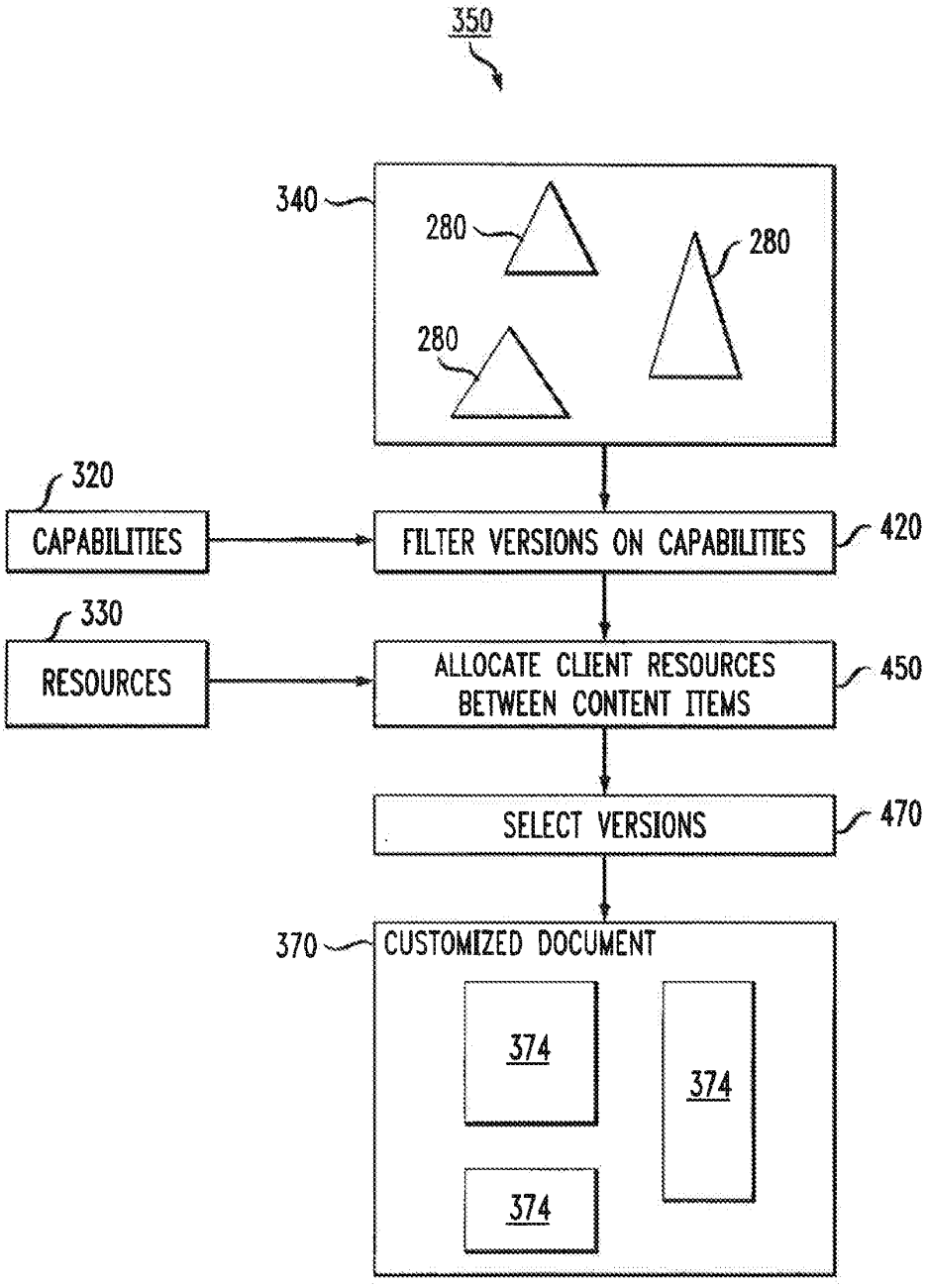

350
340
280
280
280
320
CAPABILITIES
FILTER VERSIONS ON CAPABILITIES
420
330
RESOURCES
ALLOCATE CLIENT RESOURCES BETWEEN CONTENT ITEMS
450
SELECT VERSIONS
470
370
CUSTOMIZED DOCUMENT
374
374
374

FIG. 5

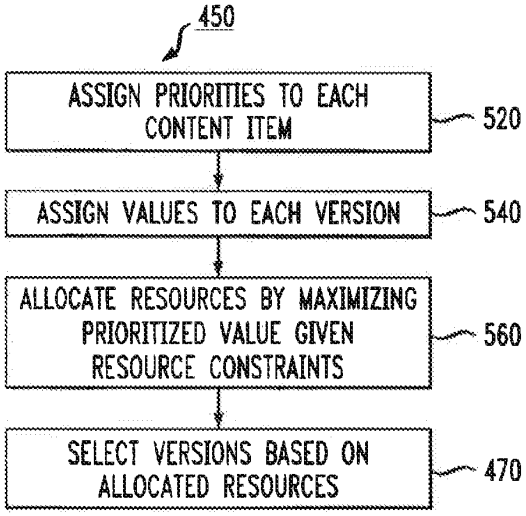

450
ASSIGN PRIORITIES TO EACH CONTENT ITEM
520
ASSIGN VALUES TO EACH VERSION
540
ALLOCATE RESOURCES BY MAXIMIZING PRIORITIZED VALUE GIVEN RESOURCE CONSTRAINTS
560
SELECT VERSIONS BASED ON ALLOCATED RESOURCES
470

FIG. 6

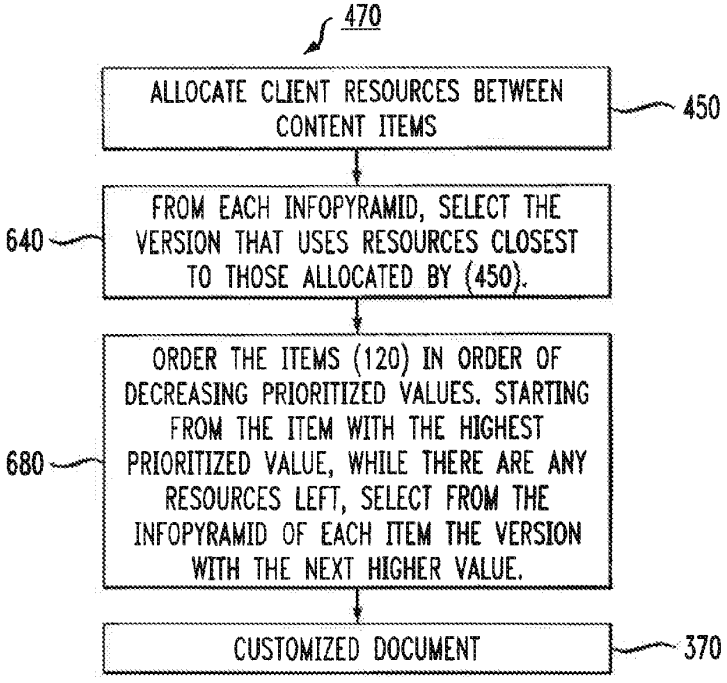

470
ALLOCATE CLIENT RESOURCES BETWEEN CONTENT ITEMS
450
640
FROM EACH INFOPYRAMID, SELECT THE VERSION THAT USES RESOURCES CLOSEST TO THOSE ALLOCATED BY (450).
680
ORDER THE ITEMS (120) IN ORDER OF DECREASING PRIORITIZED VALUES. STARTING FROM THE ITEM WITH THE HIGHEST PRIORITIZED VALUE, WHILE THERE ARE ANY RESOURCES LEFT, SELECT FROM THE INFOPYRAMID OF EACH ITEM THE VERSION WITH THE NEXT HIGHER VALUE.
CUSTOMIZED DOCUMENT
370

FIG. 7

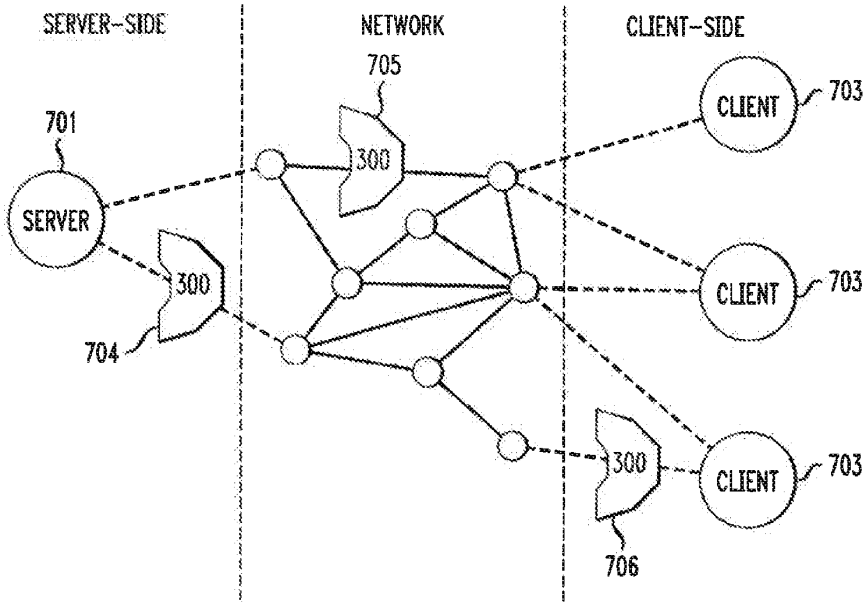


FIG. 8

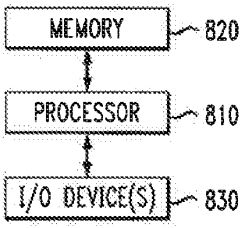
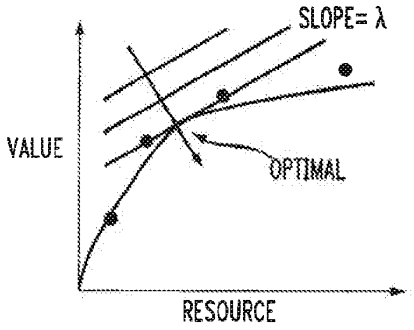


FIG. 9



METHODS AND APPARATUS FOR ADAPTING MULTIMEDIA CONTENT FOR CLIENT DEVICES

CROSS REFERENCE TO RELATED APPLICATIONS

The present application is related to U.S. patent application Ser. No. 09/413,515, entitled: "Method and Apparatus For Transcoding Multimedia Using Content Analysis," filed in the names of Li et al. on Oct. 6, 1999, which claims priority to U.S. provisional patent application Ser. No. 60/103,303, entitled: "Method and Apparatus For Transcoding Multimedia Using Content Analysis," filed in the names of Li et al. on Oct. 6, 1998.

FIELD OF THE INVENTION

The present invention relates to delivery of multimedia content to client devices and, more particularly, to methods and apparatus for adapting such multimedia content for diverse client devices.

BACKGROUND OF THE INVENTION

Web documents delivered on the Internet are multimedia presentations that may include video, images, graphics, text and audio. Due to the recent rapid growth of devices that are connected to the Internet, there is a growing demand for providing universal access to such multimedia content to a wide variety of devices over a wide range of network environments. For example, personal computers on a local area network (LAN), personal digital assistants (PDAs) on dial-up modems and smart cellular phones have drastically different client resources in terms of, for example, screen size, resolution, color depth, network bandwidth and computing power. Internet users also vary in their ability to pay for Internet services and in the time they are ready to wait for a page to download. Therefore, to provide universal access to the Internet, multimedia delivery methods need to account for the composite nature of Web documents, and the variety of client platform capabilities, user interests, network constraints and authoring policies.

In this context, video-conferencing systems have been proposed that adjust the bandwidth available to the client by selecting a suitable compression factor or codec. In these systems, only a single type of multimedia item (namely video) is considered. Also, clients that can not handle video are not considered.

One option for content adaptation is to manually develop multiple versions of multimedia content, each suitable for a class of client devices. Given the variety of client devices, it is difficult for content publishers to anticipate and accommodate the wide spectrum of client capabilities. For composite multimedia documents, such as Web pages, a number of systems have been proposed that employ a proxy between the Web server and the client. For example, various proxy approaches are described in: J. R. Smith, R. Mohan, and C-S. Li, "Transcoding Internet Content for Heterogeneous Client Devices," In Proc. IEEE Inter. Symp. on Circuits and Syst. (ISCAS), Special Session on Next Generation Internet, June 1998; A. Fox, S. D. Gribble, E. A. Brewer, and E. Amir, "Adapting to Network and Client Variability Via On-demand Dynamic Distillation," In ASPLOS-VII, Cambridge, Mass., October 1996; A. Ortega, F. Carignano, S. Ayer, and M. Vetterli, "Soft Caching: Web Cache Management Techniques for Images," In IEEE Workshop on Multimedia Signal Processing, pg. 475–480, Princeton, N.J., June 1997; Intel Quick Web accessible on the Internet at http://www.intel.com/quickweb; Spyglass Prism accessible on the Internet at http://www.spyglass.com/products/prism; A. Fox and E. A. Brewer, "Reducing WWW Latency and Bandwidth Requirements by Real-time Distillation," In Proc. Of the 5th International WWW Conference, 1996; and T. W. Bickmore and B. N. Schilit, "Digestor: Device-independent Access to the World Wide Web," In Proc. Of the 6th International WWW Conference, 1997. The proxy distills, or transcodes, the content from the Web server. This transcoding is primarily limited to the compression of images, or a reduction of their size or color space. These systems do not consider transcoding into different modalities. The image compression and size reduction policies are static and do not dynamically account for resources on the client.

SUMMARY OF THE INVENTION

The present invention adapts multimedia content, e.g., Web documents, to optimally match the capabilities of the client device requesting it. Each Web document is a set of items, each of which is authored in a particular modality such as text or image. Each of these content items is then transcoded into multiple resolution and modality versions so that they can be rendered on different devices. For example, a video item is transcoded into a selected set of images so that it can be rendered on a device not capable of displaying video. Each version of a content item requires different resources from the client device. The invention ensures that the resource requirements for the entire document, as given by the sum of the resource requirements of its constituent items, can be met by the requesting client. The invention allocates the resources on the client among the items in the document. This resource allocation results in the selection of appropriate resolution or modality of the content items. If the client has limited resources, e.g., such as a PDA or pager, some of the content items may not get any resources assigned and thus not be delivered to the client.

In an embodiment of the invention, as will be explained, three technologies are employed to provide such multimedia content adaptation: (i) a progressive data representation scheme referred to as the InfoPyramid as described in C-S. Li, R. Mohan and J. R. Smith, "Multimedia Content Description in the InfoPyramid," Proc. ICASP'98, Special Session on Signal Processing in Modern Multimedia Standards, Seattle, Wash., May 1998, the disclosure of which is incorporated herein by reference; (ii) a set of transcoding modules for converting modality or resolution; and (iii) an adaptation process that selects the best representation to meet the client capabilities while delivering the most value to the client.

The present invention provides many advantages over prior solutions. For example, content is dynamically adapted to the client device allowing a wider variety of multimedia content and of client devices to be properly supported. Also, in accordance with the invention, a content author has control over the adaptation process. The content author can edit and replace the transcoded versions of content items generated by the automated transcoding systems. This control of the customization overcomes problems of publisher control and copyright issues faced by transcoding proxies

Further, the invention permits content to be authored in XML (Extensible Markup Language, as is known in the art), allowing the author to provide more information to the transcoding and adaptation systems than can be deduced from an HTML (hyper text markup language) page. One

benefit of the server-based system of the invention is that due to the guidance provided by the author, a significantly greater level of customization can be performed than is possible in previous transcoding proxies. Still further, the invention permits the transcoded versions of the content items to be generated prior to any requests. Thus, the invention can handle media items such as video and audio which are difficult to handle in conventional proxies. This off-line transcoding also leads to lower response latencies than proxies. Also, the server shares the benefit of transcoding proxies in speeding content delivery as the customized content is often much smaller than the original content.

These and other objects, features and advantages of the present invention will become apparent from the following detailed description of illustrative embodiments thereof, which is to be read in connection with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a diagram illustrating an example of a multimedia document;

FIG. **2** is a diagram illustrating transcoding a content item into an InfoPyramid;

FIG. **3** is a flow chart illustrating a method of adapting a document to a client device according to an exemplary embodiment of the invention;

FIG. **4** is a flow chart illustrating an adaptation process according to an exemplary embodiment of the invention;

FIG. **5** is a flow chart illustrating a method of obtaining an adaptation process according to an exemplary embodiment of the invention;

FIG. **6** is a flow chart illustrating a method of selecting versions of content items for a customized document according to an exemplary embodiment of the invention;

FIG. **7** is a block diagram illustrating deployment of an adaptation process in the Internet according to an exemplary embodiment of the invention;

FIG. **8** is a block diagram illustrating an exemplary hardware architecture of a server or computing device for implementing the invention; and

FIG. **9** is a graphical representation illustrating a resource allocation technique according to an exemplary embodiment of the invention.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

It is to be appreciated that the term "processor" as used herein is intended to include any processing device, such as, for example, one that includes a CPU (central processing unit). The term "memory" as used herein is intended to include memory associated with a processor or CPU, such as, for example, RAM, ROM, a fixed memory device (e.g., hard drive), a removable memory device (e.g., diskette), etc. In addition, the term "input/output devices" or "I/O devices" as used herein is intended to include, for example, one or more input devices, e.g., keyboard, for making requests for multimedia content and inputting data to the processing unit, and/or one or more output devices, e.g., CRT display and/or printer, for presenting requested multimedia content and providing results associated with the processing unit. It is also to be understood that various elements associated with a processor may be shared by other processors. Accordingly, software components including instructions or code for performing the methodologies of the invention, as described herein, may be stored in one or more of the associated memory devices (e.g., ROM, fixed or removable memory) and, when ready to be utilized, loaded in part or in whole (e.g., into RAM) and executed by a CPU.

Referring to FIG. **1**, an example of a multimedia document is shown. As is well known, a Web user (client) makes a request from his client device for some particular Web document(s) or other multimedia content which may contain video, images, graphics, text, audio. The request is sent to a Web server which satisfies the request by returning the requested document to the client. As shown, a multimedia document W, denoted as reference numeral **100**, is composed of a number of content items A_i, denoted as reference numeral **120**, where i=1, 2, . . . , n. Thus, the multimedia document may be represented as $W=\{A_i\}$. Each content item A_i can be an atomic unit of media such as, for example, an image. A content item A_i can also be composed of other items. For example, a document can have a number of stories as content items, and each story item may be composed of image items, text items, etc.

Referring to FIG. **2**, a diagram illustrating an example of transcoding a content item into an InfoPyramid according to the invention is shown. Particularly, a content item **120** is transcoded, in process **250**, into an InfoPyramid **280**. For each original content item A_i, an InfoPyramid represented as $M_i=\{M_{ij}\}_{j=0}^{m_i}$, m_i, is computed by transcoding A_i into j versions with different resolutions and modalities. The original version is denoted as $M_{i0}=A_i$. A null version, which corresponds to an item being deleted from the delivered content, is denoted as:

$$M_{im_i}=\Phi. \tag{1}$$

The transcoding process **250** can convert the input modality associated with the content item to a new modality such as, for example, text to audio, or audio to text. Alternatively, the transcoding process can summarize, compress, or elaborate on the content within the given modality of the input data such as, for example, by image compression or text summarization. Further, it is to be appreciated that transcoding processes may alternatively be performed in accordance with the techniques described in U.S. patent application Ser. No. 09/413,515, entitled: "Method and Apparatus For Transcoding Multimedia Using Content Analysis," filed in the names of Li et al. on Oct. 6, 1999, which claims priority to U.S. provisional patent application Ser. No. 60/103,303, entitled: "Method and Apparatus For Transcoding Multimedia Using Content Analysis," filed in the names of Li et al. on Oct. 6, 1998, the disclosure of which is incorporated herein by reference.

The InfoPyramid **280** can be viewed as a generalization of multi-resolution representations, e.g., Gaussian image pyramids, to multimedia. The InfoPyramid provides a multimodal, multi-resolution representation hierarchy for multimedia, for example, as described in the above-referenced C-S. Li, R. Mohan and J. R. Smith, "Multimedia Content Description in the InfoPyramid," Proc. ICASP'98, Special Session on Signal Processing in Modern Multimedia Standards, Seattle, Wash., May 1998. The InfoPyramid **280** is a data structure in which the multiple representations of a multimedia item can be organized into a pyramid-like structure, as illustrated in FIG. **2**. The cells of the pyramid correspond to different representations of the objects using different modalities such as, for example, video **281**, image **282**, audio **283** and text **284**, and fidelities such as in the range of full-resolution (bottom of pyramid) to low-resolution (top of pyramid). A specific version of a multimedia item can be referred to by one of the cells. The

InfoPyramid may include procedures and rules for translating and summarizing (transcoding) between modalities and resolutions. The InfoPyramid may also contain meta-data for each constituent version such as, for example, size, color, bandwidth requirements, publisher preferences, etc.

The transcoding process **250** populates the InfoPyramid **280** structure with multi-resolution, multi-modal versions of the content item, as explained herein. The transcoding process **250** can be performed on a version by following the transcoding paths in FIG. **2**, for example, as denoted by reference numerals **285** through **290**. By following the horizontal paths, e.g., paths **285** and **286**, a version can be translated to another version in a new modality. For example, text can be converted to audio in path **286**. Similarly, video can be converted to images in path **285**. By following the vertical paths, e.g., paths **287**, **288**, **289** and **290**, a version can be changed into versions at different fidelities. For example, text passages can be summarized in path **288**, video can be compressed in path **287** and/or images can be compressed in path **289**. Furthermore, the image can be compressed to a greater degree in path **290**. Such transcoding processes can be done in a "lazy" fashion, i.e., the actual transcoding need not be performed, but rather, only a place holder for the transcoded version can be created and the meta-data filled in. The actual version is generated only if required.

Some exemplary transcoding processes **250** are listed below by modality of the version and the conversions performed to generate versions at different resolutions and modalities:

(i) images

resolution—spatial size reduction, color depth reduction, lossy/lossless compression

modality—related text, embedded text, semantic labels;

(ii) video

resolution—spatial and temporal resolution, lossy/lossless compression

modality—key-frame images, audio track, closed caption;

(iii) text

resolution—key-terms, text summarization, document headings

modality—speech synthesis, language translation;

(iv) audio

resolution—bit-rate reduction, sampling rate change, stereo to mono

modality—speech recognition.

That is, such known transcoding operations are capable of transcoding multimedia content in a variety of ways. Some illustrative examples of the exemplary conversions mentioned above include: (i) compressing data with or without information loss; (ii) reducing the size or resolution of the data such as by spatial reduction; (iii) reducing the color content of the data such as reducing the number of colors; (iv) summarizing content such as text passages and video sequences; (v) reducing or expanding the amount of data or altering the fidelity of the information; (vi) translating the data to different modalities such as text to speech, video to images, and speech to text; (vii) translating text to a different language such as English to Japanese; and (viii) removing, substituting, blocking, emphasizing or de-emphasizing individual multimedia objects, modal elements, or other content.

Referring to FIG. **3**, a flow chart of a method **300** of adapting a multimedia document **100** to a client device according to the invention is shown. A client device is characterized by a client profile **310**. As shown in FIG. **2**, the content items **120** of a multimedia document **100** are transcoded (**250**) into multiple modality and fidelity versions to generate a set **340** of InfoPyramids **280**.

A client device is characterized by its profile **310** which lists the capabilities **320** and resources **330** of the device. The types of client devices that can access the Internet are rapidly expanding beyond the typical workstation on a LAN for which most multimedia Internet content is authored.

A client may have a different number of capabilities **320** and resources **330**. It is to be appreciated that the term "capability" is the ability for a client device to handle a particular media type. Examples of capabilities that may be specified include: (i) screen color; (ii) audio capability; (iii) video capability; (iv) image display capability; (v) software such as video decompression; and (vi) hardware such as a sound card, to name a few. So, by specifying the capabilities that a client device has, it is implied that capabilities not specified do not exist on the client device. For example, a handheld personal computer (HPC) may not be capable of displaying video and a PDA may not be capable of displaying color images. The "resources" of a client can be divided up among several items on a Web page. Examples of resources are: (i) screen size including width, height and area; (ii) bandwidth, for example, network bandwidth; (iii) memory and other client storage capacity; (iv) wait time (including preferred and limits) as determined by the product of the bandwidth and the time a client is ready, willing or able to wait to receive the complete document; (v) payment ability (including preferred and limits), that is, money client is ready, willing or able to pay for the document, to name a few.

The client device profile can be obtained by a number of mechanisms. For example, the User-Agent fields in the HTTP (hyper text transport protocol) request header contain information about the browser and often the operating system. Also, Windows-CE devices specify the screen size, color depth and processor. Standardization efforts are under way to allow these request fields to contain more information about the client device. Further, many sites require users to log-in or place cookies at the user location allowing client capabilities to be retrieved from stored profiles. The client may also specify their capabilities explicitly, for example, through forms or applets.

A content adaptation process **350** uses the client profile **310** to select from among the InfoPyramids **280** the versions **374** that best satisfy the particular client profile. These selected versions are rendered into a document **370** which is an adaptation (i.e., customization) of the original multimedia document **100**. The client device receives the customized document **370**.

Referring to FIG. **4**, a flow chart illustrating an adaptation process **350** according to the invention is shown. First, in step **420**, the versions from the InfoPyramids **280** that do not meet client capabilities **320** are filtered out. For example, all versions that are in video modality can be filtered out if the device is not capable of displaying video. Similarly, all versions that are color images can be filtered out for a device that has only a black and white or gray-level screen.

Next, in step **450**, the client resources are allocated between the InfoPyramids **280** and the content items. The resources can be allocated by using any allocation resource policy. For example, the resources can be distributed in proportion to the resources used by the original versions. A method for allocating resources may be based on optimization, as will be explained in the context of FIG. **5**. Then in step **470**, the resources allocated for each InfoPyramid are used to select the appropriate version **374**, which has not been previously filtered out in step **420**, to render the customized multimedia document **370**.

Referring to FIG. **5**, a flow chart illustrating a method **450** of allocating client resources using optimization according to the invention is shown. First, in step **520**, each content item is assigned a priority. The author of the Web document may have a mental priority ordering of the items in the document. The priorities may be assigned by the author of the page. Many Internet applications, such as search engines, customized news sites, etc., generate documents dynamically in response to a user request. In these applications, there is often a priority implicitly assigned to the items. For example, in image search engines, the match scores of the returned images serve as priorities. Priorities can be assigned based on match scores for various dynamically generated pages. For classes of multimedia documents, priorities can be assigned on attributes of content items. For example, titles can be given a higher priority than headings which can be given a higher priority than paragraphs. Content analysis or heuristics give hints to semantics or purpose of various content items. Such content analysis, for example, is described in S Paek and J. R. Smith, "Detecting Image Purpose in World Wide Web Documents," In Symp. On Electronic Imaging: Science and Technology—Document Recognition, San Jose, Calif., January 1998, the disclosure of which is incorporated herein by reference, while heuristics are, for example, described in J. R. Smith, R. Mohan and C-S. Li, "Content-based Transcoding of Images in the Internet," In IEEE Inter. Conf. On Image Processing (ICIP-98), Chicago, Ill., October 1998, the disclosure of which is incorporated herein by reference. For example, one can categorize images as pictures, graphics, advertisements, etc. These categories can be used to assign priorities. Also, priority may be assigned to items based on subjective or objective importance. In any case, let P_i be the priority assigned to item i.

Next, in step **540**, each version of a content item in an InfoPyramid is assigned a value. A value is a subjective measure of fidelity and may be represented as:

$$V(M_{ij}) = \frac{\text{perceived value of transcoded version } M_{ij}}{\text{perceived value of original } M_{i0}} \tag{2}$$

where:

$$V \in [0, 1], \tag{3}$$

$$V = \begin{cases} 1 & \text{for original item } M_{i0} \\ 0 & \text{when the item is excluded from } M_{imj} \end{cases}$$

V provides a measure of fidelity that is applicable to transcodings of media at multiple resolutions and multiple modalities. This also allows comparison of content items that are in different media types. The value V can either be assigned by the author for each transcoding, or a functional relation between V and R (i.e., the resource utilized) can be defined. In the special case where a distortion D of all the versions can be measured, and the distortion for the null version is assumed to be infinite, V can be computed as:

$$V = \frac{1}{1+D}. \tag{4}$$

The prioritized value of InfoPyramid M_i is defined as $V_i' = P_i V_i$. Next, in step **560**, the client resources **320** are allocated by maximizing, or at least substantially maximizing, the sum of prioritized values of the InfoPyramids of all content items such that the client resources are not exceeded, i.e.:

$$\max_i \left\{ \sum_i V_i' \right\} \text{ such that } \sum_i R_i \le R_{client} \tag{5}$$

where $V_i \in \{V(M_{ij})\}$ and $R_i \in \{R(M_{ij})\}$ are the values and the resources used by the ith item M_i of the multimedia document. While V_i and R_i are discrete, we will first consider them to be continuous, and then deal with the discrete case. R_{client} is the maximum resource available at the client.

Let the value V_i be some function of the resource R_i, i.e., $V_i = f_i(R_i)$. We convert the above constrained optimization problem (equation (5)) to an unconstrained optimization problem by considering the Lagrangian optimization technique described in R. Fletcher, "Practical Methods of Optimization," John Wiley & Sons, 1987. Using the Lagrangian technique, equation (5) may be expressed as:

$$L(R, \lambda) = \left\{ \sum_i V_i + \lambda \left(R_{client} - \sum_i R_i \right) \right\} \text{ with } \lambda \ge 0. \tag{6}$$

Then, if R_0 is an optimal solution to equation (5), there exists a λ_0 such that $\nabla L(R,\lambda) = 0$. Thus, the candidate solutions for the maximum are given by:

$$\frac{\partial L}{\partial R_1} = \frac{\partial L}{\partial R_2} = \cdots = \frac{\partial L}{\partial R_i} = \cdots = \frac{\partial L}{\partial \lambda} = 0. \tag{7}$$

Given that the items and their values are independent of each other, we get:

$$\frac{\partial L}{\partial R_i} = \frac{d f_i(R_i)}{d R_i} - \lambda. \tag{8}$$

Therefore, the candidate solutions to equation (5) are given by:

$$\frac{d f_1(R_1)}{d R_1} = \frac{d f_2(R_2)}{d R_2} = \cdots = \frac{d f_i(R_i)}{d R_i} = \cdots = \lambda. \tag{9}$$

First we consider analytic functions. Content value, as an alternative distortion, makes it possible for authors or users to specify value judgements about various transcoded versions of the content. However, manually assigning the values is not a practical proposition in most scenarios. To mitigate this problem, we introduce functional mappings between content value and resource utilization.

Let us assume a function f, $V_i = f_i(V_i)$. Note that f_i and therefore, the solution, is dependent on the choice of units for R. If f is concave, equation (9) gives us the optimal solution. We will first however consider the case when f is not concave followed by the case when it is concave.

Non-concave case: We will limit the discussion to the case when f is either linear or convex. Let us assume that the value of an item is linearly proportional to the resource that it utilizes, i.e., $V_i = c_i R_i$. From the definition of V we have that $f_i(R_i) = 0$ when item i is absent from the delivered document, i.e., $R_i = 0$ and $f_i(R_i) = 1$ for the original version of item i, i.e., $R_i = R_i^{max}$. Thus:

$$c_i = \frac{1}{R_i^{max}}. \tag{10}$$

We term c_i to be the resource utilization factor RUF because it measures how well the item i utilizes its resources to

deliver value. It is evident that a greedy algorithm that allocates resources to items in the order of their RUFs gives the optimal resource allocation:

1. Store items in order of decreasing RUF, c.
2. Starting with the item with the largest RUF, allocate the maximum resources that each item can use until all the resources are depleted.

Similarly, the optimal resource allocation for any convex function f is also a greedy algorithm.

Concave case: Let us consider the concave function $V_i=c_i \ln(1+R_i)$. We have defined f on $1+R_i$ to avoid negative V_i. For simplicity, we assume that $R \gg 1$ for most versions, and that $R=1$ is equivalent to the item being deleted, giving:

$$V_i = c_i \ln(R_i) = \frac{\ln(R_i)}{\ln(R_i^{(min)})} \tag{11}$$

We now get a resource utilization factor RUF of:

$$c_i = \frac{1}{\ln(R_i^{(min)})} \tag{12}$$

Using equation (9), we see that the resources are distributed among the items in proportion to their RUFs. Since, $V_i=c_i \ln(R_i)$ is concave (and the constraint is linear) this solution is optimal. In a similar manner, equation (9) yields the optimal solution for all other concave functions.

Now considering discrete values, since each item is transcoded into a limited number of versions, we may have no version that uses exactly the same resource as computed in the optimization process described above. To account for the discrete values, we use the following algorithm:

1. For each item i, let R_i' be the resource selected by the optimization process. Select version j such that $R_{ij}<R_i'$ and $R_i'-R_{ij}$ is minimum.
2. Order the items in order of decreasing RUFs. Starting from the item with the highest RUF, while there are any resources left, assign to each item the version with the next highest value.

It is to be appreciated that step 2 needs to be performed only once.

Next we consider arbitrary functions. When the values V_i are assigned, for example by the author, we may not have an analytical function $f_i(R_i)$ and thus will not be able to calculate:

$$\frac{\partial f_i(R_i)}{\partial R_i}. \tag{13}$$

For this case, we adapt a technique described in Y. Shoham and A. Gersho, "Efficient Bit Allocation for an Arbitrary Set of Quantizers," IEEE Trans. On Acoust., Speech, Signal Proc., 36(9):1445–1453, September 1998, the disclosure of which is incorporated herein by reference. For each Infopyramid M_i of each item i, we plot the value V_{ij} versus the resources utilized R_{ij} of each version M_{ij}, as illustrated in FIG. 9. The optimal version M_i' given by sweeping a line with slope λ from the top-left to the bottom-right until it meets the concave hull of these points. As shown by equation (9) and as known in the above-referenced Shoham article, the optimal solution is given by the same slope λ for all the different items i. Then, a binary search for λ is performed such that:

$$\sum_i R_i \tag{14}$$

is close to but less than R_{client}. Points outside the concave hull are not in the solution space. For example, a text transcript of video may take more screen space but have less value, so it is out of the solution space.

Recall that P_i is the priority assigned to item i by the author or the application. We then define the prioritized value of item i as $V_i'=P_iV_i$. The goal is now to find:

$$\max_i \left\{ \sum_i V_i' \right\} \text{ such that } \sum_i R_i \le R_{client}. \tag{15}$$

Using this formulation, the following resource allocation strategies are similar to those described above but with prioritized values replacing RUFs:

1. If f is linear or convex, the resources are assigned in a greedy manner in order of the prioritized values of the items.
2. If f is logarithmic, the resources are assigned in proportion to the prioritized values of the items. In general, when f is concave, equation (15) can be solved by the technique described above with respect to analytic functions.

When f is not analytic, the value versus resource plot (FIG. 9) is replaced with $V_i'=P_iV_i$ on the y-axis. The remainder of the algorithm is as described above with respect to arbitrary functions.

One common transcoding practice is to scale the size of all images by a constant factor: 0.75, 0.25, etc. One can argue that in the original Web document, the larger images were more important as more resources were given to them. We can model these intrinsic properties as proportional to ln(image size). Then, this ad-hoc policy of constant scaling is equivalent to allocating the client resources of screen area in proportion to the prioritized values of the images, and is optimal with the assumption that image value is a logarithmic function of its size.

Each content item i can be a composite item, i.e., a hierarchy of other content items. To account for composite items, we allocate resources using $V_i=f_i(R_i)$ where f is a concave analytic function and the items i under consideration may be composite. The optimal resource R_i' thus allocated to each composite item i is in turn used as the resource constraint for its constituent items. We then allocate this resource R_i' among the children of the composite item i. This resource allocation is repeated until the items being considered are atomic (e.g., an individual media item such as an image). When we have priorities assigned to items, we similarly modify the resource allocation strategy as described above.

For a composite item, the number of its different versions is combinatorial in the number of its children items. Thus, it is not always practical to manually assign values to each version of a composite item.

As previously mentioned, a client may have a different number of capabilities and resources. Before we start the resource allocation process, we remove from consideration all the versions of items that a client is not capable of handling. Let there be r different resources R^k_{client} that we have to consider. Then, the resource allocation problem can be stated as:

$$\max_i \left\{ \sum_i V_i \right\} \text{ such that } \sum_i R_i^k \le R_{client}^k \quad \text{for all } 1 \le k \le r. \tag{16}$$

We first allocate each resource R^k_{client} separately. Let M_i^k be the version of item M_i that is selected for resource k. We select only one version of an item to be delivered. We achieve this by the following algorithm:

1. For each item i find the set of resources $R_i=\{R^k(M_i^k)\}$ used by each of its versions selected for each of the resources.
2. For each item i find the version M_{ij} that has the highest assigned value among all the versions and such that for all k, $R^k(M_{ij}) \leqq R^k(M_i^k) \in R_i$. If no values have been assigned, since we define $V_i=f_i^k(R_i^k)$, the value of a version may be different for different resources. In that case, we choose a resource as the dominant resource, and use the values of the versions for that resource.

The above algorithm is guaranteed to select one version for each item without breaking the constraints of any of the r resources. However, the version so selected may not always be optimal. To find the optimal set, a search (e.g., combinatorial) may be required.

For finding the optimal content adaptation schemes we assumed that the content items on a Web page are independent of each other. This assumption may not hold in all cases. For example, for a news story, if the text to the story has to be discarded due to space limitations, then delivering the pictures for the story may not be very useful. One solution is to use composite items, as described above. We consider dependent items as composite items and allocate resources first to the composite item. This resource can then be allocated among the components of the composite item in an all-or-none manner. Another solution is to extend rate-distortion techniques for handling dependent blocks such as, for example, is described in A. Ortega and K. Ramchandran, "Rate-Distortion Methods for Image and Video Compression," IEEE Signal Processing Magazine, November 1998, to the value-resource framework.

Advantageously, given that client resource allocation is expressed in the form of the above optimization problem, any of the above described techniques may be employed. It is to be appreciated that the above techniques are also described in R. Mohan, J. R. Smith and C-S. Li, "Adapting Multimedia Internet Content for Universal access," IEEE Transactions on Multimedia, Vol. 1, No. 1, March 1999, the disclosure of which is incorporated herein by reference. It is further to be appreciated that techniques known to those ordinarily skilled in the art for computing the solution to this type of optimization problem may alternately be employed. Whichever technique is used to find the optimum value, the solution gives the amount of resource R_i allocated to the InfoPyramid M_i for content item A_i. Then, the versions are selected based on the resources that have been allocated (step **470**).

Referring to FIG. 6, a flow chart illustrating a method **470** of selecting versions based on the resources allocated (step **450**) according to the invention is shown. For each InfoPyramid M_i for content item A_i, let R_i' be the resource allocated by step **450**. In step **640**, for each InfoPyramid, select version j such that $R_{ij} \leqq R_i'$ and $R_i'-R_{ij}$ is a minimum. In step **680**, the InfoPyramids are sorted in the order of decreasing prioritized values. Starting from the item with the highest prioritized value, while there are any resources left, select from the InfoPyramid of each item the version with the next highest value. Step **680** needs to be performed only once. These selected versions **374** are rendered as the multimedia document **370** customized for the client device.

It is to be appreciated that in an alternative embodiment, the fidelity measure values, priorities, and the Infopyramids may be made part of the original multimedia document. If this is the case, then only the selection process (FIG. 6) need be performed to generate the customized multimedia document **370**.

Referring to FIG. 7, a block diagram illustrating an example of deployment of a content adaptation process **300** according to the invention in a client-server environment is shown. It is to be appreciated that the content adaptation process can be deployed on the server-side, the client-side, or in the network connecting the server and client. For example, the content adaptation process **300** may be implemented in a server **701** or a computing device **704** on the server-side. Further, the process **300** may be implemented in a proxy server **705** in the network. Still further, the process **300** may be implemented in a client device **703** or a computing device **706** on the client-side.

If the content adaptation process **300** is deployed at the proxy server **705**, the proxy handles the requests from the client devices **703** for multimedia content (e.g., documents). The proxy retrieves the requested information from server(s) **701**. Then, the process **300** running on the proxy adapts the retrieved content to the profile **310** of the requesting client device **703**. The proxy **705** then delivers the customized document **370** to the client device **703**. If the content adaptation process **300** is deployed at the server **701**, the process **300** has direct access to the content at the server **701** and can store the InfoPyramids **280** on the server **701**. If the content adaptation process **300** is deployed at the client-side computing device **706**, the process **300** can adapt documents retrieved by the clients **703** from the server(s) **701**. Alternatively, the process **300** may be distributed among two or more locations.

Referring to FIG. 8, a block diagram is shown of an exemplary hardware implementation for any of the computer systems used to implement the methodologies of the invention, e.g., server(s) **701**, client devices **703**, computing device **704**, proxy server **705**, and computing device **706**. Each computer system includes a processor **810** coupled to a memory **820** and I/O device(s) **830**. The processor **810** performs the functions associated with the methodologies described herein. The memory **820** is used by the processor for performing such functions and for storing results of the processes. The I/O device(s) may include one or more data input devices (e.g., keyboard, etc.) for inputting data (e.g., requests for multimedia content), and/or one or more data output devices (e.g., display) for presenting results associated with the functions performed in accordance with the methodologies described herein (e.g., displaying customized documents). Also, it is to be understood that more than one processor may be employed within any one computer system and various processors may share responsibility for executing processes associated with the invention. While the above embodiments illustrate a processor-based implementation of the invention, one of ordinary skill in the art will realize that other implementations may be used in whole or in part, e.g., application specific integrated circuits, special purpose circuitry, etc.

Although illustrative embodiments of the present invention have been described herein with reference to the accompanying drawings, it is to be understood that the invention is not limited to those precise embodiments, and that various other changes and modifications may be affected therein by one skilled in the art without departing from the scope or spirit of the invention.

What is claimed is:

1. A method of adapting multimedia content to a client device, the multimedia content including one or more items and the client device having capabilities and resources associated therewith, the method comprising the steps of:

transcoding the multimedia content into a plurality of transcoded content versions, the plurality of transcoded content versions having different modalities and resolutions associated therewith;

filtering out the transcoded content versions that are not compatible with client device capabilities;

allocating at least a portion of the resources associated with the client device among the one or more items of the multimedia content; and

selecting one or more of the transcoded versions of the multimedia content to generate a customized content based on allocation of the client device resources.

2. The method of claim 1, wherein the multimedia content includes at least one World Wide Web document.

3. The method of claim 1, wherein the multimedia content includes at least one of a video item, an image item, a graphics item, a text item, and an audio item.

4. The method of claim 1, wherein the transcoding step further includes the steps of:

separating the multimedia content into individual content items; and

converting the individual content items to different resolutions and modalities.

5. The method of claim 1, wherein the capabilities associated with the client device include at least one of a color capability, an audio capability, a video capability, an image capability, and a text capability.

6. The method of claim 1, wherein the capabilities associated with the client device includes a decompression capability.

7. The method of claim 1, wherein the resources associated with the client device include at least one of a screen size, a bandwidth, a storage capacity, a content wait time ability, and a payment ability.

8. The method of claim 1, wherein the transcoding step includes separating the multimedia content into individual content items.

9. The method of claim 8, wherein the allocating step further includes assigning a priority to a content item.

10. The method of claim 9, wherein the priority is assigned by an author of the multimedia content.

11. The method of claim 9, wherein the priority is assigned by an application associated with the multimedia content.

12. The method of claim 9, wherein the priority is assigned in response to a user request.

13. The method of claim 9, wherein the priority is assigned in response to a match score.

14. The method of claim 9, wherein the priority is assigned as a function of the importance attributed to a content item.

15. The method of claim 9, wherein the allocating step further includes assigning a fidelity measure value to each content version.

16. The method of claim 15, wherein the allocating step further includes computing a product of the priority and the fidelity value for each content version.

17. The method of claim 15, further including the step of including the assigned fidelity measure value in the multimedia content.

18. The method of claim 9, further including the step of including the assigned priority in the multimedia content.

19. The method of claim 1, wherein the transcoded versions selected satisfy at least a portion of the resource allocations.

20. The method of claim 1, further including the step of organizing at least one of the one or more items and at least a portion of the transcoded content versions associated therewith in a data structure.

21. The method of claim 20, further including the step of including the data structure in the multimedia content.

22. The method of claim 1, wherein the resources allocated to at least a portion of the transcoded versions of the content items are a function of priorities.

23. A method of adapting multimedia content to a client device, the multimedia content including one or more items and the client device having capabilities and resources associated therewith, the method comprising the steps of:

transcoding the multimedia content into a plurality of transcoded content versions, the plurality of transcoded content versions having different modalities and resolutions associated therewith;

filtering out the transcoded content versions that are not compatible with client device capabilities;

allocating at least a portion of the resources associated with the client device among the one or more items of the multimedia content, and

selecting one or more of the transcoded versions of the multimedia content to generate a customized content based on allocation of the client device resources;

wherein the transcoding step includes separating the multimedia content into individual content items, and wherein the allocating step further includes assigning a priority to a content item, assigning a fidelity measure value to each content version, computing a product of the priority and the fidelity value for each content version, and at least substantially maximizing a sum of the products for the content versions such that the resources associated with the client device are not exceeded.

24. The method of claim 23, wherein the maximizing step results in determining the portion of the resources associated with the client device which are allocated to each content item.

25. A method of adapting multimedia content to a client device, the multimedia content including one or more items and the client device having capabilities and resources associated therewith, the method comprising the steps of:

transcoding the multimedia content into a plurality of transcoded content versions, the plurality of transcoded content versions having different modalities and resolutions associated therewith;

filtering out the transcoded content versions that are not compatible with client device capabilities;

allocating at least a portion of the resources associated with the client device among the one or more items of the multimedia content; and

selecting one or more of the transcoded versions of the multimedia content to generate a customized content based on allocation of the client device resources;

wherein the resources allocated to at least a portion of the transcoded versions of the content items are a linear scaling function of the resources that would otherwise be allocated to the items.

26. Apparatus for adapting multimedia content to a client device, the multimedia content including one or more items and the client device having capabilities and resources associated therewith, the apparatus comprising:

at least one processor operable to transcode the multimedia content into a plurality of transcoded content versions, the plurality of transcoded content versions having different modalities and resolutions associated therewith, to filter out the transcoded content versions that are not compatible with client device capabilities, to allocate at least a portion of the resources associated with the client device among the one or more items of the multimedia content, and to select one or more of the transcoded versions of the multimedia content to generate a customized content based on allocation of the client device resources; and

memory, coupled to the at least one processor, for storing at least a portion of results associated with one or more of the operations performed in accordance with the at least one processor.

27. The apparatus of claim 26, wherein the multimedia content includes at least one World Wide Web document.

28. The apparatus of claim 26, wherein the multimedia content includes at least one of a video item, an image item, a graphics item, a text item, and an audio item.

29. The apparatus of claim 26, wherein the capabilities associated with the client device include at least one of a color capability, an audio capability, a video capability, an image capability, and a text capability.

30. The apparatus of claim 26, wherein the resources associated with the client device include at least one of a screen size, a bandwidth, a storage capacity, a content wait time ability, and a payment ability.

31. An article of manufacture for adapting multimedia content to a client device, the multimedia content including one or more items and the client device having capabilities and resources associated therewith, comprising a machine readable medium containing one or more programs which when executed implement the steps of:

transcoding the multimedia content into a plurality of transcoded content versions, the plurality of transcoded content versions having different modalities and resolutions associated therewith;

filtering out the transcoded content versions that are not compatible with client device capabilities;

allocating at least a portion of the resources associated with the client device among the one or more items of the multimedia content; and

selecting one or more of the transcoded versions of the multimedia content to generate a customized content based on allocation of the client device resources.

* * * * *

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Transcoding: Extending e-business to new environments

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K. Tracey

The promise of e-business is coming true: both businesses and individuals are using the Web to buy products and services. Both want to extend the reach of e-business to new environments. Customers want to check accounts, access information, and make purchases with their cellular phones, pagers, and personal digital assistants (PDAs). Banks, airlines, and retailers are competing to provide the most ubiquitous, convenient service for their customers. Web applications designed to take advantage of the rich rendering capabilities of advanced desktop browsers on large displays do not generally render effectively on the small screens available on phones and PDAs. Some devices have little or no graphics capability, or they require different markup languages, such as Wireless Markup Language (WML), for text presentation. Transcoding is technology for adapting content to match constraints and preferences associated with specific environments. This paper compares and contrasts different approaches to content adaptation, including authoring different versions to accommodate different environments, using application server technology such as JavaServer pages™ (JSP™) to create multiple versions of dynamic applications, and dynamically transcoding information generated by a single application. For dynamic transcoding, the paper describes several different transcoding methodologies employed by the IBM WebSphere™ Transcoding Publisher product, including HyperText Markup Language (HTML) simplification, Extensible Markup Language stylesheet selection and application, HTML conversion to WML, WML deck fragmentation, and image transcoding. The paper discusses how to decide whether transcoding should be performed at the content source or in a network intermediary. It also describes a means of identifying the device and network characteristics associated with a request and using that information to decide how to transcode the response. Finally, the paper discusses the need for new networking benchmarks to characterize the server load and performance characteristics for dynamic transcoding.

The phenomenon of the Internet has caused businesses to rethink their business models, customer relationships, and internal processes. Technology advances have created new opportunities to reach employees and customers, wherever they are, with information that is tailored to their needs and preferences. This information is often already stored and used in the business, but the delivery system must be re-engineered to exploit the new technology and tailor the content so it is more usable. A common problem with which this re-engineering must deal is that data or information is stored in some form on some system, when it is needed somewhere else in a different form.

The problem of adapting or customizing existing content to new applications and deliveries is not new. The user interaction model advanced by the Internet browser, along with portable and interoperable features of new technologies such as the Java™ language[1] and Extensible Markup Language (XML)[2] have created a new opportunity to address this problem with some common techniques. In contrast, the rapid appearance of wireless and other new networks with widely varying characteristics and the preponderance of new devices with a wide variety of capabilities creates new constraints on the solution. Devices that are designed to be easily carried and used in the field trade off some capabilities to gain this portability. To be easily carried, they must be light

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and small. This requirement limits the types of user interfaces they can support. Large screens and full keyboards are impossible; a small screen and telephone keypad are more realistic, although some devices may have only a voice interface. To run on battery power for useful periods of time, power consumption must be carefully managed, forcing the use of designs with little storage and processing capability. To be connected from anywhere requires wireless or intermittent wired connections, which limit the types of interactions and bandwidth available for accessing content.[3]

All of these constraints create difficult challenges in designing a useful system for delivering content to a wide array of devices. However, if such an information delivery system can be created quickly and cost-effectively and if it integrates with existing information systems, the value to customers can be immense. Transcoding, or adapting content from one form to another, is a key part of meeting these requirements for rapid, inexpensive deployment of new ways to access existing content.

The media signal processing industry first used the term "transcoding" to refer to the task of converting a signal, say a television program, from one format to another (for example, converting the NTSC (or National Television System Committee) standard, used in America and Japan, to the PAL (or Phase Alternating Line) standard, used in much of the rest of the world), while preserving the content of the program. Although the term has lately been used to mean many different things, we use the term transcoding to refer to the tasks of summarizing or filtering (which modify content without changing its representation) and translating, or converting, content from one representation to another.

Every Web application is associated with a variety of costs, including those associated with the design of business logic, creating an attractive layout, deciding which parts of the application to make secure, publishing the various resources associated with the application to a Web server or Web application server, testing the visual appeal of the resulting pages, testing to see whether the outcome of the application is correct, and testing to see whether the application works correctly with various browsers and various different browser versions. Over time, there are also costs associated with maintaining an application, including operational costs for server processing, storage, and network bandwidth, and development costs for adding new features, updating the presentation, retesting, and keeping track of the resources.

The proliferation of wireless devices with very different form factors multiplies the costs associated with Web applications. Different devices require pages to be presented in different markup languages, such as HyperText Markup Language (HTML), compact HTML[4] (including a version called imode that is popular in Japan), Unwired Planet's Handheld Devices Markup Language (HDML),[5] Wireless Markup Language (WML),[6] and VoiceXML. Even with a particular markup language such as WML, different presentations may be required on different specific devices. For example, for one WML-based phone, choices are most appropriately presented as buttons. For another phone, they might best be presented as hyperlinks. Other constraints come into play. For example, different phones can accept different size decks, where a deck is a set of information that can be sent to the phone at one time. Sending a phone a deck that is too large will cause the application to fail to display properly. Some forms of content may be much more expensive for a server or network to process than others.[7] The existence of a growing number of client devices with different presentation requirements presents new problems for maintaining an e-business site.

In addition, there are business opportunities for network intermediaries, such as Internet service providers (ISPs), to make existing Web applications available to a greater market by making them accessible from different devices. ISPs do not necessarily own the content that they serve to their clients. Instead, they provide value-added services, such as performance improvements via local caching. Making information available in different forms for different client devices is an additional possible value-added service for them.

Content adaptation

In the following discussion, *application* refers to any form of program that generates information in response to requests from Web users, *content* refers to the information returned in answer to a request, and *rendering* refers to the way the content is presented to the user, for example, how it is laid out on a Web page and how the user navigates through the information. Some markup languages, including most XML dialects, contain content along with tags that identify the meaning of different fields in the content. Other markup languages, such as HTML and

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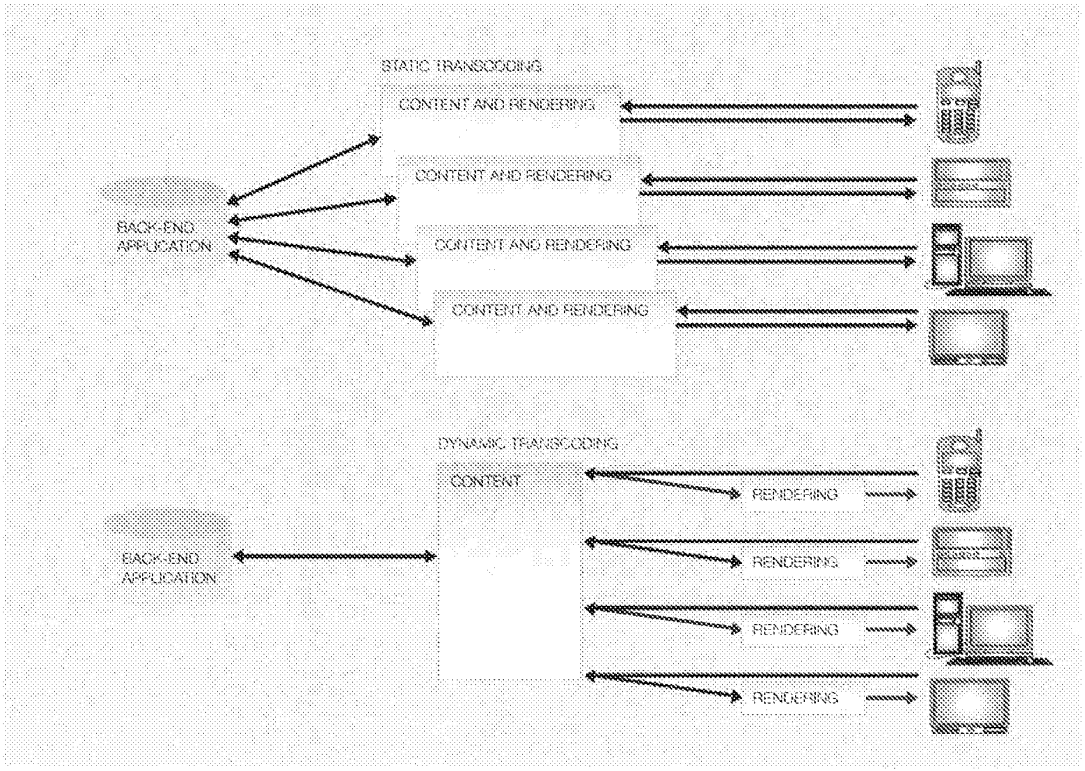
Figure 1 Static and dynamic transcoding



WML, carry both content and rendering instructions, since the tags are primarily concerned with the way the content is presented. Transcoding can modify either the content or the rendering associated with an application. For example, a subset of the content can be selected for a small-screen device, and it can be rendered differently to achieve a more pleasing presentation.

Static Web content includes pages that are presented to all users in the same way, generally retrieved from the file system of a Web server. Dynamic Web content is generated at run time based on information provided by the user. Dynamic Web content includes pages that are generated by programs, such as servlets and JavaServer Pages** (JSP**) that run on Web application servers. In both cases, documents—generally in some markup language—are produced to be sent back to the requesting user.

There are two main approaches to handling the need to present the content delivered by an application differently in different circumstances, for different devices, and for different levels of network service. The first is to design each application for each set of presentation requirements, transcoding the application statically at design time. The second is to modify the application output automatically on the fly, essentially transcoding the application dynamically at run time. These two approaches can be combined in various ways to match the requirements of particular applications. Both static and dynamic forms of transcoding can be performed with both static and dynamic Web content. Figure 1 shows a simple comparison between static and dynamic transcoding.

Static transcoding. With static transcoding of static content, different versions of the same content are

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produced by a designer, generally using various studio tools, and stored in the file system of the Web server. The main problem to be solved is selecting the right version of the content for a particular user with a particular device. One way to perform this selection is to provide the user of a specialized device

Both static and dynamic transcoding have a place in creating effective e-business sites.

with a special home page, often preconfigured in the device. This home page contains a set of links to content in the appropriate form for the device. All the links in this content point to other content appropriate for the device. If the users of phones are using them for specific applications rather than for general Web surfing, this method provides appropriate content with no user actions.

With static transcoding of dynamic content, either different versions of the application are provided or the application contains logic that produces different versions of the content. In any case, the choice of version is based on information from the incoming request that describes the device. For example, there can be a version of a particular JSP that produces HTML for a full-function browser, another that produces WML, another that produces VoiceXML, and so on. Once again, the JSP for the different presentations are designed by humans who are cognizant of the presentation on the specific target devices. The Web application server may provide assistance by selecting the correct JSP for the incoming request. For example, IBM's WebSphere® Application Server[8] 3.5 includes an extensible file called client_types.xml that it uses to map patterns found in the HyperText Transfer Protocol (HTTP) headers to specific output markup language requirements.

The primary advantages of static transcoding are quality of presentation and performance.[9] Each page is constructed by a human designer, generally working with tools that show how the application will look or sound and thus allowing the presentation to be hand-tailored for each environment. Also, since the transcoding is done at design time, the information is generated directly in the form required by the user's device. This reduces the run-time processing required to generate the information.

The primary disadvantage of static transcoding is the number of different pages and applications that have to be created, tested, organized, and maintained. As the number of devices increases, the burden of hand-generating different versions of each application or page for different presentations will become onerous.

Dynamic transcoding can also work with both static and dynamic content. In fact, by the time dynamic transcoding occurs, the content is just content, and the means of generating it is not important.

Dynamic transcoding. Dynamic transcoding promises to allow the problem of creating content to be separated from the problem of creating different presentations. Dynamic transcoding consists of a set of techniques for tailoring the information generated for a user to match the specific presentation requirements of a given user on a given device on a given level of network service. Various dynamic transcoding mechanisms are possible. Several examples are described later in this paper. They include a mechanism to select the proper stylesheet to convert an incoming XML document into a presentation appropriate for a particular output device, a mechanism to translate from HTML into various other markup languages, including HDML, compact HTML, and WML, and *clipper* mechanisms that extract the subset of the content that is most appropriate for display on a small-screen device. To the extent that these mechanisms can be used across a wide variety of content for a wide variety of devices, they reduce the overall development and maintenance costs of Web applications.

Both static and dynamic transcoding have a place in creating effective e-business sites. Some pages will be accessed frequently and will be seen as the signature pages for a business. For these, hand design will often be important. However, there are a number of considerations that will make dynamic transcoding more cost-effective. These include:

1. Is information to be presented that is not under the user's direct control? This situation can occur for various reasons, such as (1) an organization has separate groups working on content authorship and its presentation to different devices; (2) an ISP or a portal provider has legal agree-

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ments with the content owners that allow them to tailor it for presentation to different devices.

2. What skills does the user have that can be used to develop the complete system? Static transcoding may need to be done by persons skilled in Web page design or dynamic content generation. Dynamic transcoders may need to be built by persons skilled in Extensible Stylesheet Language (XSL) stylesheet development or clipper development. The most successful projects use a design that allows for a clean delineation of roles and responsibilities. That is, the content experts can generate the content without having to understand the details of page design, server administration, or device support. The site designers can create a user experience without understanding all the details of the content or the many different client device types. The presentation customization experts can focus on the required devices and their capabilities without the need to understand either the content or site design in detail.
3. Is there only concern about preparing content for a single device, such as a WML-enabled phone, or are there other target content types or device requirements? For example, some Wireless Application Protocol (WAP) predecessors send HDML. In Japan, another HTML variant called imode is popular. Some customers want to present information in a speech markup language, such as VoiceXML. The more different target formats required, the more work there is to author content or content generation programs directly for each one.
4. With WAP phones, are multiple types of phones being served with different deck sizes? Transcoding can include "deck fragmentation" that takes care of breaking a page into pieces that can be accepted by a specific phone, and creating navigation links between them. This facility makes the job of generating the original content—even if already in WML—simpler for a variety of phones with different deck sizes.
5. Can the need be foreseen to support new devices, such as automotive browsers, within days of their appearance on the network? If there are a large number of applications that involve static transcoding, it may be necessary to upgrade every application to support the new device. Any time an application is modified, the existing support may need to be retested.
6. How much content maintenance is there? Are pages or content applications modified frequently? Rapidly changing content may preclude static transcoding.
7. Is any of the content produced in XML, where there is a need to apply stylesheets to generate the right output content for the client device? Where and how is the linkage between devices and stylesheets to be maintained? Is it necessary to be able to send XML documents to browsers that are not able to apply stylesheets?

Use of XML and XSL stylesheets for content adaptation. XML is the universal format for structured documents and data on the Web and is a standard recommendation maintained by the World Wide Web Consortium (W3C**). Because XML is an open, standard data representation language with ever-increasing support from both business and educational institutions, it is becoming an almost universal language used for a growing number of purposes.

Unlike HTML, which mixes data and display information, XML is intended to represent the content and structure of data, without describing how to display the information. Although XML allows the structure of a set of data to be defined, it does not usually provide information for changing the structure of the data to conform to a different set of requirements. For instance, if business A uses one structure to represent a set of data and business B uses a different structure to represent the same type of data, XML itself does not provide the information to transform the data from one structure to the other. However, the World Wide Web Consortium maintains a standard recommendation called XSL Transformations (XSLT). XSLT is a language for transforming XML documents into other documents. It can be used to transform XML into markup languages suitable for display (like HTML), or into XML documents having a different structure. Documents written for use by XSLT engines are called *stylesheets*.

One of the major design issues related to the economics of maintaining Web applications is whether to use XML in place of rendering-based markup languages, such as HTML or WML. For many businesses, it makes sense to extract content into a single-use format that describes the semantics of the information. This format is more widely useful than the same content in an HTML format or WML format that cannot be easily manipulated for other data access requirements, such as business-to-business interactions. Reduced information technology infrastructure costs can come from writing the data extraction programs once into a single form, in this case XML, that can be used for many different data processing requirements. Once the decision to move to an XML

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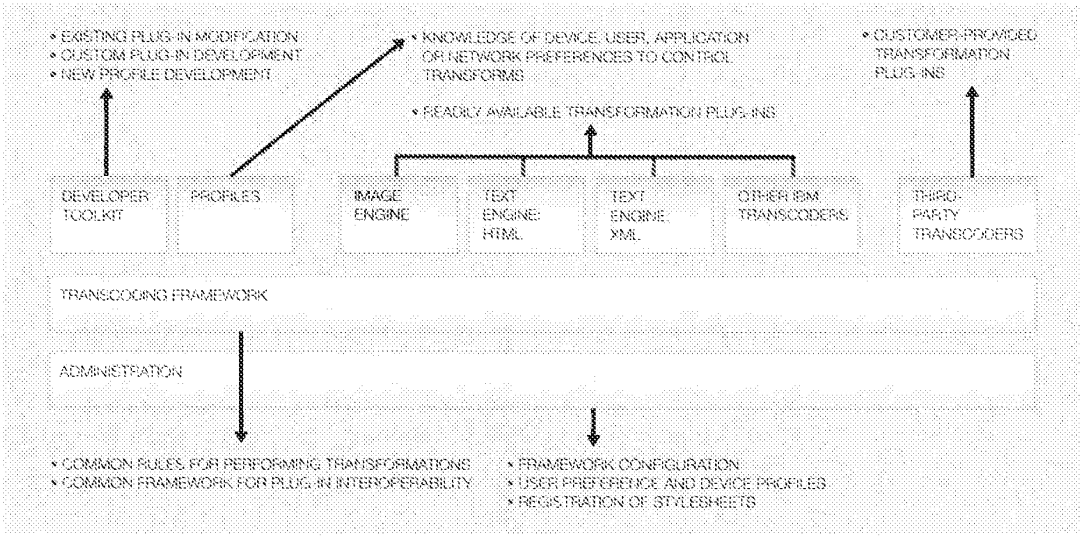
Figure 2 The structure of the WebSphere Transcoding Publisher



deployment model has been made, transcoding via XSL stylesheets can transform the data into a wide variety of business interchange and rendering formats, including HTML and WML.

However, there are costs involved in writing and maintaining XSLT stylesheets. For these costs to be lower than maintaining different versions of the application, stylesheets have to be written intelligently, with parameters that allow a single stylesheet to work for multiple presentations and with reusable chunks that can be used across a large number of applications. Otherwise, an organization will end up needing to write and maintain a large number of stylesheets. Moreover, as XML and XSL mature, tools that reduce the effort to create stylesheets will become readily available, thus further reducing the amount of time required to be dedicated toward writing stylesheets. Finally, well-known techniques for representing user interfaces in a generic fashion such as those employed by Dharma [10–12] can be leveraged to make XSL a more general-purpose language. These approaches cause the original XML content to be first transcoded to an XML document that represents a user interaction. From there, general-purpose stylesheets can transcode the content to the rendering markup language appropriate for a specific requester.

Dynamic transcoding as implemented in WebSphere Transcoding Publisher

In March 2000, IBM released WebSphere Transcoding Publisher (WTP),[14] a product that performs several kinds of dynamic transcoding and can be deployed in different ways. WTP is designed as a "backbone" and "plug-ins." This structure is shown in Figure 2. The backbone includes the function to dynamically route individual requests to the proper transcoders, based on the document source URL (uniform resource locator), device characteristics, network capabilities, and user preferences.

Specific types of dynamic transcoding implemented in WTP are described in this paper, including:

- HTML simplification: modifying HTML documents to tailor them for reduced function devices, for example, by removing unsupported features
- HTML to WML transcoding: transforming HTML documents into Wireless Markup Language documents suitable to be sent to WML-based phones
- XML stylesheet selection and application: selecting the right stylesheet to convert a particular XML document for presentation on a particular device
- Fragmentation: breaking a document into fragments that can be handled by a particular device

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and creating the navigation links between the fragments
- Image transcoding: modifying images by converting them to different formats or reducing scale or quality, or both, to tailor the image for presentation on a particular device

The paper also explains the different deployment options, including criteria for selecting a particular option. WTP may be deployed:

- As a stand-alone proxy that is interposed between the client device and the Web server
- As a proxy that pulls transcoded results through a separate caching proxy product, such as WebSphere Traffic Express or the National Science Foundation's Squid
- As a MIME (Multipurpose Internet Mail Extensions)-filter servlet running in WebSphere Application Server
- As a set of JavaBeans** transcoders that can be called by servlets, JSP, or other programs.

Finally, the paper discusses some future transcoding possibilities that could be implemented as WebSphere Transcoding Publisher extensions or as separate products.

HTML simplification. Although powerful full-function workstation browsers such as Netscape Communicator** 4.5 (and later) and Microsoft Internet Explorer** 4.5 (and later) are widely used, many less powerful devices have browsers that support only a subset of the HTML functions supported by the more powerful browsers. In addition, because some features, although supported, might so strain the resources of the device that they are troublesome, a user might prefer to have a less expensive construct substituted.

For example, there are numerous handheld computers running the Windows CE** operating system, which uses a reduced function version of Microsoft's Internet Explorer browser. Early versions of the browser do not support Java applets. Devices with even more constrained resources, especially memory and processing power, may have browsers with even less support for HTML functions, such as frames, JavaScript**, and perhaps even tables. As the different types of somewhat limited devices that provide some type of HTML browser to allow accessibility to the Internet grow in number, the permutations of HTML capabilities that are and are not supported also grow.

Despite the large number of limited-function devices, much of the HTML content being written today is produced to take advantage of the advanced capabilities of powerful workstation browsers. Rather than each content provider producing multiple versions based on the capabilities of each possible client device, it is desirable to allow the content to be created once. Transcoding can be used to transform the content into a form suitable for the client device. In WebSphere Transcoding Publisher, this process of transforming the HTML content based on the capabilities of the client HTML browser is called *HTML simplification*. This transcoding could be done in two ways: (1) create transcoding function unique to each different device type, or (2) characterize the capabilities of devices in some way and use these characteristics as parameters to direct the transcoding function.

For the reasons discussed earlier, and considering the rapidly growing number of different types of devices supporting HTML browsers with differing levels of support, the WebSphere Transcoding Publisher took the second approach. By using a set of properties that describe the capability of a given browser to render various HTML elements, a *profile* describing the browser can be generated. This profile provides sufficient information to direct the transcoding process. In WTP these descriptive properties are referred to as *preferences*, because in some cases these parameters are truly what is *preferred* in the context of the environment in which such devices might be used, such as using a wireless connection to access the Internet. In a wireless environment, the textLinksPreferredToImages preference might be set to *true*, indicating that the HTML simplification process should generate a link to a separate page containing an image rather than automatically downloading it and rendering it in-line in the page, thus giving the user the choice of whether to spend the time and byte transmission cost of downloading the image to the device.

As another example, some limited-function browsers are unable to render HTML TABLE elements. For this case, WTP uses a convertTablesToUnorderedLists preference that can have a Boolean *true* or *false* value. For a limited browser that does not support tables, this value is set to *true* to indicate that the table should be converted into an unordered (nested) list. This preserves the relationship between nested tables by representing them as nested unordered lists.

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Table 1 HTML simplification with preferences indicating that images should be converted to images to links and that tables should be converted to unordered lists

HTML Fragment	Simplified HTML
<HTML> <body> <img src="images/house.gif" alt="Picture of a House"> <table> <tr><td>991105001PB</td> <td>Ranch</td> <td>$207,000</td> <td>4</td><td>2</td></tr><tr> <td>991105002PB</td> <td>Split Level</td> <td>$237,000</td> <td>5</td> <td>2.5</td> </tr> </table> </body> </HTML>	<HTML> <body> <A HREF="images/house.gif/PVC_PHANTOM_GENERATOR"> Picture of a House 991105001PB - Ranch $207,000 4 2 991105002PB - Split Level $237,000 5 2.5 </body> </HTML>

Currently, approximately 20 preferences in WTP can be used to guide the HTML simplification process, including preferences that indicate which types of image formats are not supported, whether frames are supported, and whether images should be removed entirely.

HTML simplification is only applicable if the content is marked in HTML. The HTML simplification described here is available in WebSphere Transcoding Publisher. It is customizable using the preferences, but flexibility is currently limited to those preferences. Table 1 shows an example of HTML simplification. Figures 3 and 4 show the before and after HTML files from Table 1 rendered in a browser.

XML stylesheet selection and application. An increasingly used approach with XML is to generate content in XML and use XSLT stylesheets to transform the information into a form suitable for display, or to transform the structure to a different one suitable for another party. Thus, XSLT stylesheets can be written to support display of XML content as well as to support the use of XML in electronic data interchange (EDI).

WebSphere Transcoding Publisher provides a framework to aid in using XSLT stylesheets to transform XML documents. The WebSphere Transcoding Publisher includes a version of the *Xalan* XSLT processor, an open-source XSLT processor supported by the Apache XML Project.[15] The major benefits that WTP provides in dealing with XSLT stylesheets and their application to XML documents is a structure for organizing stylesheets and support for defining the criteria used for selecting the proper stylesheet to be used in the transformation of XML documents. For example, an organization might generate content in XML and create different stylesheets to render the content for display on different device types. They might create one stylesheet for generating an HTML version, another for a WML version, and so on. A WTP administrator registers a given stylesheet with WTP, providing the location of the stylesheet, the content type generated (for example, text/HTML), and selection criteria that must exist in the context of an incoming XML document request in order for the stylesheet to be used in transforming that XML document. For example, key-value pairs representing properties associated with a given device, such as the descriptive name of the device, can be used as criteria, guaranteeing that the stylesheet will only be used on requests originating from such devices. Additionally, conditions matching all or a portion of a given document URL can be specified, guaranteeing that the stylesheet will only be used on one or a small number of documents originating from a given server location.

As more and more enterprises use XML and stylesheets, many interesting issues arise. For example, the document type definitions (DTDs) defining

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