

AO 120 (Rev. 08/10)

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Eastern District of Texas - Marshall Texas on the following

☐ Trademarks or ☒ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO. 2:22-cv-494	DATE FILED 12/23/2022	U.S. DISTRICT COURT Eastern District of Texas - Marshall Texas
PLAINTIFF Multimedia Technologies Pte. Ltd. Format m/d/yyyy		DEFENDANT LG ELECTRONICS INC. and LG ELECTRONICS USA, INC.
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 9,055,254	06/09/2015	Multimedia Technologies Pte. Ltd
2 9,237,291	01/12/2016	Multimedia Technologies Pte. Ltd
3 9,232,168	01/05/2016	Multimedia Technologies Pte. Ltd
4 9,247,174	01/26/2016	Multimedia Technologies Pte. Ltd
5 9,510,040	11/29/2016	Multimedia Technologies Pte. Ltd

See attachment page 2

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading		
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK	
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT		
CLERK	(BY) DEPUTY CLERK	DATE

Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
 Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

Continued from page 1:

PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
6. 9,578,384	02/21/2017	Multimedia Technologies Pte. Ltd
7. 9,820,003	11/14/2017	Multimedia Technologies Pte. Ltd
8. 10,419,805	09/17/2019	Multimedia Technologies Pte. Ltd
9. 9,426,527	08/23/2016	Multimedia Technologies Pte. Ltd
10. 9,055,255	06/09/2015	Multimedia Technologies Pte. Ltd
11. 9,185,325	11/10/2015	Multimedia Technologies Pte. Ltd

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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been
filed in the U.S. District Court **FOR THE EASTERN DISTRICT OF TEXAS** on the following

☐ Trademarks or ☒ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO. 23-cv-00060	DATE FILED 2/17/2023	U.S. DISTRICT COURT FOR THE EASTERN DISTRICT OF TEXAS
PLAINTIFF Touchstream Technologies, Inc.		DEFENDANT Altice USA, Inc.; Cequel Communications, LLC; CSC Holdings, LLC; and Friendship Cable of Texas, Inc.
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 8,356,251	1/15/2013	Touchstream Technologies, Inc.
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In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY		
	☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading		
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK	
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DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE
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Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Eastern District of Texas, Marshall Division on the following

☐ Trademarks or ☒ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO. 2:22-cv-367	DATE FILED 3/13/2023	U.S. DISTRICT COURT Eastern District of Texas, Marshall Division
PLAINTIFF Seungman Kim		DEFENDANT Samsung Electronics Co., Ltd., Samsung Electronics America, Inc.
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 US 11,553,072	1/10/2023	Seungman Kim
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In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading		
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK	
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Continued from page 1:

PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
6. 10,419,805	11/14/2017	Multimedia Technologies Pte. Ltd.
7. 9,215,393	12/15/2015	Multimedia Technologies Pte. Ltd.
8. 9,426,527	08/23/2016	Multimedia Technologies Pte. Ltd.
9. 9,077,928	7/7/2015	Multimedia Technologies Pte. Ltd.
10. 9,185,325	11/10/2015	Multimedia Technologies Pte. Ltd.

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☐ Trademarks or ☒ Patents. (☐ the patent action involves 35 U.S.C. § 292.);

DOCKET NO. 2:23-cv-124	DATE FILED 3/24/2023	U.S. DISTRICT COURT Eastern District of Texas - Marshall Division
PLAINTIFF Multimedia Technologies Pte. Ltd.		DEFENDANT Vizio Inc.
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 9,055,255	6/9/2015	Multimedia Technologies Pte. Ltd.
2 9,232,168	1/5/2016	Multimedia Technologies Pte. Ltd.
3 9,247,174	1/26/2016	Multimedia Technologies Pte. Ltd.
4 9,510,040	11/29/2016	Multimedia Technologies Pte. Ltd.
5 9,578,384	2/21/2017	Multimedia Technologies Pte. Ltd.

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been
filed in the U.S. District Court **Western District of Texas** on the following

☐ Trademarks or ☒ Patents. (☐ the patent action involves 35 U.S.C. § 292.)

DOCKET NO. 6:23-cv-249	DATE FILED 4/5/2023	U.S. DISTRICT COURT Western District of Texas
PLAINTIFF Ozmo Licensing LLC		DEFENDANT TCL Electronics Holdings Ltd. and TCL Industries Holdings Co., Ltd.
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 9,264,991	2/16/2016	Ozmo Licensing LLC
2 10,873,906	12/22/2020	Ozmo Licensing LLC
3 8,599,814	12/3/2013	Ozmo Licensing LLC
4 11,012,934	5/18/2021	Ozmo Licensing LLC
5 11,122,504	9/14/2021	Ozmo Licensing LLC

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been
filed in the U.S. District Court **Western District of Texas** on the following

☐ Trademarks or ☒ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO. 6:23-cv-249	DATE FILED 4/5/2023	U.S. DISTRICT COURT Western District of Texas
PLAINTIFF Ozmo Licensing LLC		DEFENDANT TCL Electronics Holdings Ltd. and TCL Industries Holdings Co., Ltd.
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 9,264,991	2/16/2016	Ozmo Licensing LLC
2 10,873,906	12/22/2020	Ozmo Licensing LLC
3 8,599,814	12/3/2013	Ozmo Licensing LLC
4 11,012,934	5/18/2021	Ozmo Licensing LLC
5 11,122,504	9/14/2021	Ozmo Licensing LLC

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court _____ for the Western District of Texas _____ on the following
☐ Trademarks or ☒ Patents. (☐ the patent action involves 35 U.S.C. § 292.);

DOCKET NO. 5:23-cv-387	DATE FILED 3/29/2023	U.S. DISTRICT COURT for the Western District of Texas
PLAINTIFF RFC Lenders of Texas, LLC		DEFENDANT Global-View.net
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 7,430,471	9/30/2008	RFC Lenders of Texas, LLC
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In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court FOR THE DISTRICT OF DELAWARE on the following

☐ Trademarks or ☒ Patents. (☐ the patent action involves 35 U.S.C. § 292.);

DOCKET NO. TBD	DATE FILED 4/3/2023	U.S. DISTRICT COURT FOR THE DISTRICT OF DELAWARE
PLAINTIFF INGENUS PHARMACEUTICALS, LLC, and LEIUTIS PHARMACEUTICALS LLP		DEFENDANT ACCORD HEALTHCARE, INC.
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 10,993,952	5/4/2021	Leiutis Pharmaceuticals Pvt. Ltd.
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In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading		
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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.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/801,601	09/17/2019	10419805	6583-490-CON	1450

111285 7590 08/28/2019
Sheridan Ross P.C.
1560 Broadway
Suite 1200
Denver, CO 80202

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment is 29 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

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 Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site <http://pair.uspto.gov> for additional applicants):

Mikhail Shoykher, Thornhill, CANADA;
FLEXTRONICS AP, LLC, San Jose, CA;
John S. Visosky, Gormley, CANADA;
Sanjiv Sirpal, Oakville, CANADA;

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The USA offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to encourage and facilitate business investment. To learn more about why the USA is the best country in the world to develop technology, manufacture products, and grow your business, visit SelectUSA.gov.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

111285 7590 05/03/2019
Sheridan Ross P.C.
1560 Broadway
Suite 1200
Denver, CO 80202

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

(Typed or printed name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/801,601	11/02/2017	Mikhail Shoykher	6583-490-CON	1450

TITLE OF INVENTION: DATA SERVICE

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$1000	\$0.00	\$0.00	\$1000	08/05/2019

EXAMINER	ART UNIT	CLASS-SUBCLASS
CHAE, KYU	2426	725-110000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-09 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,

(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 Sheridan Ross P.C.

2

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3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

Flextronics AP, LLC

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

San Jose, California, USA

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☒ Corporation or other private group entity ☐ Government

4a. Fees submitted: ☒ Issue Fee ☐ Publication Fee (if required) ☐ Advance Order - # of Copies _____

4b. Method of Payment: (Please first reapply any previously paid fee shown above)

☒ Electronic Payment via EFS-Web ☐ Enclosed check ☐ Non-electronic payment by credit card (Attach form PTO-2038)

☒ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. 19-1970

5. Change in Entity Status (from status indicated above)

☐ Applicant certifying micro entity status. See 37 CFR 1.29

☐ Applicant asserting small entity status. See 37 CFR 1.27

☐ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature /William J. Daley/Date August 2, 2019Typed or printed name William J. DaleyRegistration No. 52,471

Electronic Patent Application Fee Transmittal				
Application Number:		15801601		
Filing Date:		02-Nov-2017		
Title of Invention:		DATA SERVICE		
First Named Inventor/Applicant Name:		Mikhail Shoykher		
Filer:		William John Daley/Kayleigh Kebba		
Attorney Docket Number:		6583-490-CON		
Filed as Large Entity				
Filing Fees for Utility under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
UTILITY APPL ISSUE FEE	1501	1	1000	1000

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				1000

Electronic Acknowledgement Receipt	
EFS ID:	36769811
Application Number:	15801601
International Application Number:	
Confirmation Number:	1450
Title of Invention:	DATA SERVICE
First Named Inventor/Applicant Name:	Mikhail Shoykher
Customer Number:	111285
Filer:	William John Daley/Kayleigh Kebba
Filer Authorized By:	William John Daley
Attorney Docket Number:	6583-490-CON
Receipt Date:	02-AUG-2019
Filing Date:	02-NOV-2017
Time Stamp:	14:54:55
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	\$1000
RAM confirmation Number	E201982E55096706
Deposit Account	191970
Authorized User	Kayleigh Kebba
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: 37 CFR 1.16 (National application filing, search, and examination fees) 37 CFR 1.17 (Patent application and reexamination processing fees)	

37 CFR 1.19 (Document supply fees)
37 CFR 1.20 (Post Issuance fees)
37 CFR 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Issue Fee Payment (PTO-85B)	20190802_issue-fee-transmittal_x_6583-490-CON.pdf	107813	no	1
			eec981bb2a5db3c6d9883b5238593d7a17dc8898		

Warnings:

Information:

2	Fee Worksheet (SB06)	fee-info.pdf	30415	no	2
			7120cf8aefc6f8d7738919ea9e49e40509b781f6		

Warnings:

Information:

Total Files Size (in bytes):			138228
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This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of:

Mikhail Shoykher

Serial No.: 15/801,601

Filed: November 2, 2017

Atty. File No.: 6583-490-CON

Entitled: "DATA SERVICE"

Group Art Unit: 2426

Confirmation No.: 1450

Examiner: CHAE, KYU

Submitted via EFS-Web

Mail Stop Issue Fee
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

COMMENTS ON STATEMENT OF REASONS FOR ALLOWANCE

Dear Commissioner:

Applicant submits these Comments on Statement of Reasons for Allowance to address further the Notice of Allowability ("Notice") having a mailing date of May 3, 2019.

In the Notice, the Examiner's stated reasons for allowance were that:

Claims 1, 4-20 are considered allowable since when reading the claims in light of the specification (MPEP § 2111.01) or *In re Sneed*, 710 F.2 1544, 1548, 218 USPQ 385, 388 Fed. Cir. 1983), none of the references of record alone or in combination disclose or suggest the combination of limitations specified in independent claim 1, wherein the Applicant discloses organizing, by the processor, the data according to a pre-defined format corresponding to each of the plurality of subservices, wherein the pre-defined format comprises one of a VOD data model, an EPG data model and a media data model wherein organizing the data according to the pre-defined format comprises converting the data received from the subservice into the pre-defined format of the corresponding data model and wherein each of the VOD data model, EPG data model and media data model provide a uniform format for the plurality of subservices; and providing, by the processor, the organized data to one or more of a plurality of content provider modules of the TV.

Inter alia, independent claims 12 and 19, wherein the Applicant discloses similar limitations, are allowed for reasons similar to those cited above.

Applicant assumes the patentability of all independent and dependent claims is based upon the elements as set forth in the allowed claims and that such claims meet all criteria for patentability under §101, §102, §103 and §112. Applicant takes no position regarding the Reasons for Allowance presented by the Examiner other than the positions Applicant may have previously taken during prosecution. Therefore, the Reasons for Allowance should not be attributed to Applicant for any reason or as an indication of the bases for Applicant's belief that the claims are patentable.

As is clear from MPEP 1302.14:

The statement [of reasons for allowance] is not intended to necessarily state all the reasons for allowance or all the details why claims are allowed and should not be written to specifically or impliedly state that all the reasons for allowance are set forth.

Accordingly, Applicant respectfully asserts that there may be additional or alternative reasons for patentability of the claimed subject matter not explicitly stated in this record and Applicant does not waive its rights to such arguments by not further addressing such reasons herein.

Although the Applicant believes that no fees are due for filing these Comments on Statement of Reasons for Allowance, please charge any fees deemed necessary to Deposit Account No. 19-1970.

Respectfully submitted,

SHERIDAN ROSS P.C.

By: /Douglas W. Swartz/
Douglas W. Swartz
Registration No. 37,739
1560 Broadway, Suite 1200
Denver, Colorado 80202-5141
(303) 863-9700

Date: July 21, 2019

Electronic Acknowledgement Receipt	
EFS ID:	36644551
Application Number:	15801601
International Application Number:	
Confirmation Number:	1450
Title of Invention:	DATA SERVICE
First Named Inventor/Applicant Name:	Mikhail Shoykher
Customer Number:	111285
Filer:	Theresa Brown
Filer Authorized By:	
Attorney Docket Number:	6583-490-CON
Receipt Date:	22-JUL-2019
Filing Date:	02-NOV-2017
Time Stamp:	00:11:59
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Post Allowance Communication - Incoming	20190721_comments-on-statement-of-reasons_n_6583-490-CON.pdf	96244	no	2
			657025aeb504fbx46d50b2b422f6b16d922d75880		

Warnings:

Information:	
Total Files Size (in bytes):	96244
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.	



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

NOTICE OF ALLOWANCE AND FEE(S) DUE

111285 7590 05/03/2019
Sheridan Ross P.C.
1560 Broadway
Suite 1200
Denver, CO 80202

EXAMINER

CHAE, KYU

ART UNIT

PAPER NUMBER

2426

DATE MAILED: 05/03/2019

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/801,601	11/02/2017	Mikhail Shoykher	6583-490-CON	1450

TITLE OF INVENTION: DATA SERVICE

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$1000	\$0.00	\$0.00	\$1000	08/05/2019

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE 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.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Maintenance fees are due in utility patents issuing on applications filed on or after Dec. 12, 1980. It is patentee's responsibility to ensure timely payment of maintenance fees when due. More information is available at www.uspto.gov/PatentMaintenanceFees.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

111285 7590 05/03/2019
Sheridan Ross P.C.
1560 Broadway
Suite 1200
Denver, CO 80202

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

(Typed or printed name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/801,601	11/02/2017	Mikhail Shoykher	6583-490-CON	1450

TITLE OF INVENTION: DATA SERVICE

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$1000	\$0.00	\$0.00	\$1000	08/05/2019

EXAMINER	ART UNIT	CLASS-SUBCLASS
CHAE, KYU	2426	725-110000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-09 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,

1 _____

(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

2 _____

3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. Fees submitted: ☐ Issue Fee ☐ Publication Fee (if required) ☐ Advance Order - # of Copies _____

4b. Method of Payment: (Please first reapply any previously paid fee shown above)

☐ Electronic Payment via EFS-Web ☐ Enclosed check ☐ Non-electronic payment by credit card (Attach form PTO-2038)

☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. _____

5. Change in Entity Status (from status indicated above)

☐ Applicant certifying micro entity status. See 37 CFR 1.29

☐ Applicant asserting small entity status. See 37 CFR 1.27

☐ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____

Date _____

Typed or printed name _____

Registration No. _____



UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/801,601	11/02/2017	Mikhail Shoykher	6583-490-CON	1450
111285	7590	05/03/2019	EXAMINER	
Sheridan Ross P.C.			CHAE, KYU	
1560 Broadway			ART UNIT	
Suite 1200			PAPER NUMBER	
Denver, CO 80202			2426	

DATE MAILED: 05/03/2019

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

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.

OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 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, Virginia 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.** 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.

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.

Notice of Allowability	Application No. 15/801,601	Applicant(s) Shoykher et al.	
	Examiner KYU CHAE	Art Unit 2426	AIA (FITF) Status Yes

-- 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 12/4/2018.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

3. ☒ The allowed claim(s) is/are 1 and 4-20. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to **PPHfeedback@uspto.gov**.

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

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 areply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
☐ 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)	5. ☒ Examiner's Amendment/Comment
2. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____.	6. ☒ Examiner's Statement of Reasons for Allowance
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material _____.	7. ☐ Other _____.
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date. _____.	

/KYU CHAE/ Primary Examiner, Art Unit 2426	
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EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Amendment to the Claims:

1. A method of providing content for a television (TV), the method comprising:

receiving, by ~~the~~ a processor, data relevant to one or more scheduled events from one of a corresponding subservice of a plurality of subservices, wherein the plurality of subservices comprises a ~~VOD~~ **video-on-demand (VOD)** subservice, ~~EPG~~ **electronic programming guide (EPG)** subservice, and a media subservice

organizing, by the processor, the data according to a pre-defined format corresponding to each of the plurality of subservices, wherein the pre-defined format comprises one of a VOD data model, an EPG data model and a media data model, wherein organizing the data according to the pre-defined format comprises converting the data received from the subservice into the pre-defined format of the corresponding data model and wherein each of the VOD data model, ~~EPG~~ **EPG** data model, and media data model provide a uniform format for the plurality of subservices; and

providing, by the processor, the organized data to one or more of a plurality of content provider modules of the TV.

12. A data service system in a Television (TV), the system comprising:
a processor; and
a computer-readable storage medium storing computer-readable instructions, which when executed by the processor, cause the processor to perform:

receiving data relevant to one or more scheduled events from one of a corresponding subservice of a plurality of subservices, wherein the plurality of subservices comprises a ~~VOD~~ **video-on-demand (VOD)** subservice, an ~~EPG~~ **electronic programming guide (EPG)** subservice, and a media subservice;

organizing the data according to a pre-defined format corresponding to each of the plurality of subservices, wherein the pre-defined format comprises one of a VOD data model, an EPG data model, and a media data model, wherein organizing the data according to the pre-defined format comprises converting the data received from the subservice into the pre-defined format of the corresponding data model, and wherein each of the VOD data model, ~~EPG~~ **EPG** data model, and media data model provide a uniform format for the plurality of subservices; and

providing the organized data to one or more of a plurality of content provider modules of the TV.

19. A computer program product for providing content for a Television (TV), the computer program product comprising a non-transitory computer-

readable storage medium having computer-readable program code embodied therewith, the computer-readable program code configured when executed by a processor to:

receive data relevant to one or more scheduled events from one of a corresponding subservice of a plurality of subservices, wherein the plurality of subservices comprises a ~~VOD~~ **video-on-demand (VOD)** subservice, an ~~EPG~~ **electronic programming guide (EPG)** subservice, and a media subservice;

organize the data according to a pre-defined format corresponding to each of the plurality of subservices, wherein the pre-defined format comprises one of a VOD data model, an EPG data model, and a media data model, wherein organizing the data according to the pre-defined format comprises converting the data received from the subservice into the pre-defined format of the corresponding data model, and wherein each of the VOD data model, ~~EPG~~ **EPG** data model, and media data model provide a uniform format for the plurality of subservices; and

provide the organized data to one or more of a plurality of content provider modules of the TV.

20. (Currently Amended) The ~~Intelligent~~ TV of claim 19, wherein the plurality of content provider modules comprises an EPG data provider, a media data provider, a media browser, a media scanner, and/or thumbnail engine.

Reasons for Allowance

2. Claims 1, 4-20 are considered allowable since when reading the claims in light of the specification (MPEP § 2111.01) or *In re Sneed*, 710 F.2 1544, 1548, 218 USPQ 385,388 Fed. Cir. 1983), none of the references of record alone or in combination disclose or suggest the combination of limitations specified in independent claim 1, wherein the Applicant discloses organizing, by the processor, the data according to a pre-defined format corresponding to each of the plurality of subservices, wherein the pre-defined format comprises one of a VOD data model, an EPG data model and a media data model wherein organizing the data according to the pre-defined format comprises converting the data received from the subservice into the pre-defined format of the corresponding data model and wherein each of the VOD data model, EPG data model and media data model provide a uniform format for the plurality of subservices; and providing, by the processor, the organized data to one or more of a plurality of content provider modules of the TV.

Inter alia, independent claims 12 and 19, wherein the Applicant discloses similar limitations, are allowed for reasons similar to those cited above.

3. 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."

Correspondence Information

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to KYU CHAE whose telephone number is (571)270-5696. The examiner can normally be reached on 8:00am -4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, NASSER MOAZZAMI can be reached on 571-272-4195. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/KYU CHAE/
Primary Examiner, Art Unit 2426

<i>Search Notes</i> 	Application/Control No. 15/801,601	Applicant(s)/Patent Under Reexamination Shoykher et al.
	Examiner KYU CHAE	Art Unit 2426

CPC - Searched*		
Symbol	Date	Examiner
H04N21/4131, H04N21/43615, H04N21/4782, H04N21/4882	04/10/2019	KC

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	Date	Examiner
Inventor Name Search (east/palm)	2/1/2018	KC
EAST Search	2/1/2018	KC
H04N21/4131, H04N21/43615, H04N21/4782, H04N21/4882 (keyword)	2/1/2018	KC
EAST Search (updated)	08/09/2018	KC
H04N21/4131, H04N21/43615, H04N21/4782, H04N21/4882 (keyword, updated)	08/09/2018	KC
EAST Search (updated)	04/10/2019	KC
H04N21/4131, H04N21/43615, H04N21/4782, H04N21/4882 (keyword, updated)	04/10/2019	KC

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner
USPPub	Independent Claim Keyword	04/11/2019	KC

/KYU CHAE/ Primary Examiner.Art Unit 2426	
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<i>Search Notes</i> 	Application/Control No. 15/801,601	Applicant(s)/Patent Under Reexamination Shoykher et al.
	Examiner KYU CHAE	Art Unit 2426

/KYU CHAE/ Primary Examiner.Art Unit 2426	
--	--

<i>Index of Claims</i> 	Application/Control No. 15/801,601	Applicant(s)/Patent Under Reexamination Shoykher et al.
	Examiner KYU CHAE	Art Unit 2426

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

CLAIMS										
☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47										
CLAIM		DATE								
Final	Original	02/01/2018	08/09/2018	04/11/2019						
1	1	✓	✓	=						
	2	✓	✓	-						
	3	✓	✓	-						
2	4	✓	✓	=						
3	5	✓	✓	=						
4	6	✓	✓	=						
5	7	✓	✓	=						
6	8	✓	✓	=						
7	9	✓	✓	=						
8	10	✓	✓	=						
9	11	✓	✓	=						
10	12	✓	✓	=						
11	13	✓	✓	=						
12	14	✓	✓	=						
13	15	✓	✓	=						
14	16	✓	✓	=						
15	17	✓	✓	=						
16	18	✓	✓	=						
17	19	✓	✓	=						
18	20	✓	✓	=						

Issue Classification 	Application/Control No. 15/801,601	Applicant(s)/Patent Under Reexamination Shoykher et al.
	Examiner KYU CHAE	Art Unit 2426

CPC						
Symbol					Type	Version
H04N		21		4131	F	2013-01-01
H04N		21		43615	I	2013-01-01
H04N		21		4782	I	2013-01-01
H04N		21		4882	I	2013-01-01

CPC Combination Sets				
Symbol	Type	Set	Ranking	Version

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	18	
/KYU CHAE/ Primary Examiner, Art Unit 2426	11 April 2019	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	14

U.S. Patent and Trademark Office

Part of Paper No.: 20190405

Issue Classification 	Application/Control No. 15/801,601	Applicant(s)/Patent Under Reexamination Shoykher et al.
	Examiner KYU CHAE	Art Unit 2426

INTERNATIONAL CLASSIFICATION			
CLAIMED			
G06F		3	00
G06F		13	00
H04N		5	445
H04N		7	16
NON-CLAIMED			

US ORIGINAL CLASSIFICATION	
CLASS	SUBCLASS
725	37

CROSS REFERENCES(S)						
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)					
725	39	44	48	59		

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	18	
/KYU CHAE/ Primary Examiner, Art Unit 2426	11 April 2019	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	14

U.S. Patent and Trademark Office

Part of Paper No.: 20190405

Issue Classification 	Application/Control No. 15/801,601	Applicant(s)/Patent Under Reexamination Shoykher et al.
	Examiner KYU CHAE	Art Unit 2426

☐ Claims renumbered in the same order as presented by applicant	☐ CPA	☐ T.D.	☐ R.1.47
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CLAIMS															
Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
1	1	8	10	17	19										
	2	9	11	18	20										
	3	10	12												
2	4	11	13												
3	5	12	14												
4	6	13	15												
5	7	14	16												
6	8	15	17												
7	9	16	18												

NONE (Assistant Examiner) _____ (Date) _____		Total Claims Allowed: 18	
/KYU CHAE/ Primary Examiner, Art Unit 2426 (Primary Examiner) _____ (Date) 11 April 2019		O.G. Print Claim(s) 1	O.G. Print Figure 14

U.S. Patent and Trademark Office

Part of Paper No.: 20190405

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S121	498	VOD with EPG with (Tv or television or DTV)	US-PGPUB; USPAT; EPO; JPO	ADJ	ON	2019/04/05 13:24
S124	188	VOD with EPG with (Tv or television or DTV) with (app or application or software)	US-PGPUB; USPAT; EPO; JPO	ADJ	ON	2019/04/05 14:23
S125	19	(vod with epg with (\$4service)).clm.	US-PGPUB; USPAT; EPO; JPO	ADJ	ON	2019/04/05 14:32
S131	326	(vod or on\$1demand or ondemand) with (plug\$in or plugin or app or application) and (epg or (program\$4 (guide or list\$4)) or IPG) with (plug\$in or plugin or app or application) AND (Tv or television or dTV) and (organiz\$4 or order\$4 or sort\$4) with format	US-PGPUB; USPAT; EPO; JPO	ADJ	ON	2019/04/08 11:11
S132	273	(vod or on\$1demand or ondemand) with (plug\$in or plugin or app or application) and (epg or (program\$4 (guide or list\$4)) or IPG) with (plug\$in or plugin or app or application) with (organiz\$4 or order\$4 or sort\$4) AND (Tv or television or dTV)	US-PGPUB; USPAT; EPO; JPO	ADJ	ON	2019/04/08 14:02
S133	76	(vod or on\$1demand or ondemand) with (plug\$in or plugin or app or application) with (epg or (program\$4 (guide or list\$4)) or IPG) with (plug\$in or plugin or app or application) with (organiz\$4 or order\$4 or sort\$4) AND (Tv or television or dTV)	US-PGPUB; USPAT; EPO; JPO	ADJ	ON	2019/04/08 14:12
S134	417	(vod or on\$1demand or ondemand) with (epg or (program\$4 (guide or list\$4)) or IPG) with (arrang\$6 or organiz\$4 or order\$4 or sort\$4) AND (Tv or television or dTV)	US-PGPUB; USPAT; EPO; JPO	ADJ	ON	2019/04/08 15:34
S135	12	(vod or on\$1demand or ondemand) with (epg or (program\$4 (guide or list\$4)) or IPG) with (convert\$4 or format\$4) with model AND (Tv or television or dTV)	US-PGPUB; USPAT; EPO; JPO	ADJ	ON	2019/04/09 07:37
S136	162	(vod or on\$1demand or ondemand) with (epg or (program\$4 (guide or list\$4)) or IPG) with (convert\$4 or format\$4) AND (Tv or television or dTV)	US-PGPUB; USPAT; EPO; JPO	ADJ	ON	2019/04/09 07:46
S137	11	(vod or on\$1demand or ondemand) with (epg or (program\$4 (guide or list\$4)) or IPG) with	US-PGPUB;	ADJ	ON	2019/04/09 16:02

		(uniform) AND (Tv or television or dTV)	USPAT; EPO; JPO			
S139	188	(vod or on\$1demand or ondemand) near2 (source or plugin or plug\$2in) and (epg or (program\$4 (guide or list\$4)) or IPG) near2 (source or plugin or plug\$2in) AND (Tv or television or dTV)	US-PGPUB; USPAT; EPO; JPO	ADJ	ON	2019/04/10 07:25
S141	336	(vod or on\$1demand or ondemand) with (aggregat\$4 or combin\$6) with (epg or (program\$4 (guide or list\$4)) or IPG) AND (Tv or television or dTV)	US-PGPUB; USPAT; EPO; JPO	ADJ	ON	2019/04/10 09:11
S143	15	(vod or on\$1demand or ondemand) near2 (module) same (epg or (program\$4 (guide or list\$4)) or IPG) near2 (module) AND (Tv or television or dTV)	US-PGPUB; USPAT; EPO; JPO	ADJ	ON	2019/04/10 11:13
S145	106	(vod or on\$1demand or ondemand) adj (module or subservice or service) with (epg or (program\$4 (guide or list\$4)) or IPG) adj (module or subservice or service) AND (Tv or television or dTV)	US-PGPUB; USPAT; EPO; JPO	ADJ	ON	2019/04/10 12:07
S146	14	(vod or on\$1demand or ondemand) with (epg or (program\$4 (guide or list\$4)) or IPG) AND (Tv or television or dTV) and sqlite\$4	US-PGPUB; USPAT; EPO; JPO	ADJ	ON	2019/04/10 13:22
S149	383	(vod or on\$1demand or ondemand) with (epg or (program\$4 (guide or list\$4)) or IPG) AND (Tv or television or dTV) and (plugin or plug\$4in)	US-PGPUB; USPAT; EPO; JPO	ADJ	ON	2019/04/10 14:18
S150	33	(vod or on\$1demand or ondemand) with model\$4 with (epg or (program\$4 (guide or list\$4)) or IPG) AND (Tv or television or dTV)	US-PGPUB; USPAT; EPO; JPO	ADJ	ON	2019/04/11 07:42
S151	5	(vod or on\$1demand or ondemand) with API with (epg or (program\$4 (guide or list\$4)) or IPG) AND (Tv or television or dTV)	US-PGPUB; USPAT; EPO; JPO	ADJ	ON	2019/04/11 08:19
S152	57	(vod or on\$1demand or ondemand) with (conver\$8) with (epg or (program\$4 (guide or list\$4)) or IPG) AND (Tv or television or dTV)	US-PGPUB; USPAT; EPO; JPO	ADJ	ON	2019/04/11 08:24
S153	136	(vod or on\$1demand or ondemand) with (arrang\$4 or organiz\$7) with (epg or (program\$4 (guide or list\$4)) or IPG) AND (Tv or television or dTV)	US-PGPUB; USPAT; EPO; JPO	ADJ	ON	2019/04/11 08:53
S154	23	(vod or on\$1demand or ondemand) near2 model\$4 and (epg or (program\$4 (guide or list\$4)) or IPG) near2 model\$4 AND (Tv or television or dTV)	US-PGPUB; USPAT; EPO; JPO	ADJ	ON	2019/04/11 09:34
S155	542	(vod or on\$1demand or ondemand) near2 (app or application or software) and (epg or	US-PGPUB;	ADJ	ON	2019/04/11 09:52

		(program\$4 (guide or list\$4)) or IPG) near2 (app or application or software) AND (Tv or television or dTV)	USPAT; EPO; JPO			
S156	203	(vod or on\$1demand or ondemand) near2 (app or application or software) same (epg or (program\$4 (guide or list\$4)) or IPG) near2 (app or application or software) AND (Tv or television or dTV)	US-PGPUB; USPAT; EPO; JPO	ADJ	ON	2019/04/11 10:18
S157	380	(H04N21/4131 or H04N21/43615 or H04N21/4782 or H04N21/4882).cpc. AND (tv or television or DTV or IPTV) and (EPG or ((program\$4 or channel or service) with (guide or list\$4)) or IPG or ESG) with (application or app or module or engine) AND (browser) with (application or app or module or engine) AND (VOD or (on\$1demand)) with (application or app or module or engine)	US-PGPUB; USPAT; EPO; JPO	ADJ	ON	2019/04/11 12:40

EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S158	2	((vod or on\$1demand or ondemand) near2 (app or application or software) same (epg or (program\$4 (guide or list\$4)) or IPG) near2 (app or application or software) AND (Tv or television or dTV)).clm.	USPAT	ADJ	ON	2019/04/11 12:22
S159	0	((vod or on\$1demand or ondemand) near2 model\$4 and (epg or (program\$4 (guide or list\$4)) or IPG) near2 model\$4 AND (Tv or television or dTV)).clm.	USPAT	ADJ	ON	2019/04/11 12:22
S160	0	((vod or on\$1demand or ondemand) near2 (source or plugin or plug\$2in) and (epg or (program\$4 (guide or list\$4)) or IPG) near2 (source or plugin or plug\$2in) AND (Tv or television or dTV)).clm.	USPAT	ADJ	ON	2019/04/11 12:34
S161	3	((vod or on\$1demand or ondemand) with (epg or (program\$4 (guide or list\$4)) or IPG) with (arrang\$6 or organiz\$4 or order\$4 or sort\$4) AND (Tv or television or dTV)).clm.	USPAT	ADJ	ON	2019/04/11 12:34
S162	1	((vod or on\$1demand or ondemand) with (aggregat\$4 or combin\$6) with (epg or (program\$4 (guide or list\$4)) or IPG) AND (Tv or television or dTV)).clm.	USPAT	ADJ	ON	2019/04/11 12:35

4/ 11/ 2019 2:12:34 PM

C:\Users\kchae\Documents\EAST\Workspaces\13969190.wsp

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.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875				Application or Docket Number 15/801,601		Filing Date 11/02/2017		☐ To be Mailed	
ENTITY: ☒ LARGE ☐ SMALL ☐ MICRO									
APPLICATION AS FILED – PART I									
(Column 1)		(Column 2)							
FOR	NUMBER FILED	NUMBER EXTRA		RATE (\$)		FEE (\$)			
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A		N/A					
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A		N/A					
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A		N/A					
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =		*	X \$ =					
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =		*	X \$ =					
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 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).								
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))									
* If the difference in column 1 is less than zero, enter "0" in column 2.						TOTAL			
APPLICATION AS AMENDED – PART II									
(Column 1)		(Column 2)		(Column 3)					
AMENDMENT	12/04/2018	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)		ADDITIONAL FEE (\$)	
	Total (37 CFR 1.16(i))	* 18	Minus	** 20	= 0	X \$100 =		0	
	Independent (37 CFR 1.16(h))	* 3	Minus	***3	= 0	X \$460 =		0	
	☐ Application Size Fee (37 CFR 1.16(s))								
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))								
						TOTAL ADD'L FEE		0	
(Column 1)		(Column 2)		(Column 3)					
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)		ADDITIONAL FEE (\$)	
	Total (37 CFR 1.16(i))	*	Minus	**	=	X \$ =			
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X \$ =			
	☐ Application Size Fee (37 CFR 1.16(s))								
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))								
						TOTAL ADD'L 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.									

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 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: 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.

Doc code: RCEX

Doc description: Request for Continued Examination (RCE)

PTO/SB/30EFS (02-18)

Approved for use through 11/30/2020. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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REQUEST FOR CONTINUED EXAMINATION(RCE)TRANSMITTAL **(Submitted Only via EFS-Web)**

Application Number	15/801,601	Filing Date	2017-11-02	Docket Number (if applicable)	6583-490-CON	Art Unit	2426
First Named Inventor	Mikhail Shoykher			Examiner Name	Kyu Chae		

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.

Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. The Instruction Sheet for this form is located at WWW.USPTO.GOV

SUBMISSION REQUIRED UNDER 37 CFR 1.114

Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

☐ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.

☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____

☐ Other _____

☒ Enclosed

☒ Amendment/Reply

☐ Information Disclosure Statement (IDS)

☐ Affidavit(s)/ Declaration(s)

☐ Other _____

MISCELLANEOUS

☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of months _____
 (Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)

☐ Other _____

FEES

The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.

☒ The Director is hereby authorized to charge any underpayment of fees, or credit any overpayments, to
 Deposit Account No 191970

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

☒ Patent Practitioner Signature

Applicant Signature

Doc code: RCEX

Doc description: Request for Continued Examination (RCE)

PTO/SB/30EFS (02-18)

Approved for use through 11/30/2020. 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.

Signature of Registered U.S. Patent Practitioner			
Signature	William J. Daley/	Date (YYYY-MM-DD)	2018-12-04
Name	William J. Daley	Registration Number	52471

This collection of information is required by 37 CFR 1.114. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 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.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

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 the Freedom of Information Act requires disclosure of these records.
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 inspections 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.

Application Serial No. 15/801,601
Amendment and Response

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No.:	15/801,601	)	Confirmation No.:	1450
		)		
Applicant:	Mikhail SHOYKHER	)	TC/A.U.:	2426
		)		
Filed:	November 2, 2017	)	Examiner:	CHAE, KYU
		)		
Docket No.:	6583-490-CON	)		
		)		
For:	"DATA SERVICE"	)		
		)		

Filed Electronically

AMENDMENT AND RESPONSE

Mailstop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Commissioner:

Applicant submits this Amendment and Response to address the Final Office Action having a mailing date of September 4, 2018. Applicant submits a Request for Continued Examination herewith, along with the required fee. Although Applicant believes that no additional fees are due in connection with filing this Amendment and Response, please charge any fees deemed necessary to Deposit Account No. 19-1970.

AMENDMENTS TO THE CLAIMS

Please cancel claims 2 and 3 without prejudice or disclaimer. This listing of the claims will replace all previous listings.

1. (Currently Amended) A method of providing content for a television (TV), the method comprising:
~~loading, by a processor, an internal content provider module in response to one of a user action and a scheduled event on the TV;~~
receiving, by the processor, data relevant to ~~the one of the user action and the one or more scheduled event~~ events from one of a corresponding subservice ~~and the content provider module of the TV~~ of a plurality of subservices, wherein the ~~data comprises visual content~~ plurality of subservices comprises a VOD subservice, an EPG subservice, and a media subservice;
organizing, by the processor, the data according to a pre-defined format corresponding to each of the plurality of subservices, wherein the pre-defined format comprises one of a VOD data model, an EPG data model, and a media data model, wherein organizing the data according to the pre-defined format comprises converting the data received from the subservice into the pre-defined format of the corresponding data model, and wherein each of the VOD data model, EPG data model, and media data model provide a uniform format for the plurality of subservices; and
providing, by the processor, the ~~content to an application~~ organized data to one or more of a plurality of content provider modules of the TV.
2. (Canceled)
3. (Canceled)
4. (Currently Amended) The method of claim 1, wherein the plurality of content provider ~~module~~ modules comprises ~~one of~~ an EPG data provider, a media data provider, a media browser, a media scanner, and a thumbnail engine.

5. (Previously Presented) The method of claim 4, wherein the EPG data provider is configured to serve one or more applications of the TV with EPG information in a read-only format.

6. (Previously Presented) The method of claim 4, wherein the media data provider is configured to provide media metadata personalized for a user.

7. (Previously Presented) The method of claim 6, wherein the media data provider is further configured to store the media metadata in an SQLite database.

8. (Previously Presented) The method of claim 4, wherein the media browser is configured to provide a real-time view of media sources of the TV and maintain a list of connected media sources of the TV.

9. (Previously Presented) The method of claim 8, wherein the media browser maintains a non-permanent storage.

10. (Previously Presented) The method of claim 8, wherein the media scanner is configured to populate a media table using data retrieved by the media browser and rescan for new media periodically.

11. (Previously Presented) The method of claim 4, wherein the thumbnail engine is configured to provide thumbnails for media, applications, or other contents.

12. (Currently Amended) A data service system in a Television (TV), the system comprising:

a processor; and

a computer-readable storage medium storing computer-readable instructions,

which when executed by the processor, cause the processor to perform:

~~loading an internal content provider module in response to one of a user action and a scheduled event on the TV;~~

receiving data relevant to ~~the one of the user action and the~~ one or more ~~scheduled event~~ events from one of a corresponding subservice ~~and the content provider module of the TV~~ of a plurality of subservices, wherein the data comprises visual content

plurality of subservices comprises a VOD subservice, an EPG subservice, and a media subservice;

organizing the data according to a pre-defined format corresponding to each of the plurality of subservices, wherein the pre-defined format comprises one of a VOD data model, an EPG data model, and a media data model, wherein organizing the data according to the pre-defined format comprises converting the data received from the subservice into the pre-defined format of the corresponding data model, and wherein each of the VOD data model, EPG data model, and media data model provide a uniform format for the plurality of subservices; and

providing the ~~content to an application~~ organized data to one or more of a plurality of content provider modules of the TV.

13. (Currently Amended) The data service system of claim 12, wherein the ~~internal~~ plurality of content provider module modules comprises an EPG data provider, a media data provider, a media browser, a media scanner, and/or thumbnail engine.

14. (Previously Presented) The data service system of claim 13, wherein the EPG data provider is configured to serve one or more applications of the TV with EPG information in a read-only format.

15. (Original) The data service system of claim 13, wherein the media data provider is configured to provide media metadata personalized for a user.

16. (Previously Presented) The data service system of claim 13, wherein the media browser is configured to provide a real-time view of media sources of the TV and maintain a list of connected media sources of the TV.

17. (Original) The data service system of claim 13, wherein the media scanner is configured to populate a media table using data retrieved by the media browser and rescan for new media periodically.

18. (Original) The data service system of claim 13, wherein the thumbnail engine is configured to provide thumbnails for media, applications, or other contents.

19. (Currently Amended) A computer program product for providing content for a Television (TV), the computer program product comprising a non-transitory computer-readable storage medium having computer-readable program code embodied therewith, the computer-readable program code configured when executed by a processor to:

~~load an internal content provider module in response to one of a user action and a scheduled event on the TV;~~

~~receive data relevant to the one of the user action and the one or more scheduled event events from one of a corresponding subservice and the content provider module of the TV of a plurality of subservices, wherein the data comprises visual content plurality of subservices comprises a VOD subservice, an EPG subservice, and a media subservice;~~

~~organize the data according to a pre-defined format corresponding to each of the plurality of subservices, wherein the pre-defined format comprises one of a VOD data model, an EPG data model, and a media data model, wherein organizing the data according to the pre-defined format comprises converting the data received from the subservice into the pre-defined format of the corresponding data model, and wherein each of the VOD data model, EPG data model, and media data model provide a uniform format for the plurality of subservices; and~~

~~provide the content to an application organized data to one or more of a plurality of content provider modules of the TV.~~

20. (Currently Amended) The Intelligent TV of claim 19, wherein the ~~internal~~ plurality of content provider module modules comprises an EPG data provider, a media data provider, a media browser, a media scanner, and/or thumbnail engine.

REMARKS

Status of the Claims

The above-identified patent application has been reviewed in light of the Examiner's Action dated September 4, 2018. Prior to entry of this amendment, claims 1-20 were pending. Claims 1, 4, 12, 13, 19, and 20 have been amended, claims 2 and 3 have been canceled, and no new claims have been added herein. Accordingly, claims 1 and 4-20 remain pending. As set forth herein, reconsideration and withdrawal of the rejections of the claims is respectfully requested.

Claim Rejections Under 35 U.S.C. §103

Claims 1-4, 12, 13, 19 and 20 have been rejected under 35 U.S.C. §103 as being unpatentable over U.S. Patent Publication No. 2013/0152135 to Hong ("Hong") in view of U.S. Patent Publication 2009/0257738 to Park ("Park"). Applicant specifically traverses each of the rejections under 35 U.S.C. §103 because a *prima facie* case of obviousness is not properly established for each, at least considering the inherent problems pointed out with the references and further, that the Examiner's analysis and rationale are not adequate to properly support the combination of the references under §103.

To establish a *prima facie* case of obviousness, all claim limitations must first be taught or suggested by the prior art. *See, e.g., DyStar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick Co.*, 464 F.3d 1356, 1360 (Fed. Cir. 2006). "All words in a claim must be considered in judging the patentability of that claim against the prior art." M.P.E.P. § 2143.03 (citing *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970)). The Examiner must then provide an explicit analysis of the motivation for combining the references. *See KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1741 (2007) ("a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art . . ."). While the Examiner can choose one of several exemplary rationales from the MPEP to support an obviousness rejection, all the rationales in the MPEP still require the Examiner to demonstrate that all the claim elements are shown in the prior art. *See* MPEP § 2143, Original Ninth Edition, March 2014.

Hong is directed to “a network TV providing a browser-based user interface and a method of operating the same.” (paragraph 2) Under Hong, “operating a network TV includes: displaying a TV-only page of an application selected by a user input; transmitting to a mobile terminal a mobile-only page mutually linked with the TV-only page; and controlling an operation of the application according to a user input transmitted from the mobile terminal.” (paragraph 9) However, Hong does not teach or suggest organizing data received from a plurality of subservices according to a pre-defined format corresponding to each of the plurality of subservices, wherein the pre-defined format comprises one of a VOD data model, an EPG data model, and a media data model, wherein organizing the data according to the pre-defined format comprises converting the data received from the subservice into the pre-defined format of the corresponding data model, and wherein each of the VOD data model, EPC data model, and media data model provide a uniform format for the plurality of subservices as recited in each independent claim. Rather, Hong seems to be silent regarding anything that might reasonably be considered to suggest such recitations.

Park is directed to “a digital broadcast receiver for providing a list of specific records among records stored in a storage medium to an application.” (paragraph 3) Under Park:

“A reception unit receives a broadcast signal including a data broadcast-associated application. A storage medium store records. And A controller manages the application, receives a list request for requesting a list of record series belonging to a series from the application, generates a list, selects a record from a list of the stored records based on a link between the series and the record, includes the selected record in the generated list, and transmits the generated list to the application.” (Abstract)

However, Park does not teach or suggest, alone or in combination with Hong, organizing data received from a plurality of subservices according to a pre-defined format corresponding to each of the plurality of subservices, wherein the pre-defined format comprises one of a VOD data model, an EPG data model, and a media data model, wherein organizing the data according to the pre-defined format comprises converting the data received from the subservice into the pre-defined format of the corresponding data model, and wherein each of the VOD data model, EPC data model, and media data model

provide a uniform format for the plurality of subservices as recited in each independent claim. Rather, Park seems to be silent regarding anything that might reasonably be considered to suggest such recitations. Therefore, the Applicant respectfully contends that the combination of Hong and Park fails to teach or suggest each claim recitation. For at least these reasons, the Applicant requests withdrawal of the rejection.

Claims 5 and 14 have been rejected under 35 U.S.C. §103 as being unpatentable over Hong in view of Park and in further view of U.S. Patent Publication No. 2011/0173657 to Thomas (“Thomas”). The Applicant respectfully requests withdrawal of the rejection for at least the reason that the claims each depend upon a base claim that is thought to be allowable as described above.

Claims 6 and 15 have been rejected under 35 U.S.C. §103 as being unpatentable over Hong in view of Park and in further view of U.S. Patent Publication No. 2002/0152474 to Dudkiewicz (“Dudkiewicz”). The Applicant respectfully requests withdrawal of the rejection for at least the reason that the claims each depend upon a base claim that is thought to be allowable as described above.

Claim 7 has been rejected under 35 U.S.C. §103 as being unpatentable over Hong, in view of Park and further in view of Dudkiewicz and in further view of U.S. Patent Publication No. 2013/0019263 to Ferren (“Ferren”). The Applicant respectfully requests withdrawal of the rejection for at least the reason that the claim depends upon a base claim that is thought to be allowable as described above.

Claims 8, 9, 11, 16 and 18 have been rejected under 35 U.S.C. §103 as being unpatentable over Hong in view of Park and further in view of U.S. Patent Publication No. 2012/0297429 to Reed (“Reed”). The Applicant respectfully requests withdrawal of the rejection for at least the reason that the claims each depend upon a base claim that is thought to be allowable as described above.

Claim 10 has been rejected under 35 U.S.C. §103 as being unpatentable over Hong in view of Park, in further view of Reed and in further view of U.S. Patent Publication No. 2002/0056098 to White (“White”). The Applicant respectfully requests withdrawal of the rejection for at least the reason that the claim depends upon a base claim that is thought to be allowable as described above.

Claim 17 has been rejected under 35 U.S.C. §103 as being unpatentable over Choi in view of Park and in further view of White. Claim 17 is rejected under 35 U.S.C. §103 as being unpatentable over Hong in view of Park and further in view of White. The Applicant respectfully requests withdrawal of the rejection for at least the reason that the claim depends upon a base claim that is thought to be allowable as described above.

Claims 1-4, 12, 13, 19 and 20 are rejected under 35 U.S.C. §103 as being unpatentable over U.S. Patent Publication No. 2005/0283800 to Ellis (“Ellis”) in view of U.S. Patent No. 6,665,869 to Ellis (“Ellis 2”) and further in view of Park. Applicant specifically traverses each of the rejections under 35 U.S.C. §103 because a *prima facie* case of obviousness is not properly established for each, at least considering the inherent problems pointed out with the references and further, that the Examiner’s analysis and rationale are not adequate to properly support the combination of the references under §103.

Ellis is directed to “television program guide systems having a program guide application that serves as a portal for other applications.” (paragraph 2) Under Ellis:

“A program guide program application interface is provided that is used to maintain a consistent user interface between the program guide application and the non-program-guide applications. Non-program-guide applications may be launched by the program guide application. The user may select certain non-program-guide applications as favorites and may set parental controls for certain non-program-guide applications. The program guide application may run in the background while a non-program-guide application operates. While the non-program-guide application operates, the program guide may check for events that require immediate attention. When such an event is detected, operation of the non-program-guide application may be suspended and the user may be asked whether the detected event should take place or whether operation of the non-program-guide application should be resumed.” (Abstract)

However, Ellis does not teach or suggest organizing data received from a plurality of subservices according to a pre-defined format corresponding to each of the plurality of subservices, wherein the pre-defined format comprises one of a VOD data model, an EPG data model, and a media data model, wherein organizing the data according to the pre-defined format comprises converting the data received from the subservice into the pre-defined format of the corresponding data model, and wherein each

of the VOD data model, EPC data model, and media data model provide a uniform format for the plurality of subservices as recited in each independent claim. Rather, Ellis seems to be silent regarding anything that might reasonably be considered to suggest such recitations.

Ellis 2 is directed to “systems in which non-guide applications can use both device resources and program guide resources.” (Col. 1, lines 11-12) Under Ellis 2:

“The program guide application runs on the set-top box to provide an interactive display of television program listings. A user may use the program guide to search for listings based on keywords, to order pay programs, to select a television program for recording, etc. The non-guide applications that run on the set-top box may include applications such as an Internet browser application, a video-on-demand application, an interactive promotional channel application, a shopping application, an electronic mail application, an audio-on-demand application, a banking application, a data services application, a wagering application, etc.” (Col. 2, lines 4-15)

However, Ellis 2 does not teach or suggest, alone or in combination with Ellis, organizing data received from a plurality of subservices according to a pre-defined format corresponding to each of the plurality of subservices, wherein the pre-defined format comprises one of a VOD data model, an EPG data model, and a media data model, wherein organizing the data according to the pre-defined format comprises converting the data received from the subservice into the pre-defined format of the corresponding data model, and wherein each of the VOD data model, EPC data model, and media data model provide a uniform format for the plurality of subservices as recited in each independent claim. Rather, Ellis 2 seems to be silent regarding anything that might reasonably be considered to suggest such recitations.

As described above, Park is directed to “a digital broadcast receiver for providing a list of specific records among records stored in a storage medium to an application.” (paragraph 3) Under Park:

“A reception unit receives a broadcast signal including a data broadcast-associated application. A storage medium store records. And A controller manages the application, receives a list request for requesting a list of

record series belonging to a series from the application, generates a list, selects a record from a list of the stored records based on a link between the series and the record, includes the selected record in the generated list, and transmits the generated list to the application.” (Abstract)

However, Park does not teach or suggest, alone or in combination with Ellis and/or Ellis 2, organizing data received from a plurality of subservices according to a pre-defined format corresponding to each of the plurality of subservices, wherein the pre-defined format comprises one of a VOD data model, an EPG data model, and a media data model, wherein organizing the data according to the pre-defined format comprises converting the data received from the subservice into the pre-defined format of the corresponding data model, and wherein each of the VOD data model, EPC data model, and media data model provide a uniform format for the plurality of subservices as recited in each independent claim. Rather, Park seems to be silent regarding anything that might reasonably be considered to suggest such recitations. Therefore, the Applicant respectfully contends that the combination of Ellis, Ellis 2, and Park fails to teach or suggest each claim recitation. For at least these reasons, the Applicant requests withdrawal of the rejection.

Claims 5 and 14 are rejected under 35 U.S.C. §103 as being unpatentable over Ellis in view of Ellis 2 and further in view of Park, and further in view of Thomas. The Applicant respectfully requests withdrawal of the rejection for at least the reason that the claims each depend upon a base claim that is thought to be allowable as described above.

Claims 6 and 15 are rejected under 35 U.S.C. §103 as being unpatentable over Ellis in view of Ellis 2 in further view of Park and further in view of Dudkiewicz. The Applicant respectfully requests withdrawal of the rejection for at least the reason that the claims each depend upon a base claim that is thought to be allowable as described above.

Claim 7 is rejected under 35 U.S.C. §103 as being unpatentable over Ellis in view of Ellis 2 in further view of Park and further in view of Dudkiewicz. The Applicant respectfully requests withdrawal of the rejection for at least the reason that the claim depends upon a base claim that is thought to be allowable as described above.

Claims 8, 9, 11, 16, and 18 are rejected under 35 U.S.C. §103 as being unpatentable over Ellis in view of Ellis 2 in further view of Park and in further view of Reed. The Applicant respectfully requests withdrawal of the rejection for at least the

reason that the claims each depend upon a base claim that is thought to be allowable as described above.

Claim 10 is rejected under 35 U.S.C. §103 as being unpatentable over Ellis in view of Ellis 2 in further view of Park in further view of Reed and in further view of White. The Applicant respectfully requests withdrawal of the rejection for at least the reason that the claim depends upon a base claim that is thought to be allowable as described above.

Claim 17 is rejected under 35 U.S.C. §103 as being unpatentable over Ellis in view of Ellis 2 in further view of Park and in further view of White. The Applicant respectfully requests withdrawal of the rejection for at least the reason that the claim depends upon a base claim that is thought to be allowable as described above.

Conclusion

The application now appearing to be in form for allowance, early notification of same is respectfully requested. Applicant does not acquiesce to any objection, rejection, or argument not specifically addressed herein. Rather, the Applicant believes the amendments and arguments contained herein overcome all objections, rejections, or arguments.

The Examiner is invited to contact the undersigned by telephone if doing so would be of assistance.

Respectfully submitted,
SHERIDAN ROSS P.C.

Date: December 4, 2018

By: /William J. Daley/
William J. Daley
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Electronic Patent Application Fee Transmittal				
Application Number:		15801601		
Filing Date:		02-Nov-2017		
Title of Invention:		DATA SERVICE		
First Named Inventor/Applicant Name:		Mikhail Shoykher		
Filer:		William John Daley/Kayleigh Kebba		
Attorney Docket Number:		6583-490-CON		
Filed as Large Entity				
Filing Fees for Utility under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous:				
RCE- 1ST REQUEST	1801	1	1300	1300
Total in USD (\$)				1300

Electronic Acknowledgement Receipt	
EFS ID:	34477613
Application Number:	15801601
International Application Number:	
Confirmation Number:	1450
Title of Invention:	DATA SERVICE
First Named Inventor/Applicant Name:	Mikhail Shoykher
Customer Number:	111285
Filer:	William John Daley/Kayleigh Kebba
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Attorney Docket Number:	6583-490-CON
Receipt Date:	04-DEC-2018
Filing Date:	02-NOV-2017
Time Stamp:	13:16:42
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	\$1300
RAM confirmation Number	120418INTEFSW00011266191970
Deposit Account	191970
Authorized User	Kayleigh Kebba
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: 37 CFR 1.16 (National application filing, search, and examination fees) 37 CFR 1.17 (Patent application and reexamination processing fees)	

37 CFR 1.19 (Document supply fees)
 37 CFR 1.20 (Post Issuance fees)
 37 CFR 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Request for Continued Examination (RCE)	20181204_RCE_6583-490-CON.pdf	1349899 d3914b66808b171b7bda7b1d035744dfafce69759	no	3

Warnings:

Information:

2		20181204_amendment-02_n_6583-490-CON.pdf	175207 41d32573ddb7eba1b90f3904031dbf377b8ffa78	yes	13
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Multipart Description/PDF files in .zip description

Document Description	Start	End
Amendment Submitted/Entered with Filing of CPA/RCE	1	1
Claims	2	5
Applicant Arguments/Remarks Made in an Amendment	6	13

Warnings:

Information:

3	Fee Worksheet (SB06)	fee-info.pdf	30362 9a5f8fc286292ea0cd122e4cbe171601c15dcf9d	no	2
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Warnings:

Information:

Total Files Size (in bytes): 1555468

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New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/801,601	11/02/2017	Mikhail Shoykher	6583-490-CON	1450
111285	7590	09/04/2018	EXAMINER	
Sheridan Ross P.C.			CHAE, KYU	
1560 Broadway			ART UNIT	PAPER NUMBER
Suite 1200			2426	
Denver, CO 80202			NOTIFICATION DATE	DELIVERY MODE
			09/04/2018	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

edocket@sheridanross.com
flexpatents-sr@sheridanross.com

DETAILED ACTION

Notice of Pre-AIA or AIA Status

1. The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.
2. In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.
3. The Office Action is in response to an AMENDMENT entered 5/8/2018 for the patent application 15/801601 filed 11/2/2017.

Status of Claims

4. Claims 1-20 are pending.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102 of this title, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claims 1-4, 12, 13, 19 and 20** are rejected under 35 U.S.C. 103 as being unpatentable over U.S. Pub. No. 2013/0152135 A1 to *Hong* in view of U.S. Pub. No. 2009/0257738 A1 to *Park*.

As to **claims 1, 12 and 19**, *Hong* discloses a data service system in a Television (TV), the system comprising:

a processor (*Hong* ¶0263); and

a computer-readable storage medium storing computer-readable instructions, which when executed by the processor, cause the processor to perform (*Hong* ¶0263):

loading an internal content provider module in response to one of a user action and a scheduled event on the TV (*Hong* ¶0194-0195, 0200-0201, 0206-0207, 0223, loading SmartTV Platform and/or browser in response to user input and broadcast schedule information on the TV);

receiving data relevant to the one of the user action and the scheduled event from one of a corresponding subservice and the content provider module of the TV, wherein the data comprises visual content (*Hong* ¶0095-0096, 0163-0165, 0194-0195, 0200-0201, 0206-0207, 0223, receiving data relevant to the user input and broadcast schedule information from the plurality of databases e.g. EPG, Search, TV app and where the data includes video, EPG, text content); and

providing the content to an application of the TV (*Hong* ¶0095-0096, 0163-0165, 0194-0195, 0200-0201, 0206-0207, 0223, providing the content to an application of the TV).

Hong does not expressly disclose organizing the data according to a pre-defined format.

Park discloses organizing the data according to a pre-defined format (*Park* Fig. 1, ¶¶0050-0054 & 0064-0069, middleware performs a function for receiving requests of the applications and providing specific services provided by the middleware defined by a broadcast standard e.g. API defined by JAVA, JavaTV API, DVR API and applications using the API defined by the middleware can adjust the start and the end of other applications).

It would have been obvious to a person of ordinary skilled in the art before the effective filing date of the claimed invention to modify *Hong* by organizing the data according to a pre-defined format as disclosed by *Park*. The suggestion/motivation would have been in order to manage a plurality of data broadcasting-associated applications adjusting resources when a collision between various applications occurs, preventing errors.

As to **claim 2**, *Hong* discloses wherein the pre-defined format comprises one of a VOD data model, an EPG data model, and a media data model (*Hong* ¶¶0095-0096, 0163-0165, 0194-0195, 0200-0201, 0206-0207, 0223 and *Park* Fig. 1, ¶¶0050-0054 & 0064-0069).

As to **claim 3**, *Hong* discloses wherein the corresponding subservice comprises one of a VOD subservice, an EPG subservice, and a media subservice (*Hong* ¶¶0095-0096, 0163-0165, 0194-0195, 0200-0201, 0206-0207, 0223 and *Park* Fig. 1, ¶¶0050-0054 & 0064-0069).

As to **claims 4, 13 and 20**, *Hong* discloses wherein the content provider module comprises one of an EPG data provider, a media data provider, a media browser, a media scanner, and a thumbnail engine (*Hong* ¶¶0095-0096, 0163-0165, 0194-0195, 0200-0201, 0206-0207, 0223 and *Park* Fig. 1, ¶¶0050-0054 & 0064-0069).

7. **Claims 5 and 14** are rejected under 35 U.S.C. 103 as being unpatentable over U.S. Pub. No. 2013/0152135 A1 to *Hong* in view of U.S. Pub. No. 2009/0257738 A1 to *Park* and in further view of U.S. Pub. No. 2011/0173657 A1 to *Thomas*.

As to **claims 5 and 14**, *Hong* and *Park* disclose wherein the EPG data provider is configured to serve one or more applications of the TV with EPG information (*Hong* ¶¶0095-0096, 0163-0165, 0194-0195, 0200-0201, 0206-0207, 0223 and *Park* Fig. 1, ¶¶0050-0054 & 0064-0069).

Hong and *Park* do not expressly disclose EPG information in a read-only format.

Thomas discloses EPG information in a read-only format (*Thomas* ¶0053).

It would have been obvious to a person of ordinary skilled in the art before the effective filing date of the claimed invention to modify *Hong* and *Park* by EPG information in a read-only format as disclosed by *Thomas*. The suggestion/motivation would have been in order to manage a plurality of data broadcasting-associated applications adjusting resources when a collision between various applications occurs, preventing errors.

8. **Claims 6 and 15** are rejected under 35 U.S.C. 103 as being unpatentable over U.S. Pub. No. 2013/0152135 A1 to *Hong* in view of U.S. Pub. No. 2009/0257738 A1 to *Park* and in further view of U.S. Pub. No 2002/0152474 A1 to *Dudkiewicz*.

As to **claims 6 and 15**, *Hong* and *Park* do not expressly disclose wherein the media data provider is configured to provide media metadata personalized for a user.

Dudkiewicz discloses wherein the media data provider is configured to provide media metadata personalized for a user (*Dudkiewicz* Fig. 10, ¶¶0075-0076, 0079).

It would have been obvious to a person of ordinary skilled in the art before the effective filing date of the claimed invention to modify *Hong* and *Park* by wherein the media data provider is configured to provide media metadata personalized for a user as disclosed by *Dudkiewicz*. The suggestion/motivation would have been in order to recommend programs specifically tailored for a particular user/viewer enhancing the user's viewing experience.

9. **Claims 7** are rejected under 35 U.S.C. 103 as being unpatentable over U.S. Pub. No. 2013/0152135 A1 to *Hong* in view of U.S. Pub. No. 2009/0257738 A1 to *Park* and in further view of U.S. Pub. No 2002/0152474 A1 to *Dudkiewicz* and in further view of U.S. Pub. No. 2013/0019263 A1 to *Ferren* (examiner citation relied in provisional application 61/508375).

As to **claim 7**, *Hong, Park and Dudkiewicz* do not expressly disclose wherein the media data provider is further configured to store the media metadata in an SQLite database.

Ferren discloses wherein the media data provider is further configured to store the media metadata in an SQLite database (*Ferren* ¶0050, 0051 and provisional pg. 9).

It would have been obvious to a person of ordinary skilled in the art before the effective filing date of the claimed invention to modify *Hong, Park and Dudkiewicz* by wherein the media data provider is further configured to store the media metadata in an SQLite database as disclosed by *Ferren*. The suggestion/motivation would have been in order to store data in a small/fast build for embedded systems without the external protocol processes enhancing the efficiency of the system.

10. **Claims 8, 9, 11, 16 and 18** are rejected under 35 U.S.C. 103 as being unpatentable over U.S. Pub. No. 2013/0152135 A1 to *Hong* in view of U.S. Pub. No. 2009/0257738 A1 to *Park* and in further view of U.S. Pub. No. 2012/0297429 A1 to *Reed*.

As to **claims 8 and 16**, *Hong and Park* do not expressly disclose wherein the media browser is configured to provide a real-time view of media sources of the TV and maintain a list of connected media sources of the TV.

Reed discloses wherein the media browser is configured to provide a real-time view of media sources of the TV and maintain a list of connected media

sources of the TV (*Reed* Fig. 1A, 1B & 2, ¶¶0015, 0034, 0042, web browser application providing real time sources of the media device e.g. television and content list of content sources displayed on the television).

It would have been obvious to a person of ordinary skilled in the art before the effective filing date of the claimed invention to modify *Hong* and *Park* by wherein the media browser is configured to provide a real-time view of media sources of the TV and maintain a list of connected media sources of the TV as disclosed by *Reed*. The suggestion/motivation would have been in order to normalize, index, display and enable interaction with a plurality of content including live content enhancing the user's experience.

As to **claim 9**, *Reed* discloses wherein the media browser maintains a non-permanent storage (*Reed* Fig. 1A, 1B & 2, ¶¶0086-0087).

As to **claims 11 and 18**, *Hong* and *Park* do not expressly disclose wherein the thumbnail engine is configured to provide thumbnails for media, applications, or other contents.

Reed discloses wherein the thumbnail engine is configured to provide thumbnails for media, applications, or other contents (*Reed* Fig. 1A, 1B & 2, ¶¶0030, 0048, web browser application providing real time sources of the media device e.g. television and content list of content sources displayed on the television).

It would have been obvious to a person of ordinary skilled in the art before the effective filing date of the claimed invention to modify *Hong* and *Park* by wherein the thumbnail engine is configured to provide thumbnails for media,

applications, or other contents as disclosed by *Reed*. The suggestion/motivation would have been in order to provide a visual indicator that allows the user/viewer to easily identify content of interest.

11. **Claim 10** is rejected under 35 U.S.C. 103 as being unpatentable over U.S. Pub. No. 2013/0152135 A1 to *Hong* in view of U.S. Pub. No. 2009/0257738 A1 to *Park* in further view of U.S. Pub. No. 2012/0297429 A1 to *Reed* and in further view of U.S. Pub. No. 2002/0056098 A1 to *White*.

As to **claim 10**, *Hong*, *Park* and *Reed* do not expressly disclose wherein the media scanner is configured to populate a media table using data retrieved by the media browser and rescan for new media periodically.

White discloses wherein the media scanner is configured to populate a media table using data retrieved by the media browser and rescan for new media periodically (*White* Fig. 4-8 ¶0052).

It would have been obvious to a person of ordinary skilled in the art before the effective filing date of the claimed invention to modify *Hong*, *Park* and *Reed* by wherein the media scanner is configured to populate a media table using data retrieved by the media browser and rescan for new media periodically as disclosed by *White*. The suggestion/motivation would have been in order to allow a user to see updated content for the other channels which is more recent than when the channel was originally de-selected, without disrupting television reception on the active channel.

12. **Claim 17** is rejected under 35 U.S.C. 103 as being unpatentable over U.S. Pub. No. 2013/0152135 A1 to *Hong* in view of U.S. Pub. No. 2009/0257738 A1 to *Park* and in further view of U.S. Pub. No. 2002/0056098 A1 to *White*.

As to **claim 17**, *Hong* and *Park* do not expressly disclose wherein the media scanner is configured to populate a media table using data retrieved by the media browser and rescan for new media periodically.

White discloses wherein the media scanner is configured to populate a media table using data retrieved by the media browser and rescan for new media periodically (*White* Fig. 4-8 ¶0052).

It would have been obvious to a person of ordinary skilled in the art before the effective filing date of the claimed invention to modify *Hong* and *Park* by wherein the media scanner is configured to populate a media table using data retrieved by the media browser and rescan for new media periodically as disclosed by *White*. The suggestion/motivation would have been in order to allow a user to see updated content for the other channels which is more recent than when the channel was originally de-selected, without disrupting television reception on the active channel.

13. **Claims 1-4, 12, 13, 19 and 20** are rejected under 35 U.S.C. 103 as being unpatentable over U.S. Pub. No. 2005/0283800 A1 to *Ellis* in view of U.S. Patent No. 6,665,869 B1 to *Ellis* (*Ellis 2*) (*Ellis 2* is incorporated by reference in U.S. Pub. No. 2005/0283800 A1 to *Ellis*) and in further view of U.S. Pub. No. 2009/0257738 A1 to *Park*.

As to **claims 1, 12 and 19**, *Ellis* discloses a data service system in a Television (TV), the system comprising:

loading an internal content provider module in response to one of a user action and a scheduled event on the TV (*Ellis* Fig. 1, 2, ¶¶0065, 0067, 0070, 0076, 0116-0119, loading/providing program guide application and program guide API, in response to user input and scheduled event on the TV);

receiving data relevant to the one of the user action and the scheduled event from one of a corresponding subservice and the content provider module of the TV, wherein the data comprises visual content (*Ellis* Fig. 1, 2, ¶¶0065, 0067, 0070, 0076, 0116-0119, receiving corresponding data in response to user input and scheduled event on the TV from the plurality of subservice/content provider applications, e.g. VOD application, home shopping application, etc, of the TV, where the data includes visual content); and

providing the content to an application of the TV (*Ellis* Fig. 1, 2, ¶¶0065, 0067, 0070, 0076, 0116-0119, providing the content to an application of the TV).

Ellis does not expressly disclose a processor; and a computer-readable storage medium storing computer-readable instructions, which when executed by the processor, cause the processor to perform: organizing the data according to a pre-defined format.

However, *Ellis 2* discloses a processor; and a computer-readable storage medium storing computer-readable instructions, which when executed by the processor, cause the processor to perform: organizing the data according to a pre-defined format (*Ellis 2* Fig. 1-3, col. 4, ll. 8-18, col. 5, ll. 30-32).

It would have been obvious to a person of ordinary skilled in the art before the effective filing date of the claimed invention to modify *Ellis* by a processor; and a computer-readable storage medium storing computer-readable instructions, which when executed by the processor as disclosed by *Ellis 2*. The suggestion/motivation would have been in order to provide instructions to be executed on the computing device.

Ellis and *Ellis 2* do not expressly disclose organizing the data according to a pre-defined format

Park discloses organizing the data according to a pre-defined format (*Park* Fig. 1, ¶¶0050-0054 & 0064-0069, middleware performs a function for receiving requests of the applications and providing specific services provided by the middleware defined by a broadcast standard e.g. API defined by JAVA, JavaTV API, DVR API and applications using the API defined by the middleware can adjust the start and the end of other applications).

It would have been obvious to a person of ordinary skilled in the art before the effective filing date of the claimed invention to modify *Ellis* by organizing the data according to a pre-defined format as disclosed by *Park*. The suggestion/motivation would have been in order to manage a plurality of data broadcasting-associated applications adjusting resources when a collision between various applications occurs, preventing errors.

As to **claim 2**, *Ellis* discloses wherein the pre-defined format comprises one of a VOD data model, an EPG data model, and a media data model (*Ellis* Fig. 1, 2, ¶¶0065, 0067, 0070, 0076, 0116-0119 and *Park* Fig. 1, ¶¶0050-0054 & 0064-0069).

As to **claim 3**, *Ellis* discloses wherein the corresponding subservice comprises one of a VOD subservice, an EPG subservice, and a media subservice (*Ellis* Fig. 1, 2, ¶¶0065, 0067, 0070, 0076, 0116-0119 and *Park* Fig. 1, ¶¶0050-0054 & 0064-0069).

As to **claims 4, 13 and 20**, *Ellis* discloses wherein the content provider module comprises one of an EPG data provider, a media data provider, a media browser, a media scanner, and a thumbnail engine (*Ellis* Fig. 1, 2, ¶¶0065, 0067, 0070, 0076, 0116-0119 and *Park* Fig. 1, ¶¶0050-0054 & 0064-0069).

14. **Claims 5 and 14** are rejected under 35 U.S.C. 103 as being unpatentable over U.S. Pub. No. 2005/0283800 A1 to *Ellis* in view of U.S. Patent No. 6,665,869 B1 to *Ellis* (*Ellis 2*) (*Ellis 2* is incorporated by reference in U.S. Pub. No. 2005/0283800 A1 to *Ellis*) in further view of U.S. Pub. No. 2009/0257738 A1 to *Park* and in further view of U.S. Pub. No. 2011/0173657 A1 to *Thomas*.

As to **claims 5 and 14**, *Ellis* and *Park* disclose wherein the EPG data provider is configured to serve one or more applications of the TV with EPG information (*Ellis* Fig. 1, 2, ¶¶0065, 0067, 0070, 0076, 0116-0119 and *Park* Fig. 1, ¶¶0050-0054 & 0064-0069).

Ellis, *Ellis 2* and *Park* do not expressly disclose EPG information in a read-only format.

Thomas discloses EPG information in a read-only format (*Thomas* ¶0053).

It would have been obvious to a person of ordinary skilled in the art before the effective filing date of the claimed invention to modify *Ellis*, *Ellis 2* and *Park* by EPG information in a read-only format as disclosed by *Thomas*. The suggestion/motivation would have been in order to manage a plurality of data broadcasting-associated applications adjusting resources when a collision between various applications occurs, preventing errors.

15. **Claims 6 and 15** are rejected under 35 U.S.C. 103 as being unpatentable over U.S. Pub. No. 2005/0283800 A1 to *Ellis* in view of U.S. Patent No. 6,665,869 B1 to *Ellis* (*Ellis 2*) (*Ellis 2* is incorporated by reference in U.S. Pub. No. 2005/0283800 A1 to *Ellis*) in further view of U.S. Pub. No. 2009/0257738 A1 to *Park* and in further view of U.S. Pub. No 2002/0152474 A1 to *Dudkiewicz*.

As to **claims 6 and 15**, *Ellis*, *Ellis 2* and *Park* do not expressly disclose wherein the media data provider is configured to provide media metadata personalized for a user.

Dudkiewicz discloses wherein the media data provider is configured to provide media metadata personalized for a user (*Dudkiewicz* Fig. 10, ¶0075-0076, 0079).

It would have been obvious to a person of ordinary skilled in the art before the effective filing date of the claimed invention to modify *Ellis*, *Ellis 2* and *Park*

by wherein the media data provider is configured to provide media metadata personalized for a user as disclosed by *Dudkiewicz*. The suggestion/motivation would have been in order to recommend programs specifically tailored for a particular user/viewer enhancing the user's viewing experience.

16. **Claims 7** are rejected under 35 U.S.C. 103 as being unpatentable over U.S. Pub. No. 2005/0283800 A1 to *Ellis* in view of U.S. Patent No. 6,665,869 B1 to *Ellis* (*Ellis 2*) (*Ellis 2* is incorporated by reference in U.S. Pub. No. 2005/0283800 A1 to *Ellis*) in further view of U.S. Pub. No. 2009/0257738 A1 to *Park* and in further view of U.S. Pub. No. 2002/0152474 A1 to *Dudkiewicz* and in further view of U.S. Pub. No. 2013/0019263 A1 to *Ferren* (examiner citation relied in provisional application 61/508375).

As to **claim 7**, *Ellis*, *Ellis 2*, *Park* and *Dudkiewicz* do not expressly disclose wherein the media data provider is further configured to store the media metadata in an SQLite database.

Ferren discloses wherein the media data provider is further configured to store the media metadata in an SQLite database (*Ferren* ¶0050, 0051 and provisional pg. 9).

It would have been obvious to a person of ordinary skilled in the art before the effective filing date of the claimed invention to modify *Ellis*, *Ellis 2*, *Park* and *Dudkiewicz* by wherein the media data provider is further configured to store the media metadata in an SQLite database as disclosed by *Ferren*. The suggestion/motivation would have been in order to store data in a small/fast build

for embedded systems without the external protocol processes enhancing the efficiency of the system.

17. **Claims 8, 9, 11, 16 and 18** are rejected under 35 U.S.C. 103 as being unpatentable over U.S. Pub. No. 2005/0283800 A1 to *Ellis* in view of U.S. Patent No. 6,665,869 B1 to *Ellis* (*Ellis 2*) (*Ellis 2* is incorporated by reference in U.S. Pub. No. 2005/0283800 A1 to *Ellis*) in further view of U.S. Pub. No. 2009/0257738 A1 to *Park* and in further view of U.S. Pub. No. 2012/0297429 A1 to *Reed*.

As to **claims 8 and 16**, *Ellis*, *Ellis 2* and *Park* do not expressly disclose wherein the media browser is configured to provide a real-time view of media sources of the TV and maintain a list of connected media sources of the TV.

Reed discloses wherein the media browser is configured to provide a real-time view of media sources of the TV and maintain a list of connected media sources of the TV (*Reed* Fig. 1A, 1B & 2, ¶¶0015, 0034, 0042, web browser application providing real time sources of the media device e.g. television and content list of content sources displayed on the television).

It would have been obvious to a person of ordinary skilled in the art before the effective filing date of the claimed invention to modify *Ellis*, *Ellis 2* and *Park* by wherein the media browser is configured to provide a real-time view of media sources of the TV and maintain a list of connected media sources of the TV as disclosed by *Reed*. The suggestion/motivation would have been in order to normalize, index, display and enable interaction with a plurality of content including live content enhancing the user's experience.

As to **claim 9**, *Reed* discloses wherein the media browser maintains a non-permanent storage (*Reed* Fig. 1A, 1B & 2, ¶0086-0087).

As to **claims 11 and 18**, *Ellis*, *Ellis 2* and *Park* do not expressly disclose wherein the thumbnail engine is configured to provide thumbnails for media, applications, or other contents.

Reed discloses wherein the thumbnail engine is configured to provide thumbnails for media, applications, or other contents (*Reed* Fig. 1A, 1B & 2, ¶0030, 0048, web browser application providing real time sources of the media device e.g. television and content list of content sources displayed on the television).

It would have been obvious to a person of ordinary skilled in the art before the effective filing date of the claimed invention to modify *Ellis*, *Ellis 2* and *Park* by wherein the thumbnail engine is configured to provide thumbnails for media, applications, or other contents as disclosed by *Reed*. The suggestion/motivation would have been in order to provide a visual indicator that allows the user/viewer to easily identify content of interest.

18. **Claim 10** is rejected under 35 U.S.C. 103 as being unpatentable over U.S. Pub. No. 2005/0283800 A1 to *Ellis* in view of U.S. Patent No. 6,665,869 B1 to *Ellis* (*Ellis 2*) (*Ellis 2* is incorporated by reference in U.S. Pub. No. 2005/0283800 A1 to *Ellis*) in further view of U.S. Pub. No. 2009/0257738 A1 to *Park* in further view of U.S. Pub. No. 2012/0297429 A1 to *Reed* and in further view of U.S. Pub. No. 2002/0056098 A1 to *White*.

As to **claim 10**, *Ellis*, *Ellis 2*, *Park* and *Reed* do not expressly disclose wherein the media scanner is configured to populate a media table using data retrieved by the media browser and rescan for new media periodically.

White discloses wherein the media scanner is configured to populate a media table using data retrieved by the media browser and rescan for new media periodically (*White* Fig. 4-8 ¶0052).

It would have been obvious to a person of ordinary skilled in the art before the effective filing date of the claimed invention to modify *Ellis*, *Ellis 2*, *Park* and *Reed* by wherein the media scanner is configured to populate a media table using data retrieved by the media browser and rescan for new media periodically as disclosed by *White*. The suggestion/motivation would have been in order to allow a user to see updated content for the other channels which is more recent than when the channel was originally de-selected, without disrupting television reception on the active channel.

19. **Claim 17** is rejected under 35 U.S.C. 103 as being unpatentable over U.S. Pub. No. 2005/0283800 A1 to *Ellis* in view of U.S. Patent No. 6,665,869 B1 to *Ellis* (*Ellis 2*) (*Ellis 2* is incorporated by reference in U.S. Pub. No. 2005/0283800 A1 to *Ellis*) in further view of U.S. Pub. No. 2009/0257738 A1 to *Park* and in further view of U.S. Pub. No. 2002/0056098 A1 to *White*.

As to **claim 17**, *Ellis*, *Ellis 2*, and *Park* do not expressly disclose wherein the media scanner is configured to populate a media table using data retrieved by the media browser and rescan for new media periodically.

White discloses wherein the media scanner is configured to populate a media table using data retrieved by the media browser and rescan for new media periodically (*White* Fig. 4-8 ¶0052).

It would have been obvious to a person of ordinary skilled in the art before the effective filing date of the claimed invention to modify *Ellis*, *Ellis 2*, and *Park* by wherein the media scanner is configured to populate a media table using data retrieved by the media browser and rescan for new media periodically as disclosed by *White*. The suggestion/motivation would have been in order to allow a user to see updated content for the other channels which is more recent than when the channel was originally de-selected, without disrupting television reception on the active channel.

Response to Arguments

20. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

21. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

22. Claims 1-20 have been rejected.

Correspondence Information

23. Any inquiry concerning this communication or earlier communications from the examiner should be directed to KYU CHAE whose telephone number is (571)270-5696. The examiner can normally be reached on 8:00am -4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, NASSER MOAZZAMI can be reached on 571-272-4195. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

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USPTO Customer Service Representative or access to the automated information
system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/KYU CHAE/
Primary Examiner, Art Unit 2426

Notice of References Cited	Application/Control No. 15/801,601		Applicant(s)/Patent Under Reexamination Shoykher et al.	
	Examiner KYU CHAE		Art Unit 2426	Page 1 of 1

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*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-20130152135-A1	06-2013	Hong; Hotaek	H04N21/4622	725/51
*	B	US-6665869-B1	12-2003	Ellis; Michael D.	H04N5/4401	348/E5.103
*	C	US-20050283800-A1	12-2005	Ellis, Michael D.	H04N5/44543	725/40
*	D	US-20130019263-A1	01-2013	FERREN; BRAN	G06F13/00	725/37
	E					
	F					
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	M					

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*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC 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.

<i>Search Notes</i> 	Application/Control No. 15/801,601	Applicant(s)/Patent Under Reexamination Shoykher et al.
	Examiner KYU CHAE	Art Unit 2426

CPC - Searched*		
Symbol	Date	Examiner
H04N21/4131, H04N21/43615, H04N21/4782, H04N21/4882	08/09/2018	KC

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	Date	Examiner
Inventor Name Search (east/palm)	2/1/2018	KC
EAST Search	2/1/2018	KC
H04N21/4131, H04N21/43615, H04N21/4782, H04N21/4882 (keyword)	2/1/2018	KC
EAST Search (updated)	08/09/2018	KC
H04N21/4131, H04N21/43615, H04N21/4782, H04N21/4882 (keyword, updated)	08/09/2018	

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner

/KYU CHAE/ Primary Examiner.Art Unit 2426	
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<i>Index of Claims</i> 	Application/Control No. 15/801,601	Applicant(s)/Patent Under Reexamination Shoykher et al.
	Examiner KYU CHAE	Art Unit 2426

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

CLAIMS										
☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47										
CLAIM		DATE								
Final	Original	02/01/2018	08/09/2018							
	1	✓	✓							
	2	✓	✓							
	3	✓	✓							
	4	✓	✓							
	5	✓	✓							
	6	✓	✓							
	7	✓	✓							
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	16	✓	✓							
	17	✓	✓							
	18	✓	✓							
	19	✓	✓							
	20	✓	✓							

Substitute for form 1449/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(Use as many sheets as necessary)</i>				Complete if Known	
				Application Number	15/801,601
				Filing Date	November 2, 2017
				First Named Inventor	Mikhail Shoykher
				Art Unit	2426
				Examiner Name	CHAE, KYU
Sheet	1	of	5	Attorney Docket Number	6583-490-CON

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	Document Number Number-kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
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Substitute for form 1449/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(Use as many sheets as necessary)</i>				Complete if Known	
				Application Number	15/801,601
				Filing Date	November 2, 2017
				First Named Inventor	Mikhail Shoykher
				Art Unit	2426
				Examiner Name	CHAE, KYU
Sheet	2	of	5	Attorney Docket Number	6583-490-CON

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				Art Unit	2426
				Examiner Name	CHAE, KYU
Sheet	3	of	5	Attorney Docket Number	6583-490-CON

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				First Named Inventor	Mikhail Shoykher
				Art Unit	2426
				Examiner Name	CHAE, KYU
Sheet	4	of	5	Attorney Docket Number	6583-490-CON

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Examiner Initials*	Cite No. ¹	Foreign Patent Document Country Code ³ ; Number ⁴ ; Kind Code ⁵ (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
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Examiner Signature	/KYU CHAE/	Date Considered	08/27/2018
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				First Named Inventor	Mikhail Shoykher
				Art Unit	2426
				Examiner Name	CHAE, KYU
Sheet	5	of	5	Attorney Docket Number	6583-490-CON

NON-PATENT LITERATURE DOCUMENTS		
Examiner Initials*	Cite No. ¹	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, page(s), volume-issue number(s), publisher, city and/or country where published.
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	130	International Preliminary Report on Patentability for International (PCT) Patent Application No. PCT/US2013/036804, mailed Feb. 26, 2015 (Attorney's Ref. No. 6583-472-PCT) 12 pages
	131	International Search Report and Written Opinion for International (PCT) Patent Application No. PCT/US13/55383, mailed Nov. 13, 2013 (Attorney's Ref. No. 6583-490-PCT) 9 pages
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EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S89	6	load\$4 with internal content provider module	US-PGPUB; USPAT; EPO; JPO	ADJ	ON	2018/08/08 15:45
S94	71	(tv or television or IPTV or DTV) and (load\$4 with application) with VOD and EPG	US-PGPUB; USPAT; EPO; JPO	ADJ	ON	2018/08/09 09:31
S95	18	(tv or television or IPTV or DTV) and (load\$4 with (user or viewer) with schedul\$4) and VOD and EPG	US-PGPUB; USPAT; EPO; JPO	ADJ	ON	2018/08/09 09:32
S98	127	(tv or television or IPTV or DTV) with (load\$4 with application) AND (VOD) AND (EPG or (program\$6 (guide or list)))	US-PGPUB; USPAT; EPO; JPO	ADJ	ON	2018/08/09 09:44
S101	707	(tv or television or IPTV or DTV) and (load\$4 with application) AND (VOD) AND (EPG or (program\$6 (guide or list))) and (Real\$time or (real time))	US-PGPUB; USPAT; EPO; JPO	ADJ	ON	2018/08/09 11:46
S102	566	(tv or television or IPTV or DTV) with (application or app) and (load\$4 with application) AND (VOD) AND (EPG or (program\$6 (guide or list))) and (Real\$time or (real time))	US-PGPUB; USPAT; EPO; JPO	ADJ	ON	2018/08/09 11:48
S103	426	(tv or television or IPTV or DTV) with (application or app) and (load\$4 with application) AND (VOD) AND (EPG or (program\$6 (guide or list))) and (Real\$time or (real time)) and schedul\$6	US-PGPUB; USPAT; EPO; JPO	ADJ	ON	2018/08/09 12:26
S107	528	(tv or television or IPTV or DTV) with (load\$4 with application) AND (schedul\$4) AND (EPG or (program\$6 or (list\$4 or guide)))	US-PGPUB; USPAT; EPO; JPO	ADJ	ON	2018/08/27 14:21
S108	432	(tv or television or IPTV or DTV) with (load\$4 with application) AND (schedul\$4) AND (EPG or (program\$6 or (list\$4 or guide))) and (broadcast\$4)	US-PGPUB; USPAT; EPO; JPO	ADJ	ON	2018/08/27 14:26
S110	251	(tv or television or IPTV or DTV or smarttv) with (load\$4 with application) AND (schedul\$4) AND (EPG or (program\$6 near3 (list\$4 or guide))) and (broadcast\$4)	US-PGPUB; USPAT; EPO; JPO	ADJ	ON	2018/08/27 14:27

EAST Search History (Interference)

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*Application Serial No. 15/801,601
Amendment and Response*

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No.:	15/801,601	)	Confirmation No.:	1450
		)		
Applicant:	Mikhail SHOYKHER	)	TC/A.U.:	2426
		)		
Filed:	November 2, 2017	)	Examiner:	CHAE, KYU
		)		
Docket No.:	6583-490-CON	)		
		)		
For:	"DATA SERVICE"	)		
		)		

Filed Electronically

AMENDMENT AND RESPONSE

Mailstop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Commissioner:

Applicant submits this Amendment and Response to address the Non-Final Office Action having a mailing date of February 8, 2018. Although Applicant believes that no fees are due in connection with filing this Amendment and Response, please charge any fees deemed necessary to Deposit Account No. 19-1970.

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method of providing content for ~~a~~ an Intelligent television (TV), the method comprising:

loading, by a processor, an internal content provider module in response
~~responsive to one of~~ responsive to one of a user action and ~~[[or]]~~ a scheduled event on the ~~Intelligent~~ TV;
~~communicating and receiving, by the processor, data relevant to the one of the~~
user action and the scheduled event requested content from one of a corresponding
subservice ~~[[or]] and the~~ [[a]] content provider module of the ~~Intelligent~~ TV, wherein the
data comprises visual content;

organizing, by the processor, the received data as the content according to a pre-defined format; and

providing, by the processor, the content to video hardware or display of the
~~Intelligent TV or to a content provider module or an~~ application of the ~~Intelligent~~ TV.

2. (Currently Amended) The method ~~of processing data~~ of claim 1, wherein the pre-defined format comprises one of a VOD data model, an EPG data model, and a media data model.

3. (Currently Amended) The method ~~of processing data~~ of claim 1, wherein the corresponding subservice comprises one of a VOD subservice, an EPG subservice, and a media subservice.

4. (Currently Amended) The method ~~of processing data~~ of claim 1, wherein the ~~internal~~ content provider module comprises one of an EPG data provider, a media data provider, a media browser, a media scanner, ~~[[or]] and~~ and a thumbnail engine.

5. (Currently Amended) The method ~~of processing data~~ of claim 4, wherein the EPG data provider is configured to serve one or more applications of the ~~Intelligent~~ TV with EPG information in a read-only format.

6. (Currently Amended) The method ~~of processing data~~ of claim 4, wherein the media data provider is configured to provide media metadata personalized for a user.

7. (Currently Amended) The method ~~of processing data~~ of claim 6, wherein the media data provider is further configured to store the media metadata in ~~[[a]]an SQLite ~~sqlite~~ database.~~

8. (Currently Amended) The method ~~of processing data~~ of claim 4, wherein the media browser is configured to provide a real-time view of media sources of the ~~Intelligent~~ TV and maintain a list of connected media sources of the ~~Intelligent~~ TV.

9. (Currently Amended) The method ~~of processing data~~ of claim 8, wherein the media browser maintains a non-permanent storage.

10. (Currently Amended) The method ~~of processing data~~ of claim 8, wherein the media scanner is configured to populate a media table using data retrieved by the media browser and rescan for new media periodically.

11. (Currently Amended) The method ~~of processing data~~ of claim 4, wherein the thumbnail engine is configured to provide thumbnails for media, applications, or other contents.

12. (Currently Amended) A data service system in ~~a~~ an Intelligent Television (TV), the system comprising:

a processor; and

a computer-readable storage medium storing computer-readable instructions,

which when executed by the processor, cause the processor to perform:

~~an internal content provider module configured to provide content to video hardware or display of the in Intelligent TV or to a content provider module or application of the Intelligent TV; and~~

~~a subservice configured to provide the internet content provider module with requested data for a pre-defined data model, wherein~~

~~the internal content provider module is loaded on the Intelligent TV responsive to a user action or a schedule event on the Intelligent TV, and wherein~~

~~the internal content provider module organizes the received data from the subservice as the content according to a pre-defined format~~

loading an internal content provider module in response to one of a user action and a scheduled event on the TV;

receiving data relevant to the one of the user action and the scheduled event from one of a corresponding subservice and the content provider module of the TV, wherein the data comprises visual content;

organizing the data according to a pre-defined format; and

providing the content to an application of the TV.

13. (Currently Amended) The data service system of claim 12, wherein the internal content provider module comprises an EPG data provider, a media data provider, a media browser, a media scanner, ~~and or~~ and/or thumbnail engine.

14. (Currently Amended) The data service system of claim 13, wherein the EPG data provider is configured to serve one or more applications of the ~~Intelligent~~ TV with EPG information in a read-only format.

15. (Original) The data service system of claim 13, wherein the media data provider is configured to provide media metadata personalized for a user.

16. (Currently Amended) The data service system of claim 13, wherein the media browser is configured to provide a real-time view of media sources of the ~~Intelligent~~ TV and maintain a list of connected media sources of the ~~Intelligent~~ TV.

17. (Original) The data service system of claim 13, wherein the media scanner is configured to populate a media table using data retrieved by the media browser and rescan for new media periodically.

18. (Original) The data service system of claim 13, wherein the thumbnail engine is configured to provide thumbnails for media, applications, or other contents.

19. (Currently Amended) ~~An Intelligent~~ A computer program product for providing content for a Television (TV) comprising a data service system, the computer program product data service system comprising a non-transitory computer-readable storage medium having computer-readable program code embodied therewith, the computer-readable program code configured when executed by a processor to:

~~an internal content provider module configured to provide content to video hardware or display of the in Intelligent TV or to a content provider module or application of the Intelligent TV; and~~

~~a subservice configured to provide the internet content provider module with requested data for a pre-defined data model, wherein~~

~~the internal content provider module is loaded on the Intelligent TV responsive to a user action or a schedule event on the Intelligent TV, and wherein~~

~~the internal content provider module organizes the received data from the subservice as the content according to a pre-defined format~~

load an internal content provider module in response to one of a user action and a scheduled event on the TV;

receive data relevant to the one of the user action and the scheduled event from one of a corresponding subservice and the content provider module of the TV, wherein the data comprises visual content;

organize the data according to a pre-defined format; and

provide the content to an application of the TV.

20. (Currently Amended) The Intelligent TV of claim 19, wherein the internal content provider module comprises an EPG data provider, a media data provider, a media browser, a media scanner, ~~and or~~and/or thumbnail engine.

REMARKS

Status of the Claims

The above-identified patent application has been reviewed in light of the Examiner's Action dated February 8, 2018. Claims 1-14, 16, 19, and 20 have been amended, and no claims have been added or canceled, without intending to abandon or to dedicate to the public any patentable subject matter. Accordingly, claims 1-20 are now pending. As set forth herein, reconsideration and withdrawal of the rejections of the claims is respectfully requested.

Claim Objections

Claims 13 and 20 are objected to because of informalities. Applicant herein amends claims 13 and 20 and respectfully requests withdrawal of this objection.

Rejections Under 35 U.S.C. §112

Claims 12 and 14-19 stand rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicant herein amends the claims and respectfully requests withdrawal of this rejection.

Claim Rejections Under 35 U.S.C. §103

Claims 1-4, 12, 13, 19 and 20 have been rejected under 35 U.S.C. §103 as being unpatentable over U.S. Patent Publication No. 2013/0031592 to Choi ("Choi") in view of U.S. Patent Publication 2009/025738 to Park ("Park"). Claims 5 and 14 have been rejected under 35 U.S.C. §103 as being unpatentable over Choi in view of Park and in further view of U.S. Patent Publication No. 2011/0173657 to Thomas ("Thomas"). Claims 6, 7, and 15 have been rejected under 35 U.S.C. §103 as being unpatentable over Choi in view of Park and in further view of U.S. Patent Publication No. 2002/0152474 to Dudkiewicz ("Dudkiewicz"). Claims 8, 9, 11, 16 and 18 have been rejected under 35 U.S.C. §103 as being unpatentable over Choi in view of Park and further in view of U.S. Patent Publication No. 2012/0297429 to Reed ("Reed"). Claim 10 has been rejected under 35 U.S.C. §103 as being unpatentable over Choi in view of Park, in further view of

Reed and in further view of U.S. Patent Publication No. 2002/0056098 to White ("White"). Claim 17 has been rejected under 35 U.S.C. §103 as being unpatentable over Choi in view of Park and in further view of White.

To establish a *prima facie* case of obviousness, all claim limitations must first be taught or suggested by the prior art. *See, e.g., DyStar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick Co.*, 464 F.3d 1356, 1360 (Fed. Cir. 2006); 80 U.S.P.Q.2d 1641, 1645 (2006). "All words in a claim must be considered in judging the patentability of that claim against the prior art." MPEP § 2143.03 (citing *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970)). The Examiner must then provide an explicit analysis of the motivation for combining the references. *See KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007); 82 U.S.P.Q.2d 1385, 1396 (2007) ("a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art . . ."). While the Examiner can choose one of several exemplary rationales from the MPEP to support an obviousness rejection, all the rationales in the MPEP still require the Examiner to demonstrate that all the claim elements are shown in the prior art. *See* MPEP § 2143, Original Ninth Edition, March 2014.

Regarding Independent Claim 1

Independent claim 1 recites, *inter alia*

loading, by a processor, an internal content provider module in response to one of a user action and a scheduled event on the TV;

receiving, by the processor, data relevant to the one of the user action and the scheduled event from one of a corresponding subservice and the content provider module of the TV, wherein the data comprises visual content;

organizing, by the processor, the data according to a pre-defined format;
and

providing, by the processor, the content to an application of the TV.

The cited references fail to teach such elements combined and/or arranged in the same was as recited in the claim. For this reason, the rejection under 35 U.S.C. § 103 should be withdrawn.

For example, no cited reference teaches or suggests “receiving . . . data relevant to the one of the user action and the scheduled event from one of a corresponding subservice and the content provider module of the TV” as recited in the claim. *Choi* is cited as teaching “loading applications on the smart TV in response to user input or based on the system on the smart TV”. Office Action, p. 8. As can be appreciated, this does equate to the amended claim which states “receiving . . . data relevant to the one of the user action and the scheduled event from one of a corresponding subservice and the content provider module of the TV”. For this reason, the rejection of claim 1 under 35 U.S.C. § 103 should be withdrawn.

Regarding Claims 2-20

Dependent claim 2-11 depend upon independent claim 1 and thus incorporate the elements of claim 1. For the reasons stated above, the rejections of dependent claims 2-11 under 35 U.S.C. § 103 should be withdrawn.

Independent claim 12 and 19 include the same or similar elements of claim 1 discussed above. For the reasons stated above, the rejections of independent claims 12 and 19 under 35 U.S.C. § 103 should be withdrawn.

Dependent claim 13-18 and dependent claim 20 depend upon independent claims 12 and 19, respectively, and thus incorporate the elements of claims 12 and 19, respectively. For the reasons stated above, the rejections of dependent claims 13-18 and 20 under 35 U.S.C. § 103 should be withdrawn.

Conclusion

The application now appearing to be in form for allowance, early notification of same is respectfully requested. Applicant does not acquiesce to any objection, rejection, or argument not specifically addressed herein. Rather, the Applicant believes the amendments and arguments contained herein overcome all objections, rejections, or arguments.

The Examiner is invited to contact the undersigned by telephone if doing so would be of assistance.

Respectfully submitted,
SHERIDAN ROSS P.C.

Date: May 8, 2018

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Electronic Acknowledgement Receipt	
EFS ID:	32564104
Application Number:	15801601
International Application Number:	
Confirmation Number:	1450
Title of Invention:	DATA SERVICE
First Named Inventor/Applicant Name:	Mikhail Shoykher
Customer Number:	111285
Filer:	John D. Damron/Christine Jacquet
Filer Authorized By:	John D. Damron
Attorney Docket Number:	6583-490-CON
Receipt Date:	08-MAY-2018
Filing Date:	02-NOV-2017
Time Stamp:	14:31:46
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		20180508_amendment-01_n_6583-490-CON.pdf	163207	yes	9
			9766b23ca30f34682c61f75d54b08085cb1a4898		

	Multipart Description/PDF files in .zip description		
	Document Description	Start	End
	Amendment/Req. Reconsideration-After Non-Final Reject	1	1
	Claims	2	5
	Applicant Arguments/Remarks Made in an Amendment	6	9
Warnings:			
Information:			
Total Files Size (in bytes):		163207	
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875				Application or Docket Number 15/801,601		Filing Date 11/02/2017		☐ To be Mailed		
ENTITY: ☒ LARGE ☐ SMALL ☐ MICRO										
APPLICATION AS FILED – PART I										
(Column 1)		(Column 2)								
FOR		NUMBER FILED		NUMBER EXTRA		RATE (\$)		FEE (\$)		
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))		N/A		N/A		N/A				
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))		N/A		N/A		N/A				
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))		N/A		N/A		N/A				
TOTAL CLAIMS (37 CFR 1.16(i))		minus 20 =		*		X \$ =				
INDEPENDENT CLAIMS (37 CFR 1.16(h))		minus 3 =		*		X \$ =				
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))		If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 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).								
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))										
* If the difference in column 1 is less than zero, enter "0" in column 2.						TOTAL				
APPLICATION AS AMENDED – PART II										
(Column 1)		(Column 2)		(Column 3)						
AMENDMENT	05/08/2018		CLAIMS REMAINING AFTER AMENDMENT			HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	
	Total (37 CFR 1.16(i))		* 20		Minus	** 20	= 0	X \$100 =	0	
	Independent (37 CFR 1.16(h))		* 3		Minus	***3	= 0	X \$460 =	0	
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))									
	TOTAL ADD'L FEE								0	
(Column 1)		(Column 2)		(Column 3)						
AMENDMENT			CLAIMS REMAINING AFTER AMENDMENT			HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	
	Total (37 CFR 1.16(i))		*		Minus	**	=	X \$ =		
	Independent (37 CFR 1.16(h))		*		Minus	***	=	X \$ =		
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))									
	TOTAL ADD'L 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.										

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 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: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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Substitute for form 1449/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(Use as many sheets as necessary)</i>				Complete if Known	
				Application Number	15/801,601
				Filing Date	November 2, 2017
				First Named Inventor	Mikhail Shoykher
				Art Unit	2426
				Examiner Name	CHAE, KYU
Sheet	1	of	5	Attorney Docket Number	6583-490-CON

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	Document Number Number-kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	1	6128009	10/03/2000	Ohkura et al.	
	2	6445398	09/03/2002	Gerba et al.	
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	32	2010/0175098	07/08/2010	Zustak et al.	

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				First Named Inventor	Mikhail Shoykher
				Art Unit	2426
				Examiner Name	CHAE, KYU
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				Filing Date	November 2, 2017
				First Named Inventor	Mikhail Shoykher
				Art Unit	2426
				Examiner Name	CHAE, KYU
Sheet	3	of	5	Attorney Docket Number	6583-490-CON

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				Filing Date	November 2, 2017
				First Named Inventor	Mikhail Shoykher
				Art Unit	2426
				Examiner Name	CHAE, KYU
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FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No. ¹	Foreign Patent Document Country Code ³ ; Number ⁴ ; Kind Code ⁵ (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
	123	EP 2328346	06/01/2011	UNITED VIDEO PROPERTIES, INC.		
	124	EP 2487922	08/15/2012	LG ELECTRONICS, INC.		
	125	WO 99/35849	07/15/1999	AMIGA DEVELOPMENT LLC		
	126	WO 01/06788	01/25/2001	UNITED VIDEO PROPERTIES, INC.		
	127	WO 2012/068438	05/24/2012	THOMSON LICENSING		
	128	WO 2014/028069	02/20/2014	FLEXTRONICS AP, LLC		

Examiner Signature		Date Considered	
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				Art Unit	2426
				Examiner Name	CHAE, KYU
Sheet	5	of	5	Attorney Docket Number	6583-490-CON

NON-PATENT LITERATURE DOCUMENTS		
Examiner Initials*	Cite No. ¹	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, page(s), volume-issue number(s), publisher, city and/or country where published.
	129	International Search Report and Written Opinion for International (PCT) Patent Application No. PCT/US2013/036804, mailed Jul. 01, 2013 (Attorney's Ref. No. 6583-472-PCT) 13 pages
	130	International Preliminary Report on Patentability for International (PCT) Patent Application No. PCT/US2013/036804, mailed Feb. 26, 2015 (Attorney's Ref. No. 6583-472-PCT) 12 pages
	131	International Search Report and Written Opinion for International (PCT) Patent Application No. PCT/US13/55383, mailed Nov. 13, 2013 (Attorney's Ref. No. 6583-490-PCT) 9 pages
	132	International Preliminary Report for International (PCT) Patent Application No. PCT/US2013/055383, mailed Apr. 02, 2015 (Attorney's Ref. No. 6583-490-PCT) 8 pages
	133	International Search Report and Written Opinion for International (PCT) Patent Application No. PCT/US13/55389, mailed Mar. 10, 2014 (Attorney's Ref. No. 6583-494-PCT) 10 pages
	134	International Preliminary Report for International (PCT) Patent Application No. PCT/US2013/055389, mailed Apr. 02, 2015 (Attorney's Ref. No. 6583-494-PCT) 9 pages
	135	International Search Report and Written Opinion for International (PCT) Patent Application No. PCT/US13/55564, mailed Nov. 22, 2013 (Attorney's Ref. No. 6583-496-PCT) 7 pages
	136	International Preliminary Report for International (PCT) Patent Application No. PCT/US2013/055564, mailed Apr. 02, 2015 (Attorney's Ref. No. 6583-496-PCT) 6 pages
	137	International Search Report and Written Opinion for International (PCT) Patent Application No. PCT/US13/55379, mailed Dec. 06, 2013 (Attorney's Ref. No. 6583-497-PCT) 8 pages
	138	International Preliminary Report for International (PCT) Patent Application No. PCT/US2013/055379, mailed Apr. 02, 2015 (Attorney's Ref. No. 6583-497-PCT) 8 pages
	139	International Search Report and Written Opinion for International (PCT) Patent Application No. PCT/US13/55567, mailed Dec. 20, 2013 (Attorney's Ref. No. 6583-519-PCT) 10 pages
	140	International Preliminary Report on Patentability for International (PCT) Patent Application No. PCT/US13/55567, mailed Feb. 26, 2015 (Attorney's Ref. No. 6583-519-PCT) 9 pages
	141	International Search Report and Written Opinion for International (PCT) Patent Application No. PCT/US13/55570, mailed Nov. 22, 2013 (Attorney's Ref. No. 6583-520-PCT) 8 pages
	142	International Preliminary Report on Patentability for International (PCT) Patent Application No. PCT/US13/55570, mailed Feb. 26, 2015 (Attorney's Ref. No. 6583-520-PCT) 7 pages
	143	Official Action for U.S. Patent Application No. 13/969,190, mailed Jun. 5, 2015 (Attorney's Ref. No. 6583-490) 16 pages

Examiner Signature		Date Considered	
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. Applicant's unique citation designation number (optional). ²See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁶Applicant is to place a check mark here if English language Translation is attached.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of:	)	Group Art Unit: 2426
Mikhail Shoykher	)	Confirmation No.: 1450
Serial No.: 15/801,601	)	Examiner: CHAE, KYU
Filed: November 2, 2017	)	
Atty. File No.: 6583-490-CON	)	<u>INFORMATION DISCLOSURE</u>
Entitled: "DATA SERVICE"	)	<u>STATEMENT</u>
	)	<i>Electronically Submitted</i>
	)	

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Commissioner:

The references cited on attached Form PTO/SB08 are being called to the attention of the Examiner.

- ☐ Copies of the cited non-patent and/or foreign references are enclosed herewith.
- ☐ Copies of the cited U.S. patents and/or patent applications are enclosed herewith.
- ☒ Copies of the cited U.S. patents/patent application publications are not enclosed in accordance with 37 C.F.R. § 1.98(a).
- ☒ Copies of the cited reference numbers 123-143 are not enclosed, in accordance with 37 C.F.R. § 1.98(d), because the references were cited by or submitted to the U.S. Patent and Trademark Office in prior application Serial No. 13/969,190 filed 08/16/2013, which is relied upon for an earlier filing date under 35 U.S.C. § 120.
- ☐ To the best of applicants' belief, the pertinence of the foreign-language references is believed to be summarized in the attached English abstracts and/or in the figures, although applicants do not necessarily vouch for the accuracy of the translation.
- ☒ Examiner's attention is drawn to the following related applications:
- Serial No. 14/407,609 filed 12/12/2014 (Attorney Ref. No. 6583-472-PUS)
 - Serial No. 13/969,190 filed 08/16/2013 (Attorney Ref. No. 6583-490)
 - Serial No. 13/969,201 filed 08/16/2013 (Attorney Ref. No. 6583-494)
 - Serial No. 13/970,234 filed 08/19/2013 now U.S. Patent No. 9,185,324 (Attorney Ref. No. 6583-496)
 - Serial No. 13/969,205 filed 08/16/2013 (Attorney Ref. No. 6583-497)

- Serial No. 14/821,365 filed 08/07/2015 now U.S. Patent No. 9,819,986 (Attorney Ref. No. 6583-497-CON)
- Serial No. 13/970,243 filed 08/19/2013 (Attorney Ref. No. 6583-519)
- Serial No. 13/971,247 filed 08/19/2013 now U.S. Patent No. 9,369,654 (Attorney Ref. No. 6583-520)

☐ Other: _____

Submission of the above information is not intended as an admission that any item is citable under the statutes or rules to support a rejection, that any item disclosed represents analogous art, or that those skilled in the art would refer to or recognize the pertinence of any reference without the benefit of hindsight, nor should an inference be drawn as to the pertinence of the references based on the order in which they are presented. Submission of this statement should not be taken as an indication that a search has been conducted, or that no better art exists.

It is respectfully requested that the cited information be expressly considered during the prosecution of this application and the references made of record therein.

FEES

☐	37 CFR 1.97(b): No fee is believed due in connection with this submission, because the information disclosure statement submitted herewith is satisfied by one of the following conditions ("X" indicates satisfaction): ☐ Within three months of the filing date of a national application other than a continued prosecution application under 37 CFR 1.53(d), or ☐ Within three months of the date of entry of the national stage as set forth in § 1.491 in an international application, or ☐ Before the mailing date of a first Office Action on the merits, or ☐ Before the mailing of a first Office action after the filing of a request for continued examination under 37 CFR 1.114. Although no fee is believed due, if any fee is deemed due in connection with this submission, please charge such fee to Deposit Account 19-1970.
☒	37 CFR 1.97(c): The information disclosure statement transmitted herewith is being filed after all the above conditions (37 CFR 1.97(b)), but before the mailing date of any one of the following conditions: (1) a final action under 37 C.F.R. 1.113, or (2) a notice of allowance under 37 C.F.R. 1.311, or (3) an action that otherwise closes prosecution in the application. This Information Disclosure Statement is accompanied by: ☐ A Certification (below) as specified by 37 C.F.R. 1.97(e). Although no fee is believed due, if any fee is deemed due in connection with this submission, please charge such fee to Deposit Account 19-1970. OR ☒ Please charge Deposit Account 19-1970 in the amount of \$240.00 for the fee set forth in 37 C.F.R. 1.17(p) for submission of an information disclosure statement. Please credit any overpayment or charge any underpayment to Deposit Account 19-1970.

☐	37 CFR 1.97(d): This Information Disclosure Statement is being submitted after the period specified in 37 CFR 1.97(c). ☐ This information Disclosure Statement includes a Certification (below) as specified by 37 C.F.R. 1.97(e) AND ☐ Applicants hereby requests consideration of the reference(s) disclosed herein. Please charge Deposit Account 19-1970 in the amount of \$240.00 under 37 C.F.R. 1.17(p). Please credit any overpayment or charge any underpayment to Deposit Account 19-1970. Election to pay the fee should not be taken as an indication that applicant(s) cannot execute a certification.
Certification (37 C.F.R. 1.97(e)) (Applicable only if checked)	
☐ The undersigned certifies that: ☐ Each item of information contained in the Information Disclosure Statement submitted herewith 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 this statement. 37 C.F.R. 1.97(e)(1). ☐ A copy of the communication from the foreign patent office is enclosed. OR ☐ No item of information contained in the Information Disclosure Statement submitted herewith was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the undersigned after making reasonable inquiry, no item of information contained in the Information Disclosure Statement was known to any individual designated in 37 C.F.R. 1.56(c) more than three months prior to the filing of this statement. 37 C.F.R. 1.97(e)(2).	

Respectfully submitted,

SHERIDAN ROSS P.C.

By: /Douglas W. Swartz/
 Douglas W. Swartz
 Registration No. 37739
 1560 Broadway, Suite 1200
 Denver, Colorado 80202-5141
 (303) 863-9700

Date: March 30, 2018

Electronic Acknowledgement Receipt	
EFS ID:	32213299
Application Number:	15801601
International Application Number:	
Confirmation Number:	1450
Title of Invention:	DATA SERVICE
First Named Inventor/Applicant Name:	Mikhail Shoykher
Customer Number:	111285
Filer:	Douglas W. Swartz/Mary Notter
Filer Authorized By:	Douglas W. Swartz
Attorney Docket Number:	6583-490-CON
Receipt Date:	30-MAR-2018
Filing Date:	02-NOV-2017
Time Stamp:	18:23:25
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		20180330_IDS_01_6583-490-CON.pdf	2958756	yes	8
			69e99a48fc0894d4d0f20622b5ed27d896360c0b		

	Multipart Description/PDF files in .zip description		
	Document Description	Start	End
	Information Disclosure Statement (IDS) Form (SB08)	4	8
	Transmittal Letter	1	3
Warnings:			
Information:			
Total Files Size (in bytes):		2958756	
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.			

Electronic Patent Application Fee Transmittal				
Application Number:		15801601		
Filing Date:		02-Nov-2017		
Title of Invention:		DATA SERVICE		
First Named Inventor/Applicant Name:		Mikhail Shoykher		
Filer:		Douglas W. Swartz/Mary Notter		
Attorney Docket Number:		6583-490-CON		
Filed as Large Entity				
Filing Fees for Utility under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous:				
Submission- Information Disclosure Stmt	1806	1	240	240
Total in USD (\$)				240

Electronic Acknowledgement Receipt	
EFS ID:	32213336
Application Number:	15801601
International Application Number:	
Confirmation Number:	1450
Title of Invention:	DATA SERVICE
First Named Inventor/Applicant Name:	Mikhail Shoykher
Customer Number:	111285
Filer:	Douglas W. Swartz/Mary Notter
Filer Authorized By:	Douglas W. Swartz
Attorney Docket Number:	6583-490-CON
Receipt Date:	30-MAR-2018
Filing Date:	02-NOV-2017
Time Stamp:	18:27:27
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	\$240
RAM confirmation Number	040218INTEFSW00004349191970
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Fee Worksheet (SB06)	fee-info.pdf	30652	no	2
			7f77aeb2e31afa019a16c5d5365147b488c8bc5		
Warnings:					
Information:					
Total Files Size (in bytes):			30652		
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.					



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 NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
15/801,601	11/02/2017	Mikhail Shoykher	6583-490-CON

CONFIRMATION NO. 1450

111285
Sheridan Ross P.C.
1560 Broadway
Suite 1200
Denver, CO 80202

PUBLICATION NOTICE



Title:DATA SERVICE

Publication No.US-2018-0063568-A1

Publication Date:03/01/2018

NOTICE OF PUBLICATION OF APPLICATION

The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

The publication may be accessed through the USPTO's publically available Searchable Databases via the Internet at www.uspto.gov. The direct link to access the publication is currently <http://www.uspto.gov/patft/>.

The publication process established by the Office does not provide for mailing a copy of the publication to applicant. A copy of the publication may be obtained from the Office upon payment of the appropriate fee set forth in 37 CFR 1.19(a)(1). Orders for copies of patent application publications are handled by the USPTO's Public Records Division. The Public Records Division can be reached by telephone at (571) 272-3150 or (800) 972-6382, by facsimile at (571) 273-3250, by mail addressed to the United States Patent and Trademark Office, Public Records Division, Alexandria, VA 22313-1450 or via the Internet.

In addition, information on the status of the application, including the mailing date of Office actions and the dates of receipt of correspondence filed in the Office, may also be accessed via the Internet through the Patent Electronic Business Center at www.uspto.gov using the public side of the Patent Application Information and Retrieval (PAIR) system. The direct link to access this status information is currently <https://portal.uspto.gov/pair/PublicPair>. Prior to publication, such status information is confidential and may only be obtained by applicant using the private side of PAIR.

Further assistance in electronically accessing the publication, or about PAIR, is available by calling the Patent Electronic Business Center at 1-866-217-9197.

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101



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.
15/801,601	11/02/2017	Mikhail Shoykher	6583-490-CON	1450
111285	7590	02/08/2018	EXAMINER	
Sheridan Ross P.C. 1560 Broadway Suite 1200 Denver, CO 80202			CHAE, KYU	
			ART UNIT	PAPER NUMBER
			2426	
			NOTIFICATION DATE	DELIVERY MODE
			02/08/2018	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

edocket@sheridanross.com
flexpatents-sr@sheridanross.com

Office Action Summary	Application No. 15/801,601	Applicant(s) SHOYKHER ET AL.	
	Examiner KYU CHAE	Art Unit 2426	AIA (First Inventor to File) Status Yes

-- 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 MONTHS 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 11/2/2017.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ____; the restriction requirement and election have been incorporated into this action.
- 4) ☐ 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*

- 5) ☒ Claim(s) 1-20 is/are pending in the application.
5a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 6) ☐ Claim(s) ____ is/are allowed.
- 7) ☒ Claim(s) 1-20 is/are rejected.
- 8) ☐ Claim(s) ____ is/are objected to.
- 9) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☒ The drawing(s) filed on 11/2/2017 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).

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).

Certified copies:

- 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)).

** 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) ☐ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b)
Paper No(s)/Mail Date ____.
- 3) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 4) ☐ Other: ____.

DETAILED ACTION

1. The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

2. In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

Status of Claims

3. Claims 1-20 are pending.

Claim Objections

4. **Claims 13 and 20** are objected to because of the following informalities:
 - Claim 13 on page 51, line 2, the spelling should be changed from “and or” to “and/or”.
 - Claim 20 on page 52, line 2, the spelling should be changed from “and or” to “and/or”

Lines are counted from the beginning of each claim

Appropriate correction is required.

CLAIM INTERPRETATION

5. The following is a quotation of 35 U.S.C. 112(f):

(f) Element in Claim for a Combination. – An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

The following is a quotation of pre-AIA 35 U.S.C. 112, sixth paragraph:

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

6. The claims in this application are given their broadest reasonable interpretation using the plain meaning of the claim language in light of the specification as it would be understood by one of ordinary skill in the art. The broadest reasonable interpretation of a claim element (also commonly referred to as a claim limitation) is limited by the description in the specification when 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, is invoked.

As explained in MPEP § 2181, subsection I, claim limitations that meet the following three-prong test will be interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph:

- (A) the claim limitation uses the term “means” or “step” or a term used as a substitute for “means” that is a generic placeholder (also called a nonce term or a non-structural term having no specific structural meaning) for performing the claimed function;

- (B) the term “means” or “step” or the generic placeholder is modified by functional language, typically, but not always linked by the transition word “for” (e.g., “means for”) or another linking word or phrase, such as “configured to” or “so that”; and
- (C) the term “means” or “step” or the generic placeholder is not modified by sufficient structure, material, or acts for performing the claimed function.

Use of the word “means” (or “step”) in a claim with functional language creates a rebuttable presumption that the claim limitation is to be treated in accordance with 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph. The presumption that the claim limitation is interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, is rebutted when the claim limitation recites sufficient structure, material, or acts to entirely perform the recited function.

Absence of the word “means” (or “step”) in a claim creates a rebuttable presumption that the claim limitation is not to be treated in accordance with 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph. The presumption that the claim limitation is not interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, is rebutted when the claim limitation recites function without reciting sufficient structure, material or acts to entirely perform the recited function.

Claim limitations in this application that use the word “means” (or “step”) are being interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, except as otherwise indicated in an Office action. Conversely, claim limitations in this application that do not use the word “means” (or “step”) are not being interpreted under

35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, except as otherwise indicated in an Office action.

This application includes one or more claim limitations that do not use the word “means,” but are nonetheless being interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, because the claim limitation(s) uses a generic placeholder that is coupled with functional language without reciting sufficient structure to perform the recited function and the generic placeholder is not preceded by a structural modifier. Such claim limitation(s) is/are: an internal content provider module configured to provide, a subservice configured to provide in claim 12 and EPG data provider is configured to serve, the media data provider is configured to provide, the media browser is configured to provide, the media scanner is configured to populate, the thumbnail engine is configured to provide in claims 14-19 respectively.

Because this/these claim limitation(s) is/are being interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, it/they is/are being interpreted to cover the corresponding structure described in the specification as performing the claimed function, and equivalents thereof.

If applicant does not intend to have this/these limitation(s) interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, applicant may: (1) amend the claim limitation(s) to avoid it/them being interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph (e.g., by reciting sufficient structure to perform the claimed function); or (2) present a sufficient showing that the claim limitation(s) recite(s)

sufficient structure to perform the claimed function so as to avoid it/them being interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph.

Claim Rejections - 35 USC § 112

7. The following is a quotation of 35 U.S.C. 112(b):
(b) CONCLUSION.—The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the inventor or a joint inventor regards as the invention.

The following is a quotation of 35 U.S.C. 112 (pre-AIA), second paragraph:
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 12 and 14-19 rejected under 35 U.S.C. 112(b) or 35 U.S.C. 112 (pre-AIA), second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the inventor or a joint inventor, or for pre-AIA the applicant regards as the invention.
9. Claim limitation “an internal content provider module configured to provide and a subservice configured to provide” invokes 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph. However, the written description fails to disclose the corresponding structure, material, or acts for performing the entire claimed function and to clearly link the structure, material, or acts to the function. The specification is devoid of adequate structure to perform the claims functions and/or simply recites the same claimed function without explaining how the function is performed. The specification does not provide sufficient details such that one of ordinary skill in the art would understand an internal content provider module and a subservice performing the claimed function. Therefore, the claim is indefinite and is rejected under 35 U.S.C. 112(b) or pre-AIA 35

U.S.C. 112, second paragraph. Claim 14-19 are rejected and analyzed similarly with respect to claim 12.

Applicant may:

- (a) Amend the claim so that the claim limitation will no longer be interpreted as a limitation under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph;
- (b) Amend the written description of the specification such that it expressly recites what structure, material, or acts perform the entire claimed function, without introducing any new matter (35 U.S.C. 132(a)); or
- (c) Amend the written description of the specification such that it clearly links the structure, material, or acts disclosed therein to the function recited in the claim, without introducing any new matter (35 U.S.C. 132(a)).

If applicant is of the opinion that the written description of the specification already implicitly or inherently discloses the corresponding structure, material, or acts and clearly links them to the function so that one of ordinary skill in the art would recognize what structure, material, or acts perform the claimed function, applicant should clarify the record by either:

- (a) Amending the written description of the specification such that it expressly recites the corresponding structure, material, or acts for performing the claimed function and clearly links or associates the structure, material, or acts to the claimed function, without introducing any new matter (35 U.S.C. 132(a)); or
- (b) Stating on the record what the corresponding structure, material, or acts, which are implicitly or inherently set forth in the written description of the specification,

perform the claimed function. For more information, see 37 CFR 1.75(d) and MPEP §§ 608.01(o) and 2181.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102 of this title, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

11. **Claims 1-4, 12, 13, 19 and 20** are rejected under 35 U.S.C. 103 as being unpatentable over U.S. Pub. No. 2013/0031592 A1 to *Choi* in view of U.S. Pub. No. 2009/0257738 A1 to *Park*.

As to **claims 1, 12 and 19**, *Choi* discloses a data service system in an Intelligent Television (TV), comprising:

an internal content provider module configured to provide content to video hardware or display of the Intelligent TV or to a content provider module or application of the Intelligent TV (*Choi* Fig. 1-3, ¶0033-0034, 0037-0038 & 0041, a plurality of internal service provider, e.g. smart service and DTV service, to provide content for display on the smart TV); and

wherein the internal content provider module is loaded on the Intelligent TV responsive to a user action or a schedule event on the Intelligent TV (*Choi* Fig. 1-4, ¶0050, 0057, 0070, 0072 & 0078, loading applications on the smart TV in response to user input or based on the system on the smart TV).

Choi does not expressly disclose a subservice configured to provide the internal content provider module with requested data for a pre-defined data model, and wherein the internal content provider module organizes the received data from the subservice as the content according to a pre-defined format.

Park discloses a subservice configured to provide the internal content provider module with requested data for a pre-defined data model (*Park* Fig. 1, ¶0050-0054, middleware performs a function for receiving requests of the applications and providing specific services provided by the middleware defined by a broadcast standard e.g. API defined by JAVA, JavaTV API, DVR API), and wherein the internal content provider module organizes the received data from the subservice as the content according to a pre-defined format (*Park* Fig. 1, ¶0050-0054 & 0064-0069, applications using the API defined by the middleware can adjust the start and the end of other applications).

It would have been obvious to a person of ordinary skilled in the art before the effective filing date of the claimed invention to modify *Choi* by a subservice configured to provide the internal content provider module with requested data for a pre-defined data model, and wherein the internal content provider module organizes the received data from the subservice as the content according to a pre-defined format as disclosed by *Park*. The suggestion/motivation would have been in order to manage a plurality of data broadcasting-associated applications adjusting resources when a collision between various applications occurs, preventing errors.

As to **claim 2**, *Choi* discloses wherein the pre-defined format comprises one of a VOD data model, an EPG data model, and a media data model (*Choi* Fig. 1-3, ¶0033, 0045, 0050, 0056 and *Park* Fig. 1, ¶0050-0054 & 0064-0069).

As to **claim 3**, *Choi* discloses wherein the subservice comprises one of a VOD subservice, an EPG subservice, and a media subservice (*Choi* Fig. 1-3, ¶0033, 0045, 0050, 0056 and *Park* Fig. 1, ¶0050-0054 & 0064-0069).

As to **claims 4, 13 and 20**, *Choi* discloses wherein the internal content provider module comprises an EPG data provider, a media data provider, a media browser, a media scanner, or a thumbnail engine (*Choi* Fig. 1-3, ¶0033, 0045, 0050, 0056 and *Park* Fig. 1, ¶0050-0054 & 0064-0069).

12. **Claims 5 and 14** are rejected under 35 U.S.C. 103 as being unpatentable over U.S. Pub. No. 2013/0031592 A1 to *Choi* in view of U.S. Pub. No. 2009/0257738 A1 to *Park* and in further view of U.S. Pub. No. 2011/0173657 A1 to *Thomas*.

As to **claims 5 and 14**, *Choi* and *Park* disclose wherein the EPG data provider is configured to serve one or more applications of the Intelligent TV with EPG information (*Choi* Fig. 1-3, ¶0033, 0045, 0050, 0056 and *Park* Fig. 1, ¶0050-0054 & 0064-0069).

Choi and *Park* do not expressly disclose EPG information in a read-only format.

Thomas discloses EPG information in a read-only format (*Thomas* ¶0053).

It would have been obvious to a person of ordinary skilled in the art before the effective filing date of the claimed invention to modify *Choi* and *Park* by EPG information in a read-only format as disclosed by *Thomas*. The suggestion/motivation would have been in order to manage a plurality of data broadcasting-associated applications adjusting resources when a collision between various applications occurs, preventing errors.

13. **Claims 6, 7 and 15** are rejected under 35 U.S.C. 103 as being unpatentable over U.S. Pub. No. 2013/0031592 A1 to *Choi* in view of U.S. Pub. No. 2009/0257738 A1 to *Park* and in further view of U.S. Pub. No 2002/0152474 A1 to *Dudkiewicz*.

As to **claims 6 and 15**, *Choi* and *Park* do not expressly disclose wherein the media data provider is configured to provide media metadata personalized for a user.

Dudkiewicz discloses wherein the media data provider is configured to provide media metadata personalized for a user (*Dudkiewicz* Fig. 10, ¶¶0075-0076, 0079).

It would have been obvious to a person of ordinary skilled in the art before the effective filing date of the claimed invention to modify *Choi* and *Park* by wherein the media data provider is configured to provide media metadata personalized for a user as disclosed by *Dudkiewicz*. The suggestion/motivation would have been in order to recommend programs specifically tailored for a particular user/viewer enhancing the user's viewing experience.

As to **claim 7**, *Choi* discloses wherein the media data provider is further configured to store the media metadata in a sqlite database (*Choi* Fig. 3, SQLite).

14. **Claims 8, 9, 11, 16 and 18** are rejected under 35 U.S.C. 103 as being unpatentable over U.S. Pub. No. 2013/0031592 A1 to *Choi* in view of U.S. Pub. No. 2009/0257738 A1 to *Park* and in further view of U.S. Pub. No. 2012/0297429 A1 to *Reed*.

As to **claims 8 and 16**, *Choi* and *Park* do not expressly disclose wherein the media browser is configured to provide a real-time view of media sources of the Intelligent TV and maintain a list of connected media sources of the Intelligent TV.

Reed discloses wherein the media browser is configured to provide a real-time view of media sources of the Intelligent TV and maintain a list of connected media sources of the Intelligent TV (*Reed* Fig. 1A, 1B & 2, ¶0015, 0034, 0042, web browser application providing real time sources of the media device e.g. television and content list of content sources displayed on the television).

It would have been obvious to a person of ordinary skilled in the art before the effective filing date of the claimed invention to modify *Choi* and *Park* by wherein the media browser is configured to provide a real-time view of media sources of the Intelligent TV and maintain a list of connected media sources of the Intelligent TV as disclosed by *Reed*. The suggestion/motivation would have

been in order to normalize, index, display and enable interaction with a plurality of content including live content enhancing the user's experience.

As to **claim 9**, *Reed* discloses wherein the media browser maintains a non-permanent storage (*Reed* Fig. 1A, 1B & 2, ¶0086-0087).

As to **claims 11 and 18**, *Choi* and *Park* do not expressly disclose wherein the thumbnail engine is configured to provide thumbnails for media, applications, or other contents.

Reed discloses wherein the thumbnail engine is configured to provide thumbnails for media, applications, or other contents (*Reed* Fig. 1A, 1B & 2, ¶0030, 0048, web browser application providing real time sources of the media device e.g. television and content list of content sources displayed on the television).

It would have been obvious to a person of ordinary skilled in the art before the effective filing date of the claimed invention to modify *Choi* and *Park* by wherein the thumbnail engine is configured to provide thumbnails for media, applications, or other contents as disclosed by *Reed*. The suggestion/motivation would have been in order to provide a visual indicator that allows the user/viewer to easily identify content of interest.

15. **Claim 10** is rejected under 35 U.S.C. 103 as being unpatentable over U.S. Pub. No. 2013/0031592 A1 to *Choi* in view of U.S. Pub. No. 2009/0257738 A1 to *Park* in

further view of U.S. Pub. No. 2012/0297429 A1 to *Reed* and in further view of U.S. Pub. No. 2002/0056098 A1 to *White*.

As to **claim 10**, *Choi*, *Park* and *Reed* do not expressly disclose wherein the media scanner is configured to populate a media table using data retrieved by the media browser and rescan for new media periodically.

White discloses wherein the media scanner is configured to populate a media table using data retrieved by the media browser and rescan for new media periodically (*White* Fig. 4-8 ¶0052).

It would have been obvious to a person of ordinary skilled in the art before the effective filing date of the claimed invention to modify *Choi*, *Park* and *Reed* by wherein the media scanner is configured to populate a media table using data retrieved by the media browser and rescan for new media periodically as disclosed by *White*. The suggestion/motivation would have been in order to allow a user to see updated content for the other channels which is more recent than when the channel was originally de-selected, without disrupting television reception on the active channel.

16. **Claim 17** is rejected under 35 U.S.C. 103 as being unpatentable over U.S. Pub. No. 2013/0031592 A1 to *Choi* in view of U.S. Pub. No. 2009/0257738 A1 to *Park* and in further view of U.S. Pub. No. 2002/0056098 A1 to *White*.

As to **claim 17**, *Choi* and *Park* do not expressly disclose wherein the media scanner is configured to populate a media table using data retrieved by the media browser and rescan for new media periodically.

White discloses wherein the media scanner is configured to populate a media table using data retrieved by the media browser and rescan for new media periodically (*White* Fig. 4-8 ¶0052).

It would have been obvious to a person of ordinary skilled in the art before the effective filing date of the claimed invention to modify *Choi* and *Park* by wherein the media scanner is configured to populate a media table using data retrieved by the media browser and rescan for new media periodically as disclosed by *White*. The suggestion/motivation would have been in order to allow a user to see updated content for the other channels which is more recent than when the channel was originally de-selected, without disrupting television reception on the active channel.

Conclusion

17. Claims 1-20 have been rejected.

Correspondence Information

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to KYU CHAE whose telephone number is (571)270-5696. The examiner can normally be reached on Mon-Fri, 8 a.m. - 5 p.m.; EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, NASSER MOAZZAMI can be reached on (571)272-4195. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/KYU CHAE/
Primary Examiner, Art Unit 2426

Notice of References Cited	Application/Control No. 15/801,601	Applicant(s)/Patent Under Reexamination SHOYKHER ET AL.	
	Examiner KYU CHAE	Art Unit 2426	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-2002/0056098 A1	05-2002	WHITE, CHRISTOPHER M.	H04N5/44	725/39
*	B	US-2002/0152474 A1	10-2002	Dudkiewicz, Gil Gavriel	G06F17/30817	725/136
*	C	US-2009/0257738 A1	10-2009	Park; Cheon Hyeon	G11B27/034	386/241
*	D	US-2011/0173657 A1	07-2011	Thomas; William L.	H04N5/4401	725/39
*	E	US-2012/0297429 A1	11-2012	Reed; William Edward	G06F17/30846	725/86
*	F	US-2013/0031592 A1	01-2013	CHOI; Su Kyoung	H04N21/4433	725/110
	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	CPC 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.



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BIB DATA SHEET

CONFIRMATION NO. 1450

SERIAL NUMBER	FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
15/801,601	11/02/2017 RULE	725	2426	6583-490-CON

APPLICANTS
 FLEXTRONICS AP, LLC, San Jose, CA;

INVENTORS
 Mikhail Shoykher, Thornhill, CANADA;
 John S. Visosky, Gormley, CANADA;
 Sanjiv Sirpal, Oakville, CANADA;

**** CONTINUING DATA *******
 This application is a CON of 14/821,365 08/07/2015 PAT 9819986
 which is a CON of 13/969,205 08/16/2013 ABN
 which claims benefit of 61/684,672 08/17/2012
 and claims benefit of 61/702,650 09/18/2012
 and claims benefit of 61/697,710 09/06/2012
 and claims benefit of 61/700,182 09/12/2012
 and claims benefit of 61/736,692 12/13/2012
 and claims benefit of 61/798,821 03/15/2013
 and claims benefit of 61/804,942 03/25/2013
 and claims benefit of 61/804,998 03/25/2013
 and claims benefit of 61/804,971 03/25/2013
 and claims benefit of 61/804,990 03/25/2013
 and claims benefit of 61/805,003 03/25/2013
 and claims benefit of 61/805,053 03/25/2013
 and claims benefit of 61/805,030 03/25/2013
 and claims benefit of 61/805,027 03/25/2013
 and claims benefit of 61/805,042 03/25/2013
 and claims benefit of 61/805,038 03/25/2013
 and said 14/821,365 08/07/2015
 is a CON of 13/969,190 08/16/2013 ABN
 which claims benefit of 61/684,672 08/17/2012
 and claims benefit of 61/702,650 09/18/2012
 and claims benefit of 61/697,710 09/06/2012
 and claims benefit of 61/700,182 09/12/2012
 and claims benefit of 61/736,692 12/13/2012
 and claims benefit of 61/798,821 03/15/2013
 and claims benefit of 61/804,942 03/25/2013
 and claims benefit of 61/804,998 03/25/2013
 and claims benefit of 61/804,971 03/25/2013
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 and claims benefit of 61/805,003 03/25/2013
 and claims benefit of 61/805,053 03/25/2013
 and claims benefit of 61/805,030 03/25/2013
 and claims benefit of 61/805,027 03/25/2013
 and claims benefit of 61/805,042 03/25/2013
 and claims benefit of 61/805,038 03/25/2013
 and said 14/821,365 08/07/2015

EAST Search History**EAST Search History (Prior Art)**

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	141	(tv or television or DTV or IPTV) AND (EPG or ((program\$4 or channel or service) with (guide or list\$4)) or IPG or ESG) AND (browser) AND (scanner) AND (thumbnail) AND ((real\$1time) or live) AND "725".clas.	US-PGPUB; USPAT; EPO; JPO	ADJ	ON	2018/02/01 10:56
L2	284	(tv or television or DTV or IPTV) AND (EPG or ((program\$4 or channel or service) with (guide or list\$4)) or IPG or ESG) AND (browser) AND (scan\$6) AND (thumbnail) AND ((real\$1time) or live) AND "725".clas.	US-PGPUB; USPAT; EPO; JPO	ADJ	ON	2018/02/01 10:56
L3	102	(tv or television or DTV or IPTV) with application AND (EPG or ((program\$4 or channel or service) with (guide or list\$4)) or IPG or ESG) AND (browser) AND (scan\$4) AND "725".clas. AND (load\$4 with (request))	US-PGPUB; USPAT; EPO; JPO	ADJ	ON	2018/02/01 10:56
L4	140	(tv or television or DTV or IPTV) with application AND (EPG or ((program\$4 or channel or service) with (guide or list\$4)) or IPG or ESG) AND (browser) AND (scan\$4) AND "725".clas. AND (load\$4 with (request\$4))	US-PGPUB; USPAT; EPO; JPO	ADJ	ON	2018/02/01 10:56
L5	536	(tv or television or DTV or IPTV) with smart and (EPG or ((program\$4 or channel or service) with (guide or list\$4)) or IPG or ESG) AND (browser) AND (applications or app) and java\$8 and "725".clas.	US-PGPUB; USPAT; EPO; JPO	ADJ	ON	2018/02/01 10:56
L6	298	(tv or television or DTV or IPTV) with internal with (provider or source) and (EPG or ((program\$4 or channel or service) with (guide or list\$4)) or IPG or ESG) AND (browser) AND (application or app)	US-PGPUB; USPAT; EPO; JPO	ADJ	ON	2018/02/01 10:56
L7	59	(tv or television or DTV or IPTV) and scan\$4 with periodically and browser and "725".clas.	US-PGPUB; USPAT; EPO; JPO	ADJ	ON	2018/02/01 10:56
L8	416	(tv or television or DTV or IPTV) and (scan\$4) and (creat\$5 or generat\$4 or populat\$4) with table and browser and "725".clas.	US-PGPUB; USPAT; EPO; JPO	ADJ	ON	2018/02/01 10:56
L9	8	(tv or television or DTV or IPTV) and (scan\$4 with browser with table) and "725".clas.	US-PGPUB; USPAT; EPO; JPO	ADJ	ON	2018/02/01 10:56
L10	8501	(tv or television or DTV or IPTV) and (scan\$4) and "725".clas.	US-PGPUB; USPAT; EPO; JPO	ADJ	ON	2018/02/01 10:56

L11	106	(tv or television or DTV or IPTV) and (EPG or ((program\$4 or channel or service) with (guide or list\$4)) or IPG or ESG) AND (browser) AND (VOD or (on\$1demand)) AND (metadata with (personalized))	US-PGPUB; USPAT; EPO; JPO	ADJ	ON	2018/02/01 10:56
L12	75	(tv or television or DTV or IPTV) and (scan\$4 with browser) and "725".clas.	US-PGPUB; USPAT; EPO; JPO	ADJ	ON	2018/02/01 10:56
L13	100	(tv or television or DTV or IPTV) and (VOD or (on\$1demand)) AND (sqlite or sqllite)	US-PGPUB; USPAT; EPO; JPO	ADJ	ON	2018/02/01 10:57
L22	118	(H04N21/4131 or H04N21/43615 or H04N21/4782 or H04N21/4882).cpc. AND (tv or television or DTV or IPTV) and (EPG or ((program\$4 or channel or service) with (guide or list\$4)) or IPG or ESG) with (application or app or module or engine) AND (browser) with (application or app or module or engine) AND (VOD or (on\$1demand)) with (application or app or module or engine) AND (scan\$4)	US-PGPUB; USPAT; EPO; JPO	ADJ	ON	2018/02/01 12:35

EAST Search History (Interference)

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Search Notes 	Application/Control No. 15801601	Applicant(s)/Patent Under Reexamination SHOYKHER ET AL.
	Examiner KYU CHAE	Art Unit 2426

CPC- SEARCHED		
Symbol	Date	Examiner
H04N21/4131, H04N21/43615, H04N21/4782, H04N21/4882	2/1/2018	KC

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

SEARCH NOTES		
Search Notes	Date	Examiner
Inventor Name Search (east/palm)	2/1/2018	KC
EAST Search	2/1/2018	KC
H04N21/4131, H04N21/43615, H04N21/4782, H04N21/4882 (keyword)	2/1/2018	KC

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner

	/KYU CHAE/ Primary Examiner.Art Unit 2426
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<i>Index of Claims</i> 	Application/Control No. 15801601	Applicant(s)/Patent Under Reexamination SHOYKHER ET AL.
	Examiner KYU CHAE	Art Unit 2426

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47										
CLAIM		DATE								
Final	Original	02/01/2018								
	1	✓								
	2	✓								
	3	✓								
	4	✓								
	5	✓								
	6	✓								
	7	✓								
	8	✓								
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	16	✓								
	17	✓								
	18	✓								
	19	✓								
	20	✓								

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875						Application or Docket Number 15/801,601	
APPLICATION AS FILED - PART I							
(Column 1)		(Column 2)		SMALL ENTITY		OTHER THAN SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE(\$)	FEE(\$)		RATE(\$)	FEE(\$)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	280
SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A			N/A	600
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	720
TOTAL CLAIMS (37 CFR 1.16(j))	20	minus 20 = *			OR	x 80 =	0.00
INDEPENDENT CLAIMS (37 CFR 1.16(h))	3	minus 3 = *			OR	x 420 =	0.00
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 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).						0.00
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							0.00
				TOTAL		TOTAL	1600
* If the difference in column 1 is less than zero, enter "0" in column 2.							
APPLICATION AS AMENDED - PART II							
(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY	
AMENDMENT A	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)	OTHER THAN SMALL ENTITY	
	Total (37 CFR 1.16(i))	*	Minus **	=	x =	OR	RATE(\$)
	Independent (37 CFR 1.16(h))	*	Minus ***	=	x =	OR	ADDITIONAL FEE(\$)
	Application Size Fee (37 CFR 1.16(s))					OR	
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))					OR	
				TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE
(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY	
AMENDMENT B	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)	OTHER THAN SMALL ENTITY	
	Total (37 CFR 1.16(i))	*	Minus **	=	x =	OR	RATE(\$)
	Independent (37 CFR 1.16(h))	*	Minus ***	=	x =	OR	ADDITIONAL FEE(\$)
	Application Size Fee (37 CFR 1.16(s))					OR	
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))					OR	
				TOTAL ADD'L FEE		OR	TOTAL ADD'L 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 found in the appropriate box in column 1.							



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APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	TOT CLAIMS	IND CLAIMS
15/801,601	11/02/2017		1600	6583-490-CON	20	3

CONFIRMATION NO. 1450

FILING RECEIPT



000000095808413

111285
Sheridan Ross P.C.
1560 Broadway
Suite 1200
Denver, CO 80202

Date Mailed: 11/24/2017

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

Inventor(s)

Mikhail Shoykher, Thornhill, CANADA;
John S. Visosky, Gormley, CANADA;
Sanjiv Sirpal, Oakville, CANADA;

Applicant(s)

FLEXTRONICS AP, LLC, San Jose, CA;

Power of Attorney: The patent practitioners associated with Customer Number 111285

Domestic Priority data as claimed by applicant

This application is a CON of 14/821,365 08/07/2015 PAT 9819986
which is a CON of 13/969,205 08/16/2013 ABN
which claims benefit of 61/684,672 08/17/2012
and claims benefit of 61/702,650 09/18/2012
and claims benefit of 61/697,710 09/06/2012
and claims benefit of 61/700,182 09/12/2012
and claims benefit of 61/736,692 12/13/2012
and claims benefit of 61/798,821 03/15/2013
and claims benefit of 61/804,942 03/25/2013
and claims benefit of 61/804,998 03/25/2013
and claims benefit of 61/804,971 03/25/2013
and claims benefit of 61/804,990 03/25/2013
and claims benefit of 61/805,003 03/25/2013
and claims benefit of 61/805,053 03/25/2013
and claims benefit of 61/805,030 03/25/2013
and claims benefit of 61/805,027 03/25/2013
and claims benefit of 61/805,042 03/25/2013

page 1 of 6

and claims benefit of 61/805,038 03/25/2013
and said 14/821,365 08/07/2015
is a CON of 13/969,190 08/16/2013 ABN
which claims benefit of 61/684,672 08/17/2012
and claims benefit of 61/702,650 09/18/2012
and claims benefit of 61/697,710 09/06/2012
and claims benefit of 61/700,182 09/12/2012
and claims benefit of 61/736,692 12/13/2012
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and claims benefit of 61/805,030 03/25/2013
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and claims benefit of 61/805,042 03/25/2013
and claims benefit of 61/805,038 03/25/2013
and said 14/821,365 08/07/2015
is a CON of 14/407,609 12/12/2014 ABN
which is a 371 of PCT/US2013/036804 04/16/2013
which claims benefit of 61/684,672 08/17/2012
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page 3 of 6

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and claims benefit of 61/804,990 03/25/2013
and claims benefit of 61/804,942 03/25/2013
and claims benefit of 61/805,027 03/25/2013

Foreign Applications for which priority is claimed (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see <http://www.uspto.gov> for more information.) - None.

Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.

Permission to Access Application via Priority Document Exchange: Yes

Permission to Access Search Results: Yes

Applicant may provide or rescind an authorization for access using Form PTO/SB/39 or Form PTO/SB/69 as appropriate.

If Required, Foreign Filing License Granted: 11/21/2017

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 15/801,601**

Projected Publication Date: 03/01/2018

Non-Publication Request: No

Early Publication Request: No

Title

DATA SERVICE

Preliminary Class

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

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page 4 of 6

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Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

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Title 37, Code of Federal Regulations, 5.11 & 5.15

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NOTE: This form is to be submitted with the Power of Attorney by Applicant form (PTO/AIA/82B) to identify the application to which the Power of Attorney is directed, in accordance with 37 CFR 1.5, unless the application number and filing date are identified in the Power of Attorney by Applicant form. If neither form PTO/AIA/82A nor form PTO/AIA/82B identifies the application to which the Power of Attorney is directed, the Power of Attorney will not be recognized in the application.

Application Number	
Filing Date	November 2, 2017
First Named Inventor	Mikhail Shoykher
Title	Data Service
Art Unit	
Examiner Name	
Attorney Docket Number	6583-490-CON

SIGNATURE of Applicant or Patent Practitioner

Signature	/Tadd F. Wilson/	Date (Optional)	2017-11-02
Name	Tadd F. Wilson	Registration Number	54544
Title (if Applicant is a juristic entity)			
Applicant Name (if Applicant is a juristic entity)			
NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. If more than one applicant, use multiple forms.			
☐ *Total of _____ forms are submitted.			

This collection of information is required by 37 CFR 1.131, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 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: 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.

POWER OF ATTORNEY BY APPLICANT

I hereby revoke all previous powers of attorney given in the application identified in either the attached transmittal letter or the boxes below.

Application Number	Filing Date

(Note: The boxes above may be left blank if information is provided on form PTO/AIA/82A.)

☒ I hereby appoint the Patent Practitioner(s) associated with the following Customer Number as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above:

111285

OR

☐ I hereby appoint Practitioner(s) named in the attached list (form PTO/AIA/82C) as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the patent application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above. (Note: Complete form PTO/AIA/82C.)

Please recognize or change the correspondence address for the application identified in the attached transmittal letter or the boxes above to:

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City		State		Zip	
Country					
Telephone		Email			

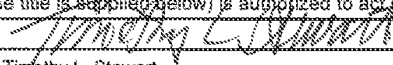
I am the Applicant (if the Applicant is a juristic entity, list the Applicant name in the box):

Flextronics AP, LLC

- ☐ Inventor or Joint Inventor (title not required below)
- ☐ Legal Representative of a Deceased or Legally Incapacitated Inventor (title not required below)
- ☒ Assignee or Person to Whom the Inventor is Under an Obligation to Assign (provide signer's title if applicant is a juristic entity)
- ☐ Person Who Otherwise Shows Sufficient Proprietary Interest (e.g., a petition under 37 CFR 1.46(b)(2) was granted in the application or is concurrently being filed with this document) (provide signer's title if applicant is a juristic entity)

SIGNATURE of Applicant for Patent

The undersigned (whose title is supplied below) is authorized to act on behalf of the applicant (e.g., where the applicant is a juristic entity).

Signature		Date (Optional)	
Name	Timothy L. Stewart		
Title	Vice President and Secretary		

NOTE: Signature - This form must be signed by the applicant in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. If more than one applicant, use multiple forms.

☐ Total of _____ forms are submitted.

This collection of information is required by 37 CFR 1.131, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 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: 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

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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.

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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 inspections 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.

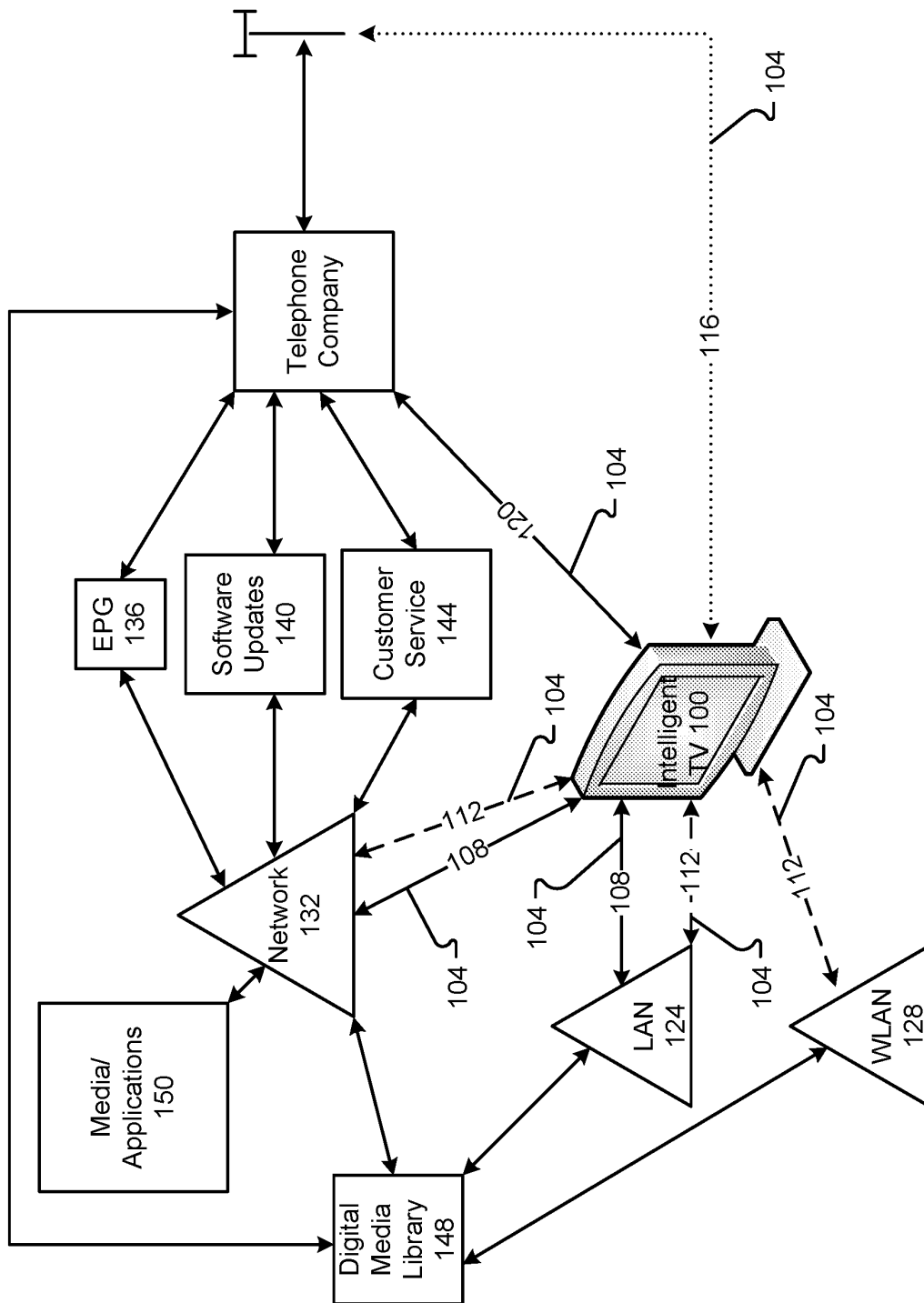


Fig. 1A

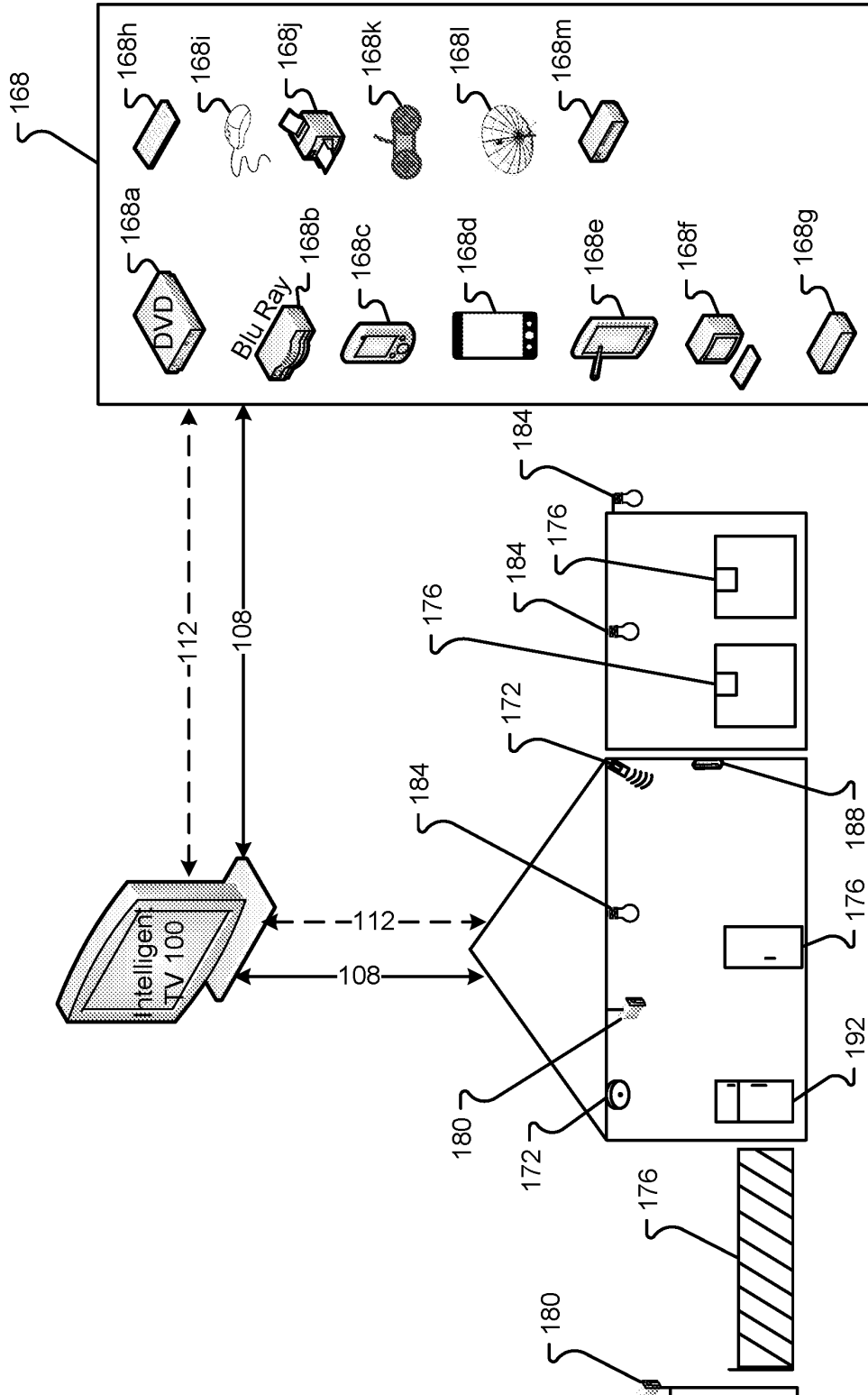


Fig. 1B

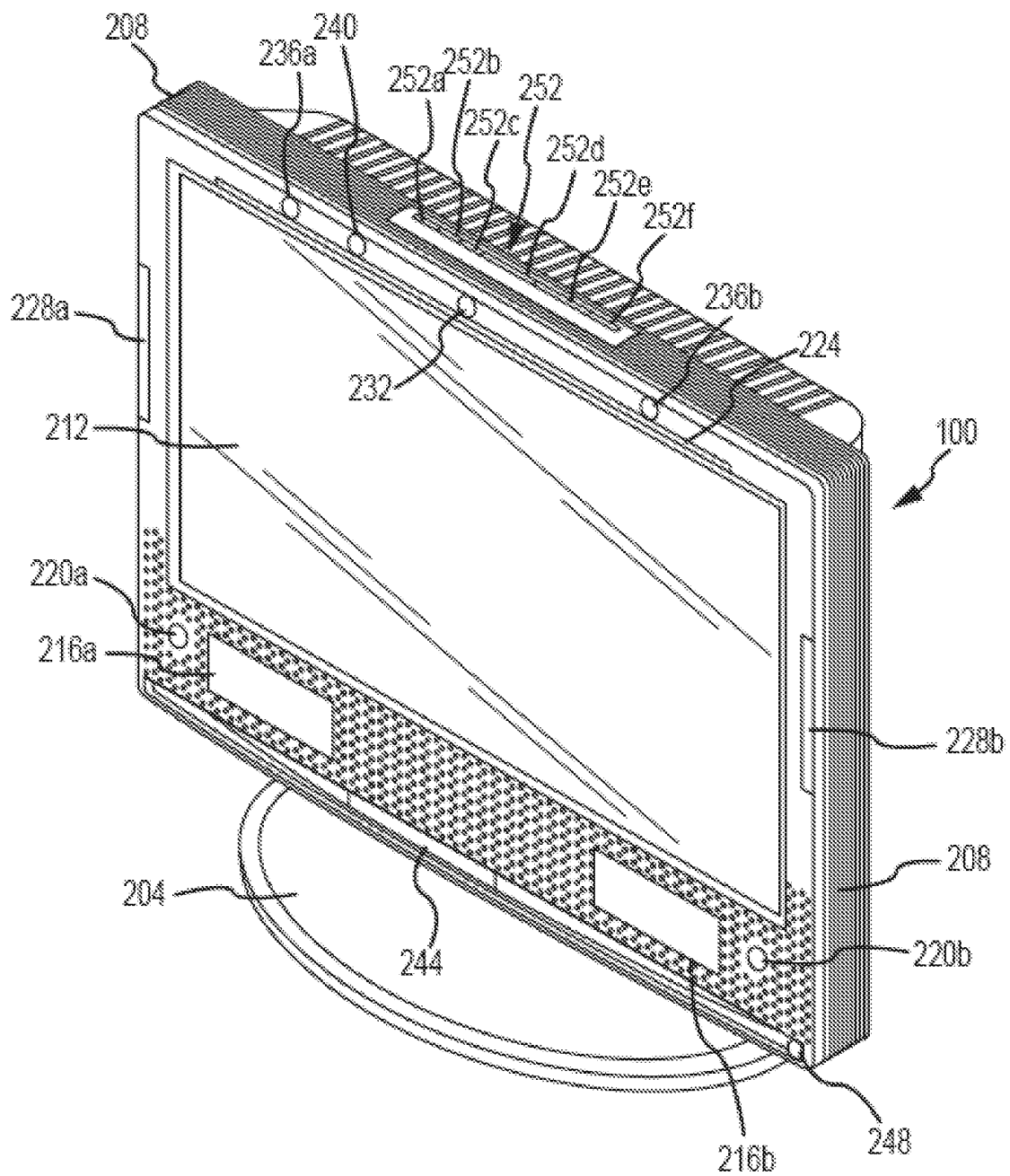


Fig. 2A

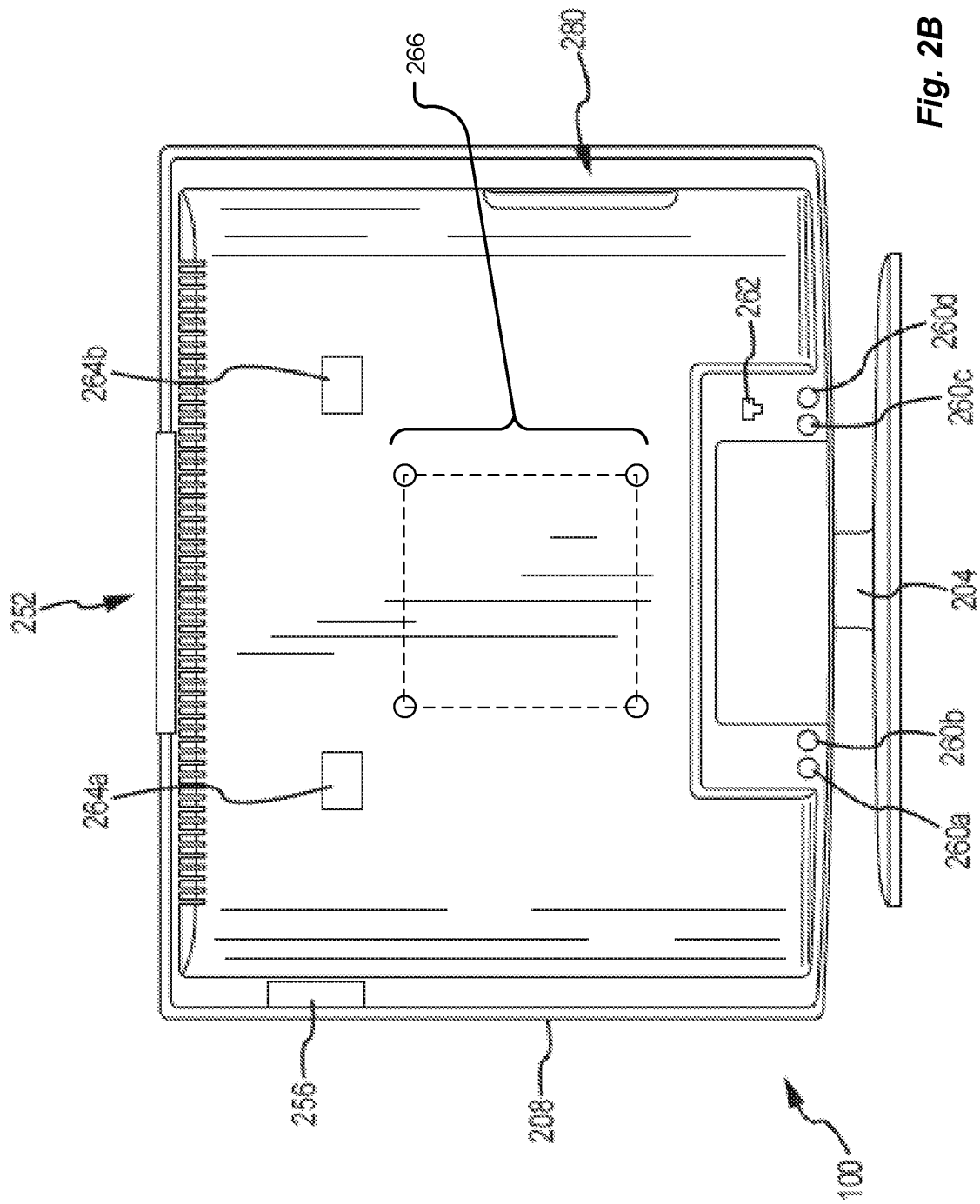


Fig. 2B

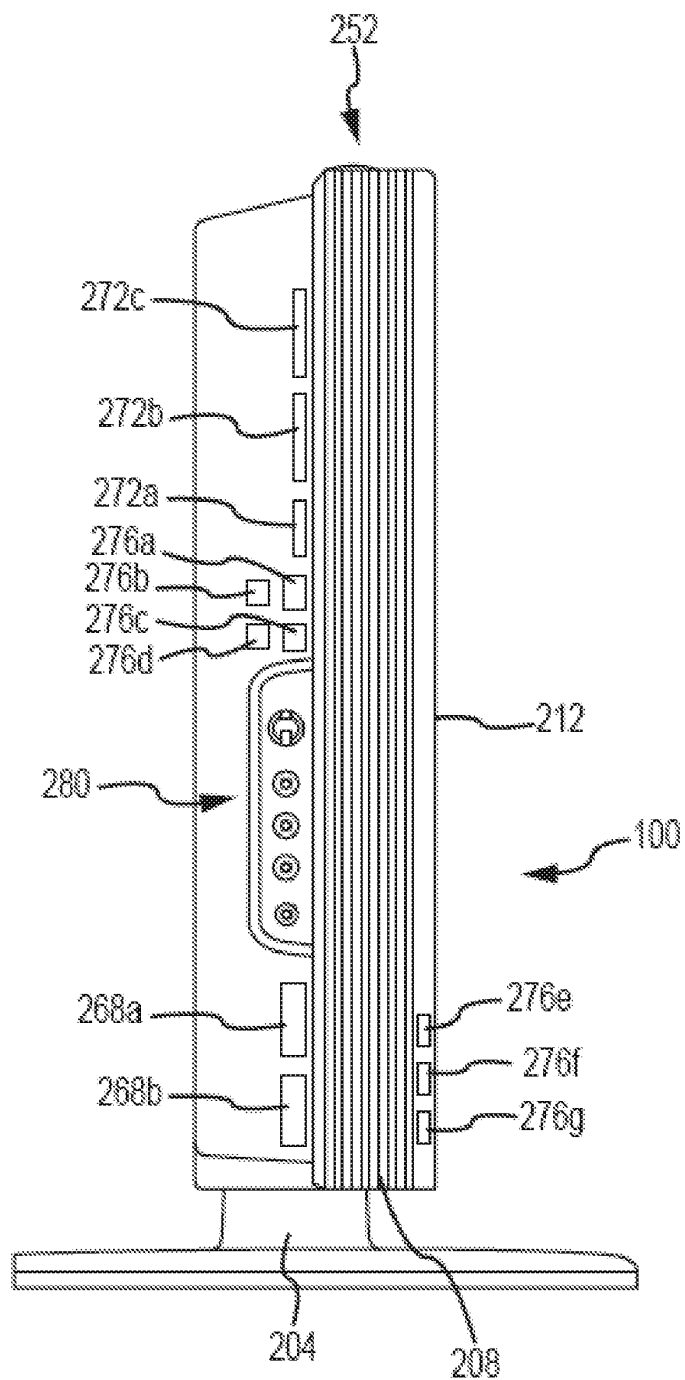


Fig. 2C

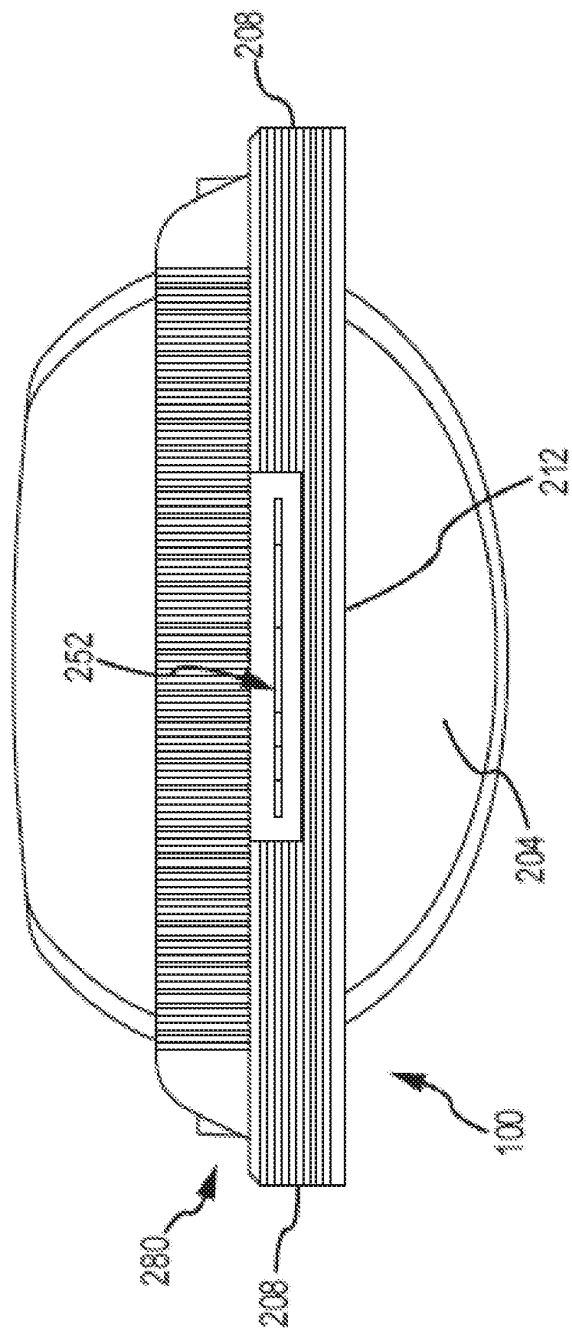


Fig. 2D

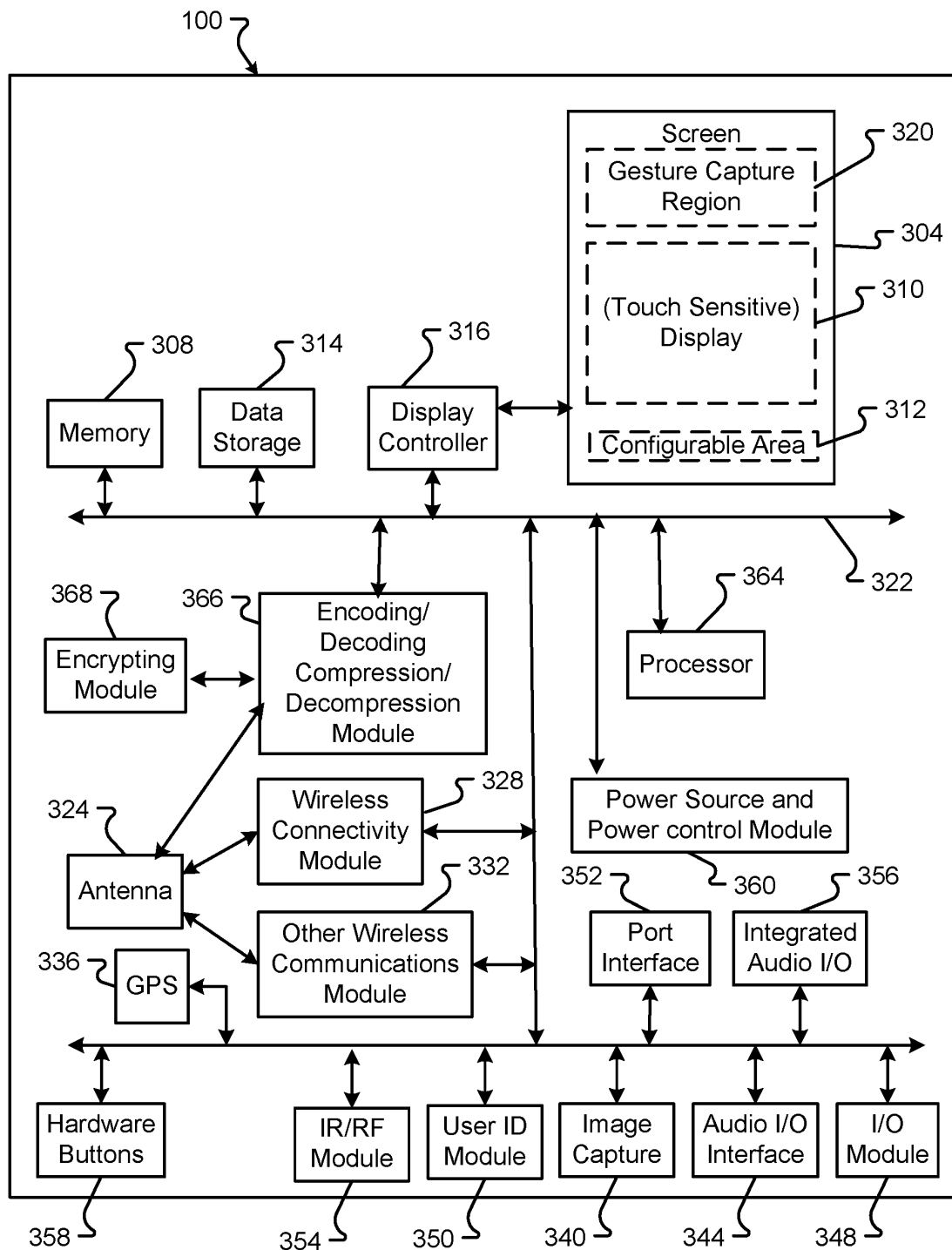


FIG. 3

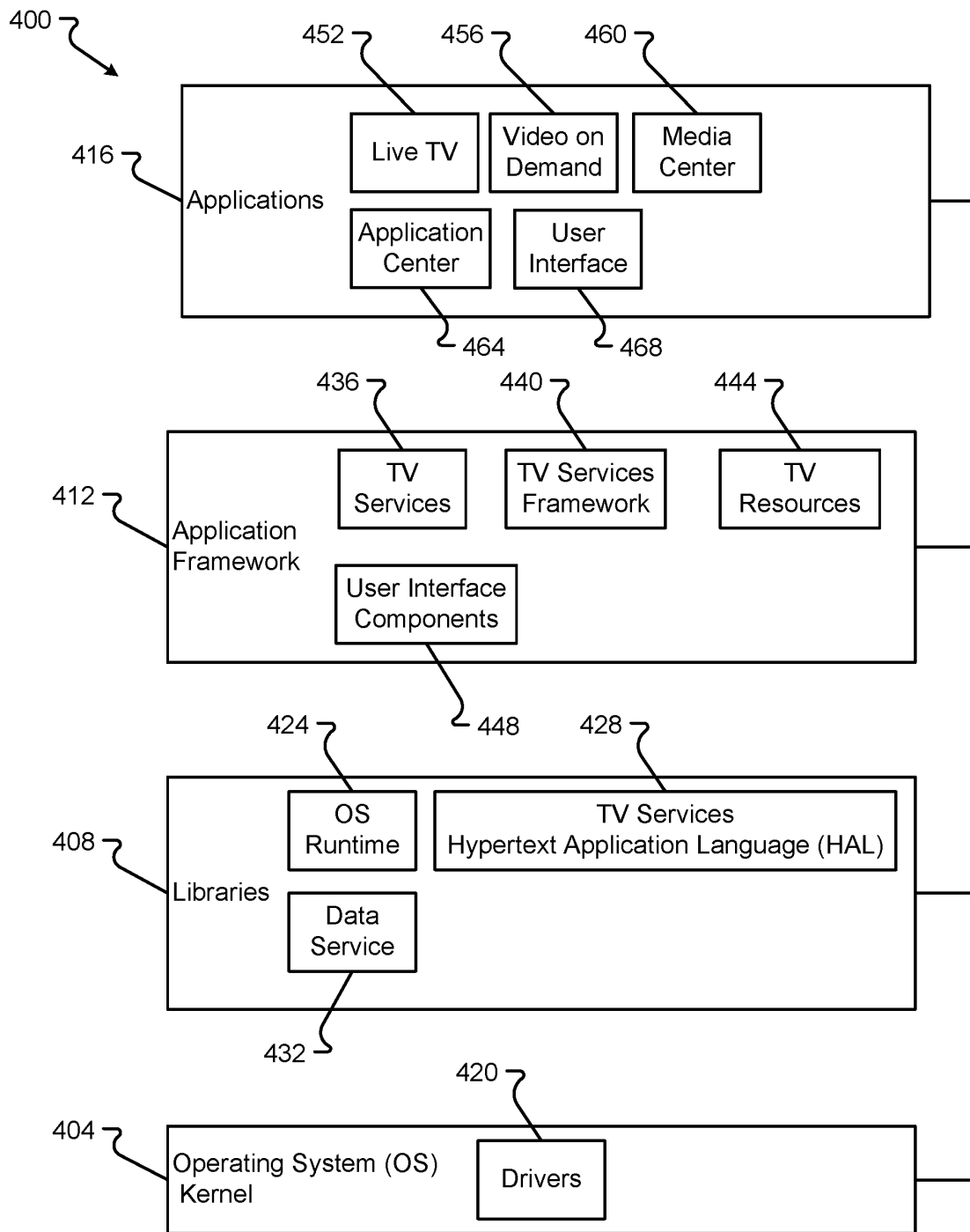


FIG. 4

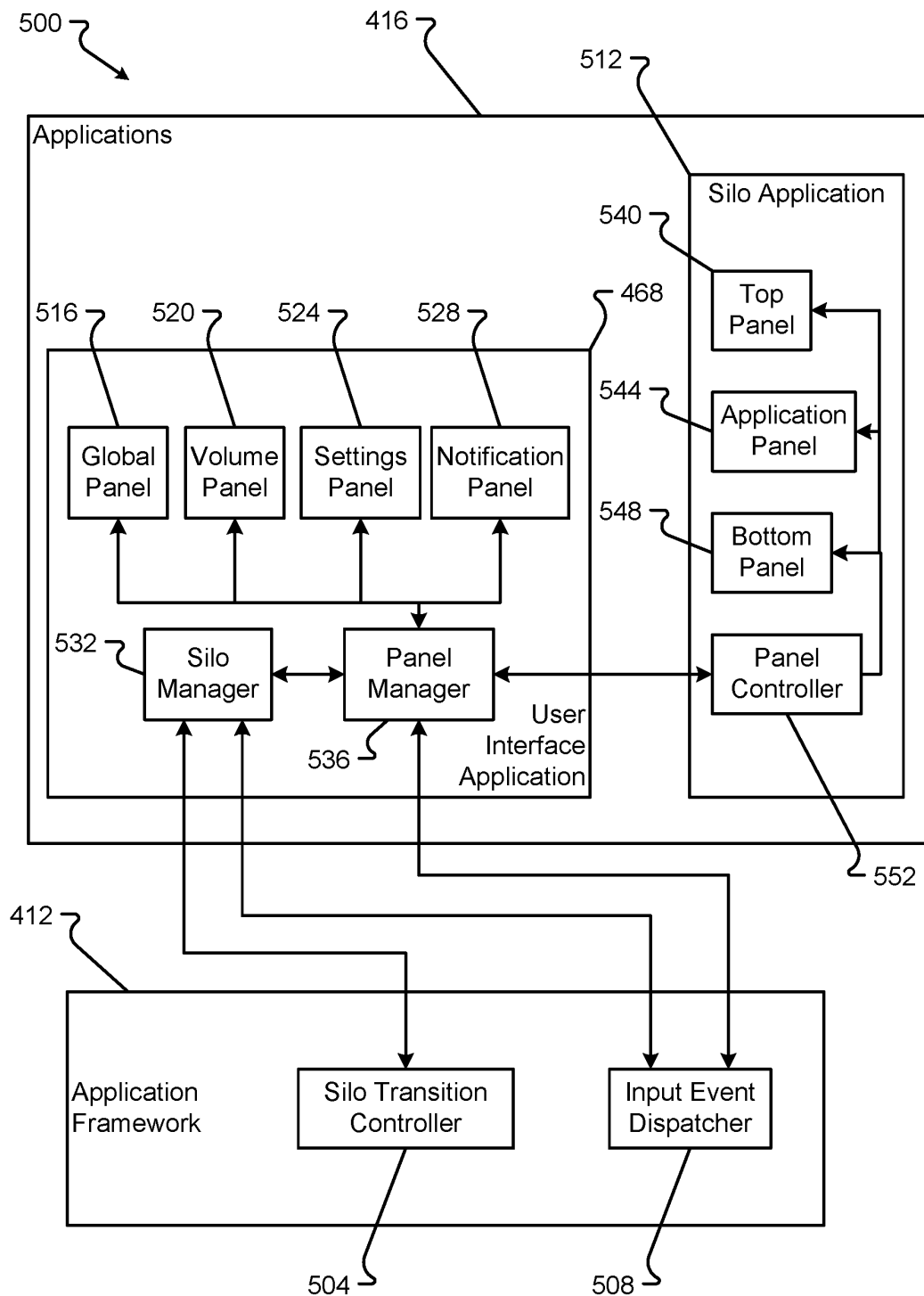


FIG. 5

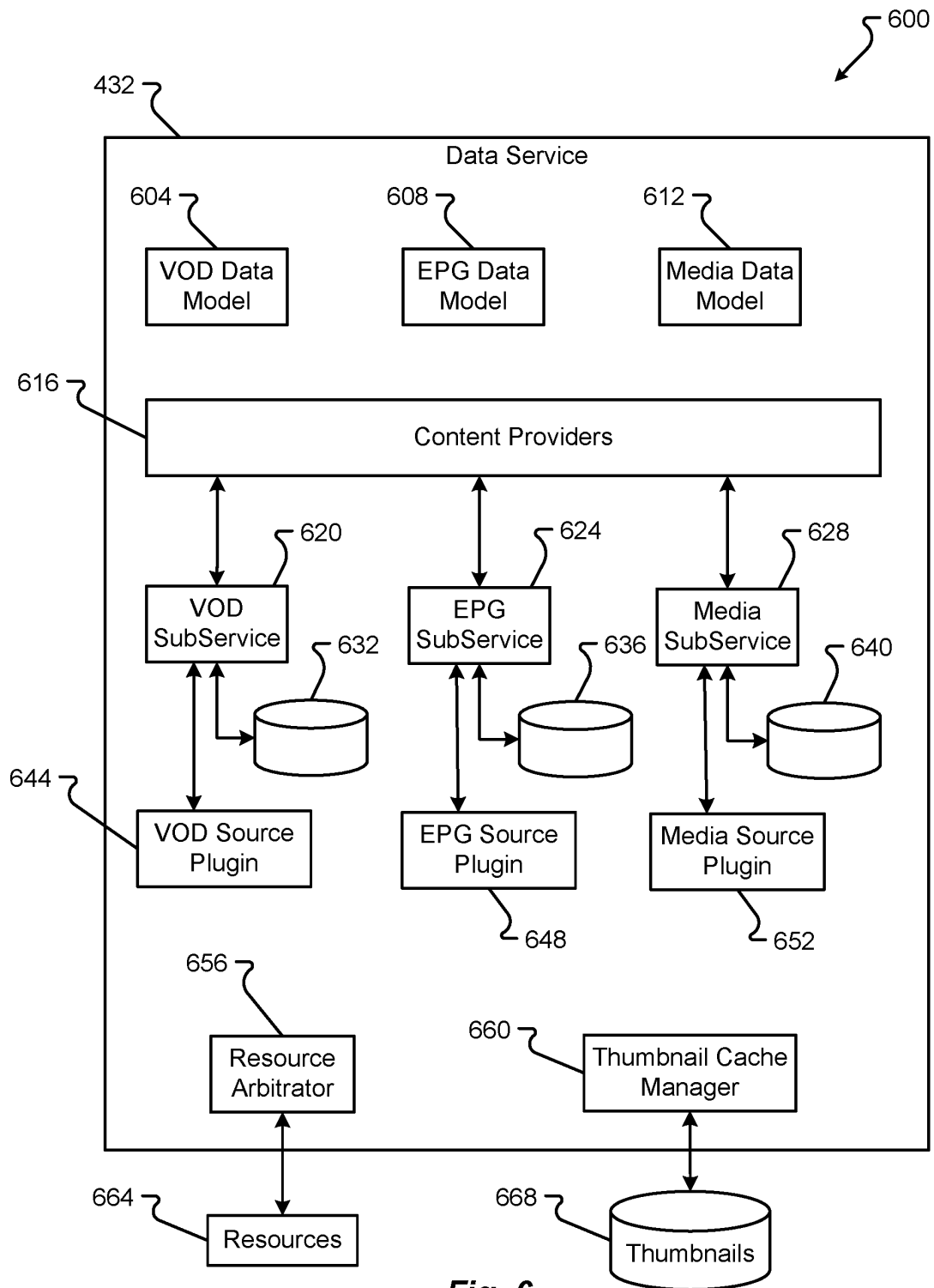


Fig. 6

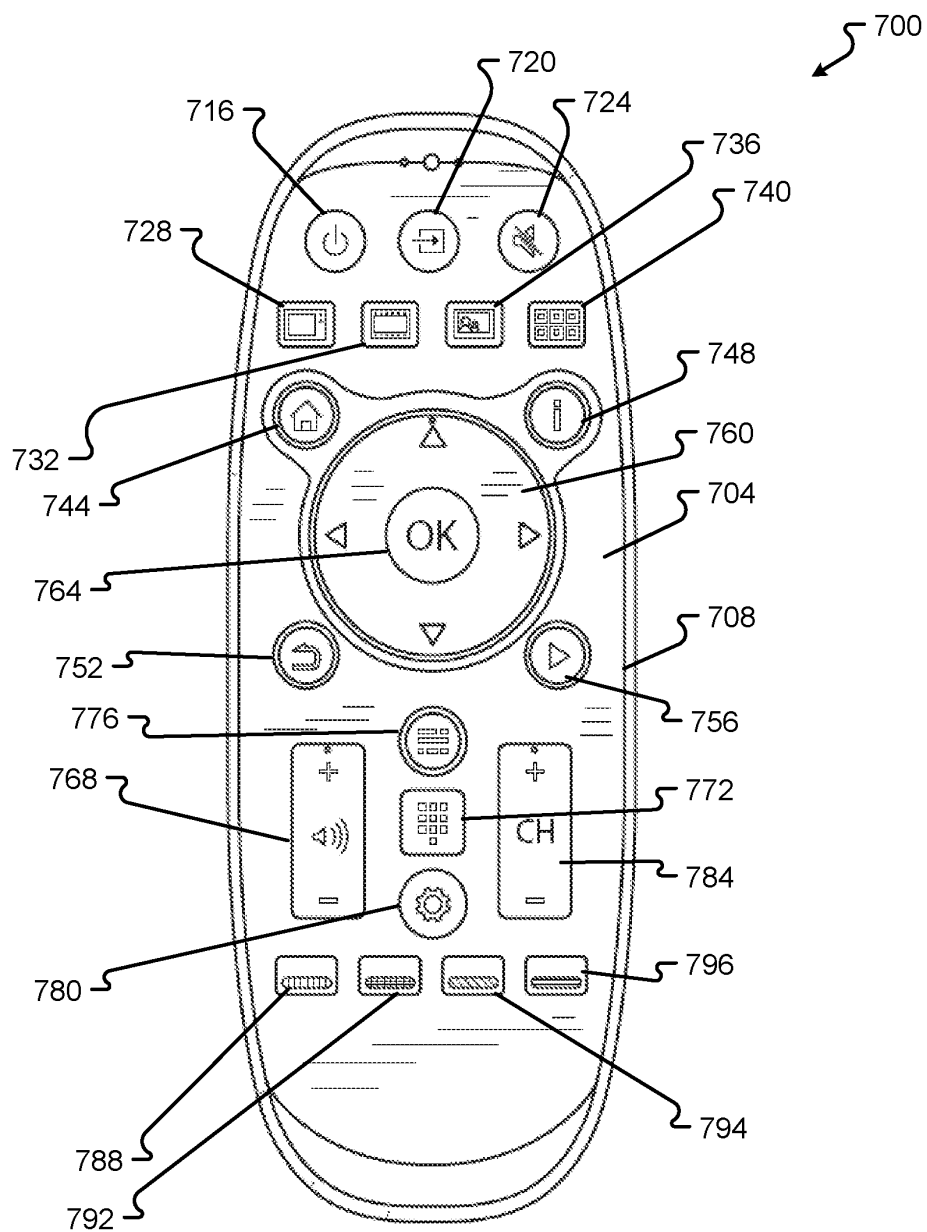


Fig. 7

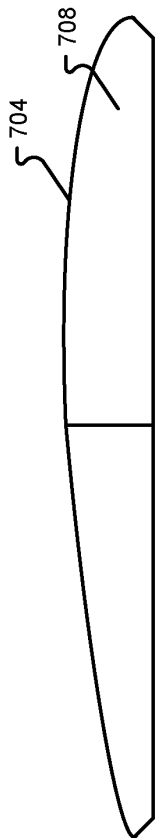


Fig. 8

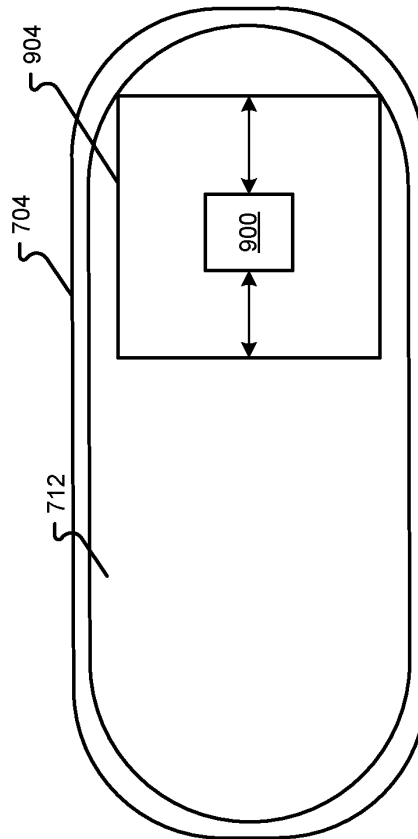


Fig. 9A

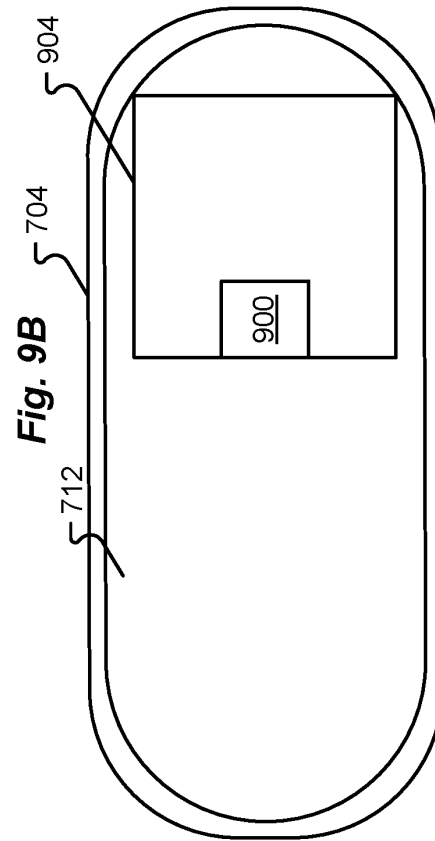
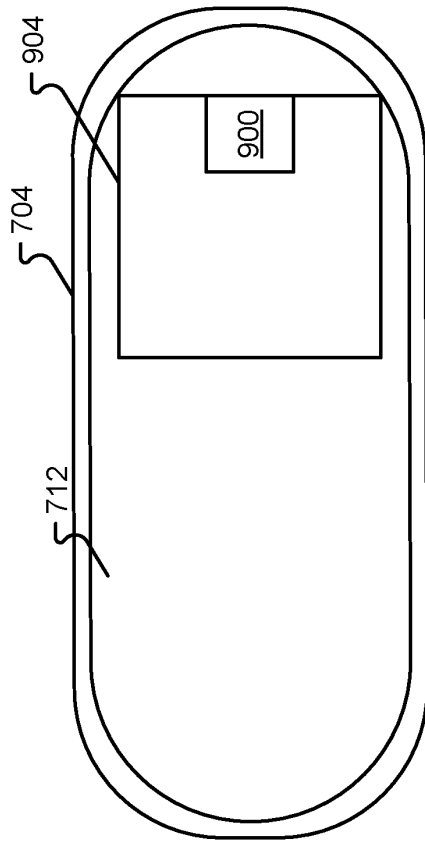


Fig. 9C

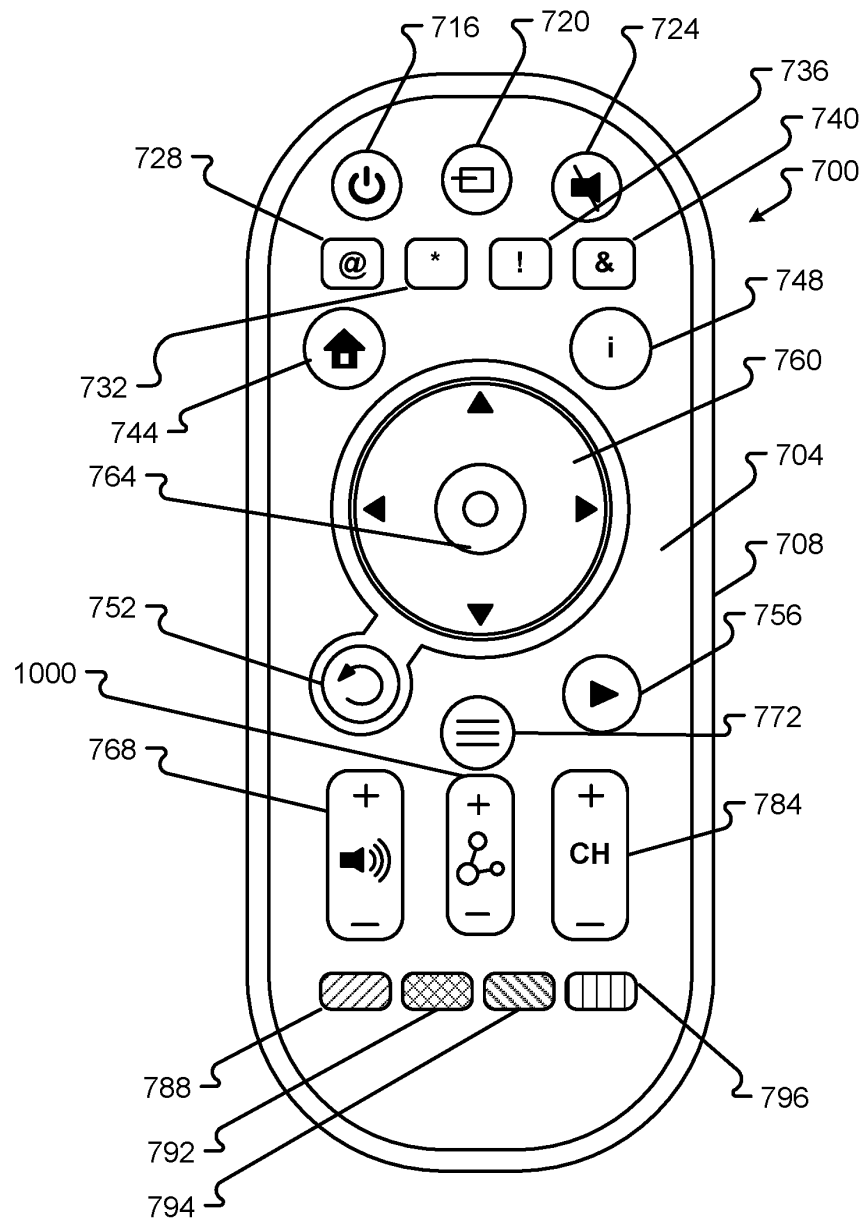


Fig. 10

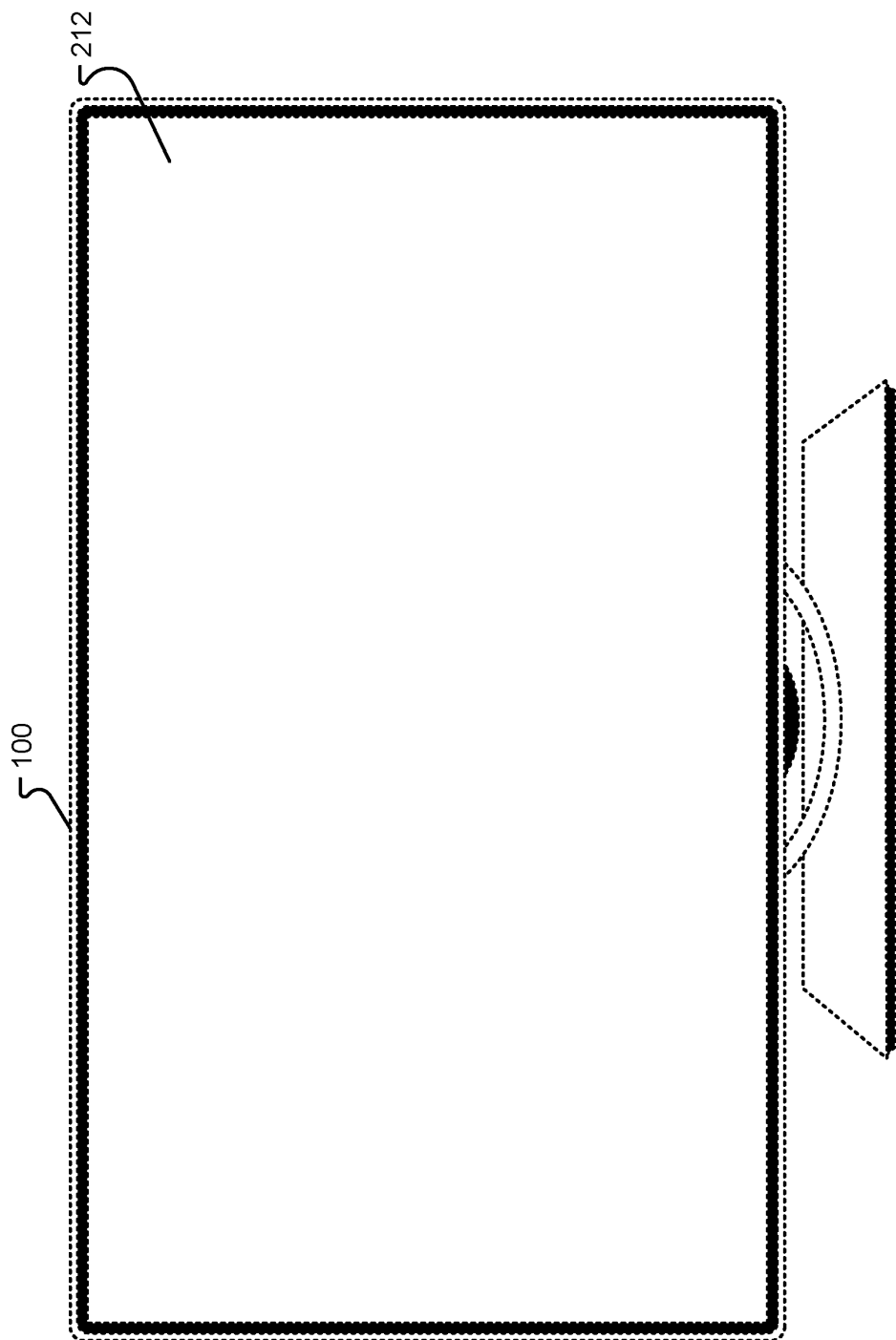


Fig. 11A

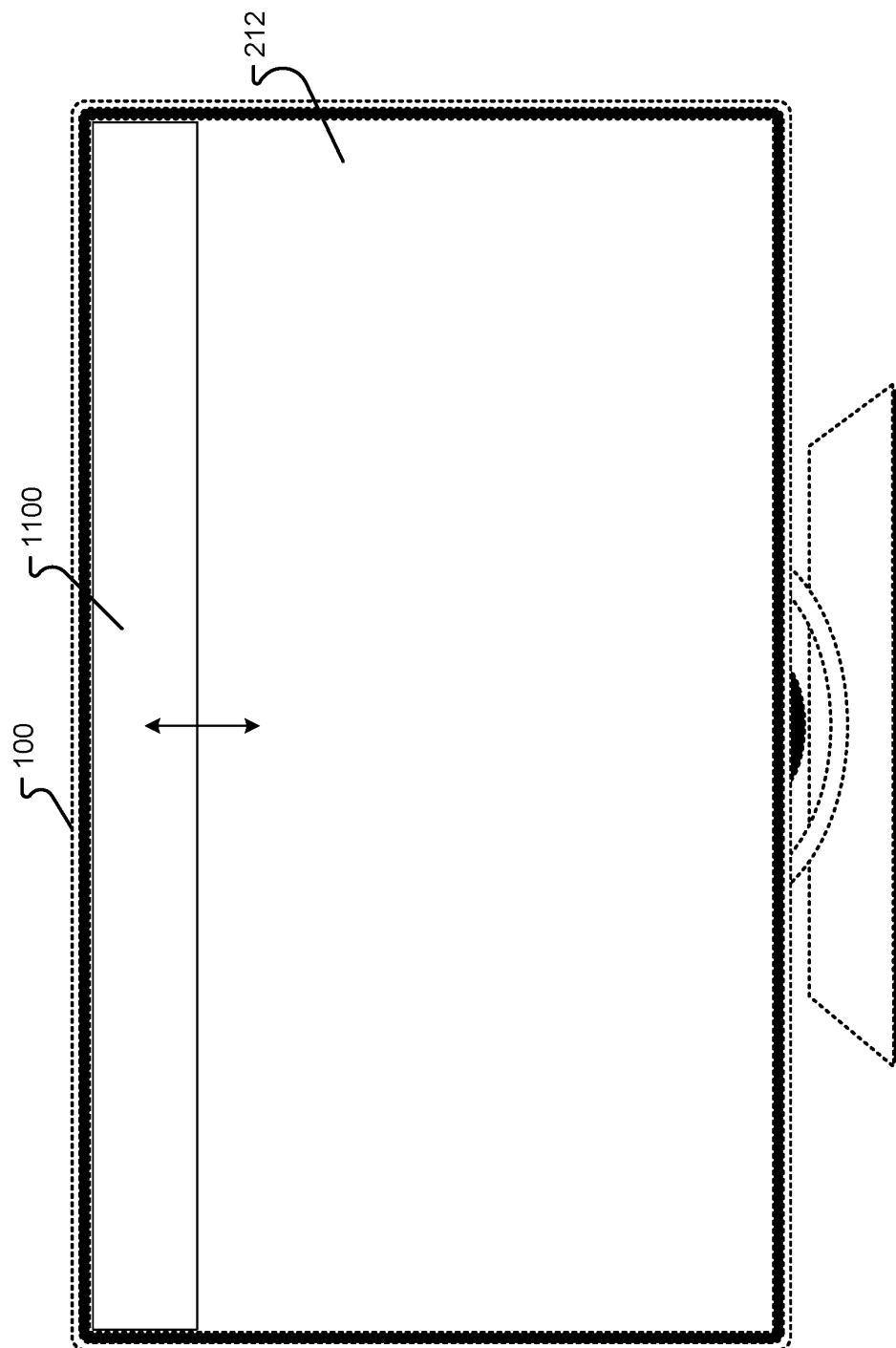


Fig. 11B

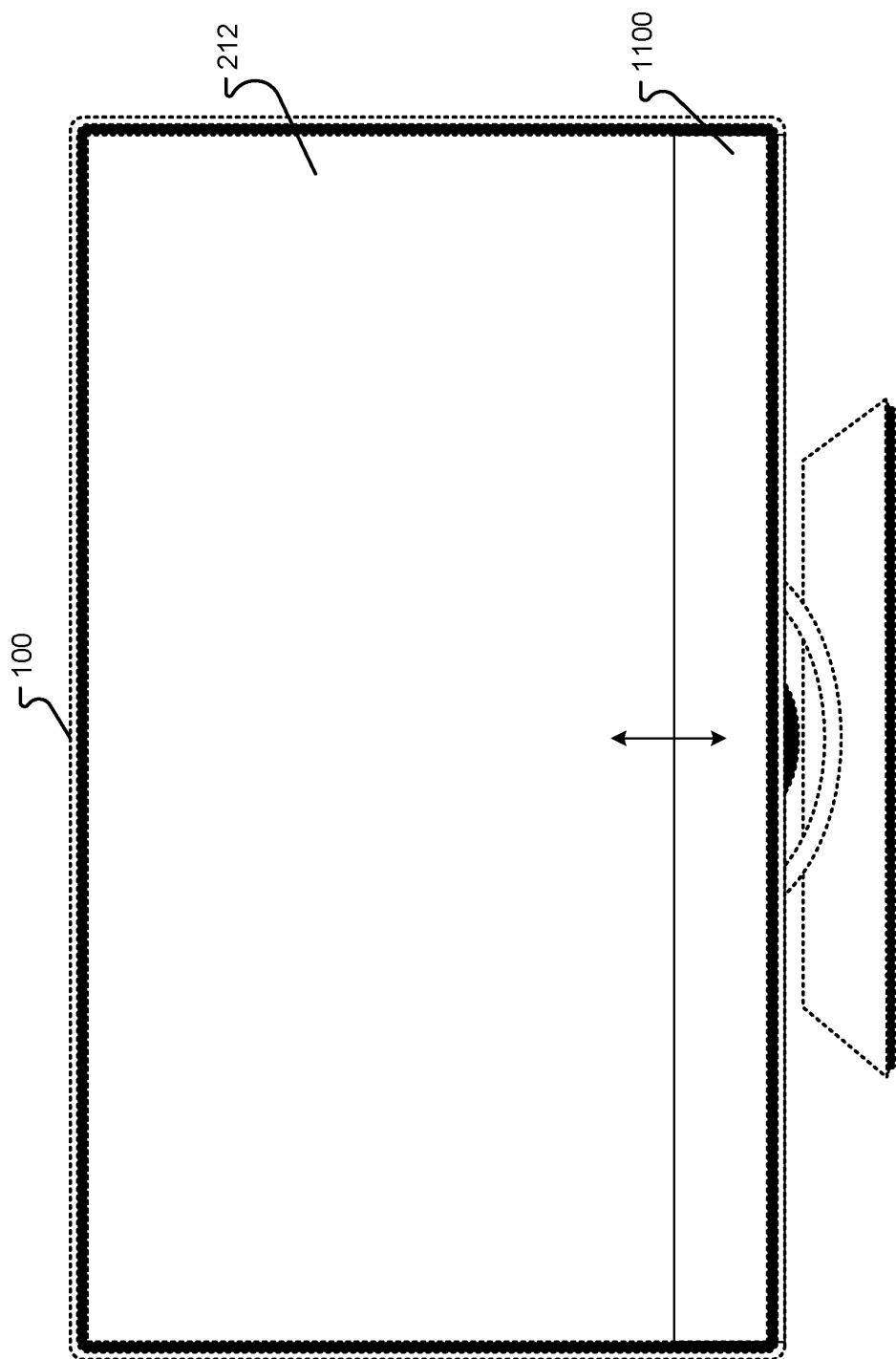


Fig. 11C

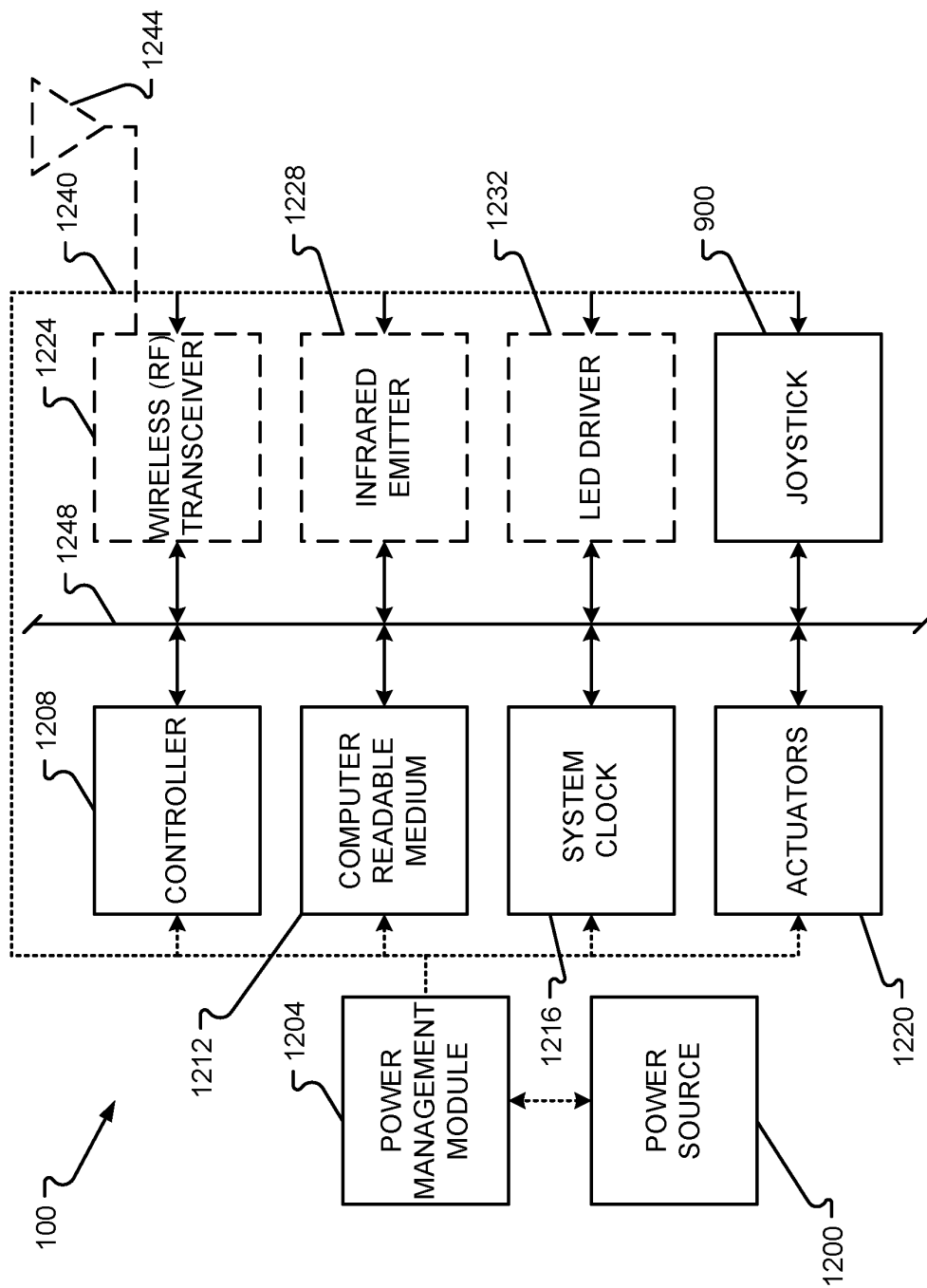


Fig. 12

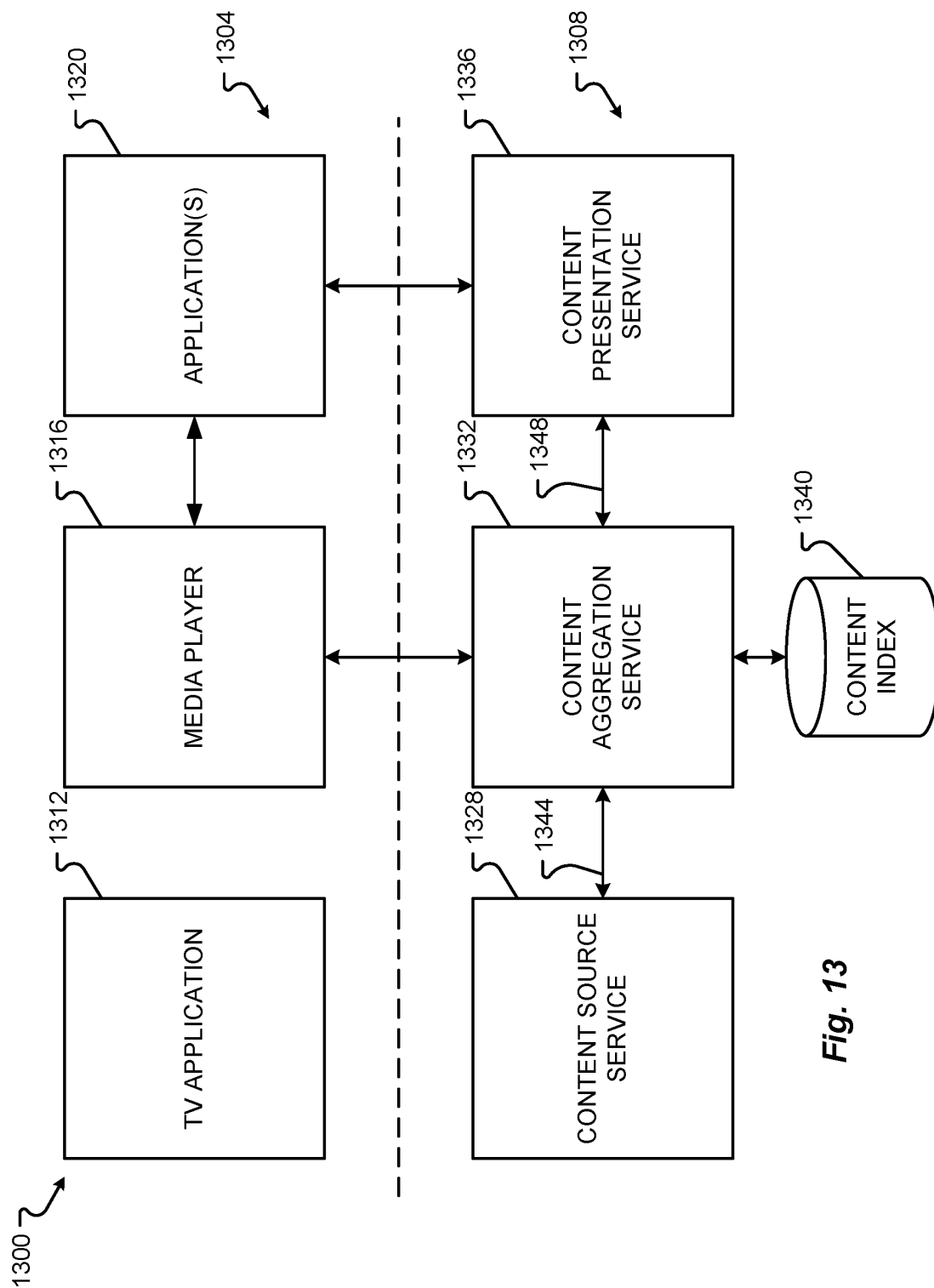


Fig. 13

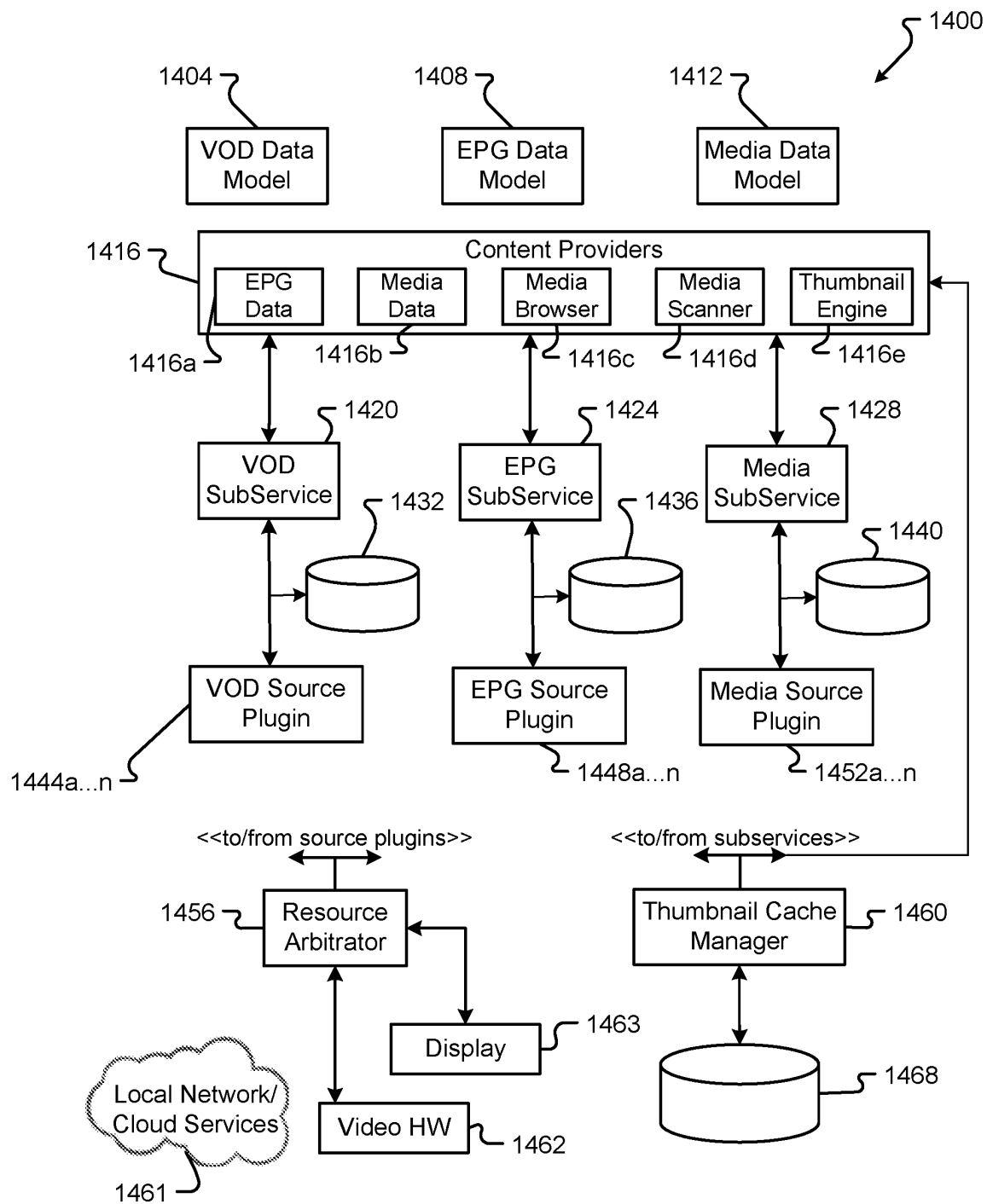


Fig. 14

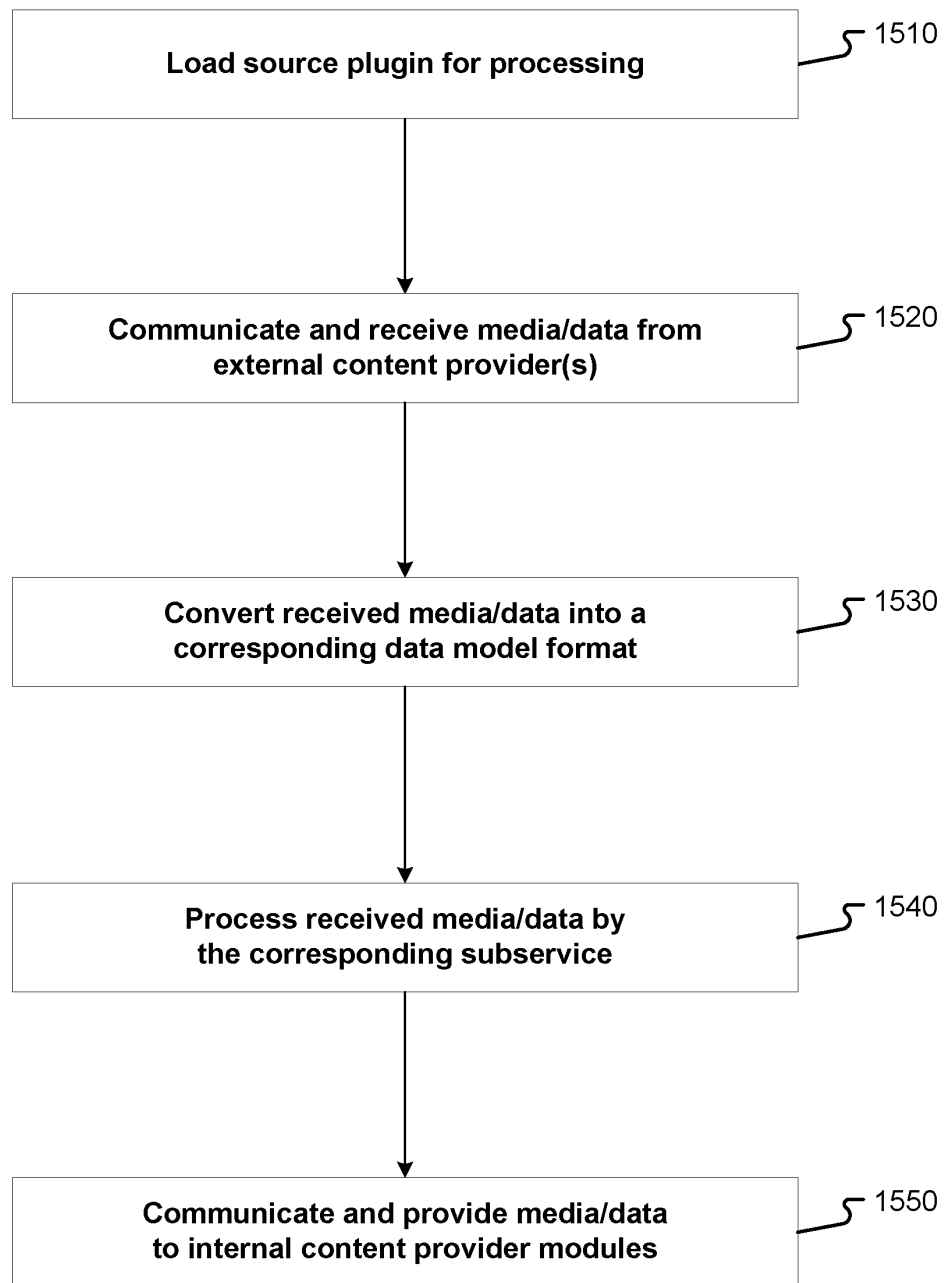


FIG. 15

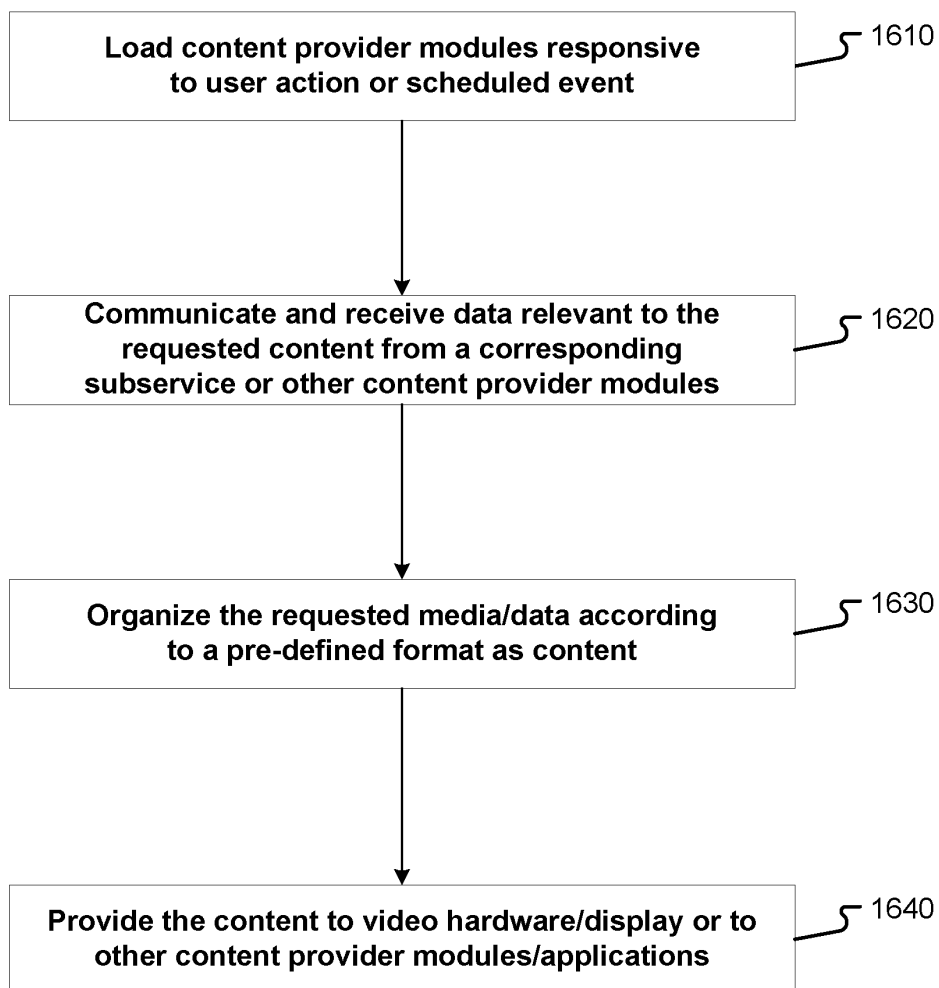


FIG. 16

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DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)**Title of
Invention****DATA SERVICE**

As the below named inventor, I hereby declare that

This declaration
is directed to:

The attached application, or

United States application or PCT international application number _____
filed on _____.

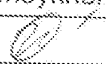
The above-identified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

WARNING:

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.

LEGAL NAME OF INVENTORInventor: Mikhail ShoykherDate (Optional): 14 August 2013Signature: 

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1 minute 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: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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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.

**DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN
APPLICATION DATA SHEET (37 CFR 1.76)**

Title of Invention	DATA SERVICE
As the below named inventor, I hereby declare that: This declaration is directed to: ☒ The attached application, or ☐ United States application or PCT international application number _____ filed on _____ The above-identified application was made or authorized to be made by me. I believe that I am the original inventor or an original joint inventor of a claimed invention in the application. I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both. WARNING: Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available. LEGAL NAME OF INVENTOR Inventor: <u>John S. Visosky</u> Date (Optional): <u>Aug 14/2013</u> Signature: <u>[Signature]</u> Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.	

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1 minute 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: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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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.
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Doc Code: Oath

Document Description: Oath or declaration filed

PTO/AIA/08 (06-12)

Approved for use through 01/31/2014. OMB 0651-0032

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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DECLARATION FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR 1.63)	Attorney Docket Number	6583-472-PUS
	First Named Inventor	SIRPAL
	COMPLETE IF KNOWN	
	Application Number	14/407,609
	Filing Date	December 12, 2014
	Art Unit	Not Yet Assigned
☐ Declaration Submitted With Initial Filing	OR	☒ Declaration Submitted After Initial Filing (surcharge (37 CFR 1.16(f)) required)
Examiner Name		Not Yet Assigned

EPG AGGREGATION FROM MULTIPLE SOURCES

(Title of the Invention)

As a below named inventor, I hereby declare that:

This declaration is directed to:

☐ The attached application,

OR

☒ United States Application Number or PCT International application number 14/407,609
filed on 12/12/2014

The above-identified application was made or authorized to be made by me.

I believe I am the original inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

Authorization To Permit Access To Application by Participating Office

☐ If checked, the undersigned hereby grants the USPTO authority to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the World Intellectual Property Office (WIPO), and any other intellectual property offices in which a foreign application claiming priority to the above-identified patent application is filed access to the above-identified patent application. See 37 CFR 1.14(c) and (h). This box should not be checked if the applicant does not wish the EPO, JPO, KIPO, WIPO, or other intellectual property office in which a foreign application claiming priority to the above-identified patent application is filed to have access to the above-identified patent application.

In accordance with 37 CFR 1.14(h)(3), access will be provided to a copy of the above-identified patent application with respect to: 1) the above-identified patent application-as-filed; 2) any foreign application to which the above-identified patent application claims priority under 35 U.S.C. 119(a)-(d) if a copy of the foreign application that satisfies the certified copy requirement of 37 CFR 1.55 has been filed in the above-identified patent application; and 3) any U.S. application-as-filed from which benefit is sought in the above-identified patent application.

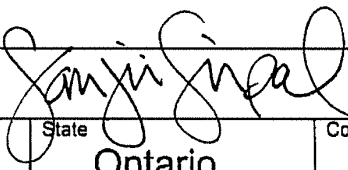
In accordance with 37 CFR 1.14(c), access may be provided to information concerning the date of filing the Authorization to Permit Access to Application by Participating Offices.

[Page 1 of 3]

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If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

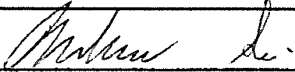
DECLARATION — Utility or Design Patent Application

Direct all correspondence to:	☒	The address associated with Customer Number:	111285	OR	☐	Correspondence address below
Name						
Address						
City		State		Zip		
Country		Telephone		Email		
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LEGAL NAME OF SOLE OR FIRST INVENTOR:						
(E.g., Given Name (first and middle (if any)) and Family Name or Surname)						
Sanjiv SIRPAL						
Inventor's Signature				Date (Optional)		
						
Residence: City		State		Country		
Oakville		Ontario		CA		
Mailing Address						
3264 Stocksbridge Avenue						
City		State		Zip		Country
Oakville		Ontario		L6M 0E3		CA
☒ Additional inventors are being named on the <u>1</u> supplemental sheet(s) PTO/AIA/10 attached hereto						

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SUPPLEMENTAL SHEET FOR DECLARATION	ADDITIONAL INVENTOR(S)
	Supplemental Sheet (for PTO/AIA/08,09)

Page 3 of 3

Legal Name of Additional Joint Inventor, if any:			
(E.g., Given Name (first and middle (if any)) and Family Name or Surname)			
Mohammed SELIM			
Inventor's Signature 		Date (Optional) March 1 2015	
Residence: City	Oakville	State	Ontario
		Country	CA
2488 Oakhaven Drive			
Mailing Address			
City	Oakville	State	Ontario
		Zip	L6M 4B9
		Country	CA
Legal Name of Additional Joint Inventor, if any:			
(E.g., Given Name (first and middle (if any)) and Family Name or Surname)			
Inventor's Signature		Date (Optional)	
Residence: City		State	
		Country	
Mailing Address			
City		State	
		Zip	
		Country	
Legal Name of Additional Joint Inventor, if any:			
(E.g., Given Name (first and middle (if any)) and Family Name or Surname)			
Inventor's Signature		Date (Optional)	
Residence: City		State	
		Country	
Mailing Address			
City		State	
		Zip	
		Country	

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DATA SERVICE

CROSS REFERENCE TO RELATED APPLICATION

[0001] This application is a continuation of and claims priority to U.S. Patent Application Serial No. 14/821,365, filed on August 7, 2015, entitled “Automated DLNA Scanning with Notification,” which is a continuation of and claims priority to U.S. Patent Application Serial Nos.: (1) 13/969,205, filed on August 16, 2013, entitled “Automated DLNA Scanning With Notification”; (2) 13/969,190, filed on August 16, 2013, entitled “Data Service”; (3) 13/969,201, filed on August 16, 2013, entitled “Data Service Function”; (4) 13/970,234, filed on August 19, 2013, entitled “Sourcing EPG Data”; (5) 13/970,243, filed on August 19, 2013, entitled “EPG Data Functions”; (6) 13/970,247, filed on August 19, 2013, entitled “EPG Data Interface”; and (7) 14/407,609, filed on December 12, 2014, entitled “EPG Aggregation From Multiple Sources,” which is a national stage application under 35 U.S.C. 371 of PCT Application No. PCT/US13/36804, having an international filing date of April 16, 2013; which each of the foregoing claims the benefits of and priority, under 35 U.S.C. § 119(e), to U.S. Provisional Application Serial Nos. 61/684,672 filed on August 17, 2012, “Smart TV”; 61/702,650 filed on September 18, 2012, “Smart TV”; 61/697,710 filed on September 6, 2012, “Social TV”; 61/700,182 filed on September 12, 2012, “Social TV Roadmap”; 61/736,692 filed on December 13, 2012, “SmartTV”; 61/798,821 filed on March 15, 2013, “SmartTV”; 61/804,942 filed on March 25, 2013, “SmartTV”; 61/804,998 filed on March 25, 2013, “SmartTV”; 61/804,971 filed on March 25, 2013, “SmartTV”; 61/804,990 filed on March 25, 2013, “SmartTV”; 61/805,003 filed on March 25, 2013, “SmartTV”; 61/805,053 filed on March 25, 2013, “SmartTV”; 61/805,030 filed on March 25, 2013, “SmartTV”; 61/805,027 filed on March 25, 2013, “SmartTV”; 61/805,042 filed on March 25, 2013, “SmartTV”; and 61/805,038 filed on March 25, 2013. Each of the aforementioned documents is incorporated herein by reference in their entirety for all that they teach and for all purposes.

BACKGROUND

[0002] Consolidation of device features or technological convergence is an increasing trend. Technological convergence describes the tendency for different technological systems to evolve toward performing similar tasks. As people use more devices, the need to carry those devices, charge those devices, update software on those devices, etc. becomes more cumbersome. To compensate for these problems, technology companies have been integrating features from different

devices into one or two multi-functional devices. For example, cellular phones are now capable of accessing the Internet, taking photographs, providing calendar functions, etc.

[0003] The consolidation trend is now affecting the design and functionality of devices generally used in the home. For example, audio receivers can access the Internet, digital video recorders can store or provide access to digital photographs, etc. The television in home audio/video systems remains a cornerstone device because the display function cannot be integrated into other devices. As such, consolidating home devices leads to integrating features and functionality into the television. The emergence of the Smart Television (Smart TV) is evidence of the trend to consolidate functionality into the television.

[0004] A Smart TV is generally conceived as a device that integrates access to the Internet and Web 2.0 features into television sets. The Smart TV represents the trend of technological convergence between computers and television sets. The Smart TV generally focuses on online interactive media, Internet TV, on-demand streaming media, and generally does not focus on traditional broadcast media. Unfortunately, most Smart TVs have yet to provide seamless and intuitive user interfaces for navigating and/or executing the various features of the Smart TV. As such, there are still issues with the consolidation of features and the presentation of these features in Smart TVs.

SUMMARY

[0005] There is a need for an Intelligent TV with intuitive user interfaces and with seamless user interaction capability. These and other needs are addressed by the various aspects, embodiments, and/or configurations of the present disclosure. Also, while the disclosure is presented in terms of exemplary embodiments, it should be appreciated that individual aspects of the disclosure can be separately claimed.

[0006] According to the disclosure, a method of providing content for an Intelligent TV includes loading an internal content provider module responsive to a user action or a scheduled event on the Intelligent TV, communicating and receiving data relevant to the requested content from a corresponding subservice or a content provider module of the Intelligent TV, organizing the received data as the content according to a pre-defined format, and providing the content to video hardware or display of the Intelligent TV or to a content provider module or application of the Intelligent TV. The internal content provider module includes an EPG data provider, a media data provider, a media browser, a media scanner, and/or a thumbnail engine. The EPG data provider is

configured to serve one or more applications of the Intelligent TV with EPG information in a read-only format. The media data provider is configured to provide media metadata personalized for a user. The media browser is configured to provide a real-time view of media sources of the Intelligent TV and maintain a list of connected media sources of the Intelligent TV. The media scanner is configured to populate a media table using data retrieved by the media browser and rescan for new media periodically. The thumbnail engine is configured to provide thumbnails for media, applications, or other contents.

[0007] According to the disclosure, a data service system in an Intelligent TV includes an internal content provider module configured to provide content to video hardware or display of the in Intelligent TV or to a content provider module or application of the Intelligent TV and a subservice configured to provide the internet content provider module with requested data for a pre-defined data model. The internal content provider module is loaded on the Intelligent TV responsive to a user action or a schedule event on the Intelligent TV, and the internal content provider module organizes the received data from the subservice as the content according to a pre-defined format.

[0008] According to the disclosure, an Intelligent Television (TV). An Intelligent TV includes a data service system, the data service system includes an internal content provider module configured to provide content to video hardware or display of the in Intelligent TV or to a content provider module or application of the Intelligent TV and a subservice configured to provide the internet content provider module with requested data for a pre-defined data model. The internal content provider module is loaded on the Intelligent TV responsive to a user action or a schedule event on the Intelligent TV, and the internal content provider module organizes the received data from the subservice as the content according to a pre-defined format.

[0009] The present disclosure can provide a number of advantages depending on the particular aspect, embodiment, and/or configuration.

[0010] Each subservice will be able to manage media and/or data from its particular source(s) and further aggregate media and/or data from multiple distinct sources. Alternatively, a particular subservice may further expose the multiple sources to the application levels in an organized and efficient manner.

[0011] Subservices will also have access to local storage of media and/or data with defined priority goals such as improved performance or to keep track of transient information.

[0012] These and other advantages will be apparent from the disclosure.

[0013] The phrases “at least one,” “one or more,” and “and/or” are open-ended expressions that are both conjunctive and disjunctive in operation. For example, each of the expressions “at least one of A, B and C,” “at least one of A, B, or C,” “one or more of A, B, and C,” “one or more of A, B, or C” and “A, B, and/or C” means A alone, B alone, C alone, A and B together, A and C together, B and C together, or A, B and C together.

[0014] The term “a” or “an” entity refers to one or more of that entity. As such, the terms “a” (or “an”), “one or more” and “at least one” can be used interchangeably herein. It is also to be noted that the terms “comprising,” “including,” and “having” can be used interchangeably.

[0015] The term “automatic” and variations thereof, as used herein, refers to any process or operation done without material human input when the process or operation is performed. However, a process or operation can be automatic, even though performance of the process or operation uses material or immaterial human input, if the input is received before performance of the process or operation. Human input is deemed to be material if such input influences how the process or operation will be performed. Human input that consents to the performance of the process or operation is not deemed to be “material.”

[0016] A “blog” (a blend of the term *web log*) is a type of website or part of a website supposed to be updated with new content from time to time. Blogs are usually maintained by an individual with regular entries of commentary, descriptions of events, or other material such as graphics or video. Entries are commonly displayed in reverse-chronological order.

[0017] A “blogging service” is a blog-publishing service that allows private or multi-user blogs with time-stamped entries.

[0018] The term “cable TV” refers to a system of distributing television programs to subscribers via radio frequency (RF) signals transmitted through coaxial cables or light pulses through fiber-optic cables. This contrasts with traditional broadcast television (terrestrial television) in which the television signal is transmitted over the air by radio waves and received by a television antenna attached to the television.

[0019] The term “channel” or “television channel,” as used herein, can be a physical or virtual channel over which a television station or television network is distributed. A physical channel in analog television can be an amount of bandwidth, typically 6, 7, or 8 MHz, that occupies a predetermine channel frequency. A virtual channel is a representation, in cable or satellite television, of a data stream for a particular television media provider (e.g., CDS, TNT, HBO, etc.).

[0020] The term “computer-readable medium,” as used herein, refers to any tangible storage and/or transmission medium that participate in providing instructions to a processor for execution. Such a medium may take many forms, including but not limited to, non-volatile media, volatile media, and transmission media. Non-volatile media includes, for example, NVRAM, or magnetic or optical disks. Volatile media includes dynamic memory, such as main memory. Common *forms* of computer-readable media include, for example, a floppy disk, a flexible disk, hard disk, magnetic tape, or any other magnetic medium, magneto-optical medium, a CD-ROM, any other optical medium, punch cards, paper tape, any other physical medium with patterns of holes, a RAM, a PROM, and EPROM, a FLASH-EPROM, a solid state medium like a memory card, any other memory chip or cartridge, a carrier wave as described hereinafter, or any other medium from which a computer can read. A digital file attachment to e-mail or other self-contained information archive or set of archives is considered a distribution medium equivalent to a tangible storage medium. When the computer-readable media is configured as a database, it is to be understood that the database may be any type of database, such as relational, hierarchical, object-oriented, and/or the like. Accordingly, the disclosure is considered to include a tangible storage medium or distribution medium and prior art-recognized equivalents and successor media, in which the software implementations of the present disclosure are stored.

[0021] The term “enhanced television” (ETV) refers to a collection of specifications developed under the OpenCable project of CableLabs (Cable Television Laboratories, Inc.) that define an ETV Application consisting of resources (files) adhering to the Enhanced TV Binary Interchange Format (EBIF) content format as well as PNG images, JPEG images, and PFR downloadable fonts. An ETV application is normally delivered through an MPEG transport stream and accompanies an MPEG program containing video and audio elementary streams. An “ETV Application” is a collection of resources (files) that include one or more EBIF resources that represent viewable information in the form of pages. Two forms of a given ETV Application may be distinguished: (1) an interchange form and (2) an execution form. The interchange form of an ETV Application consists of the resources (files) that represent the compiled application prior to its actual execution by an ETV User Agent. The execution form of an ETV Application consists of the stored, and possibly mutated forms of these resources while being decoded, presented, and executed by an ETV User Agent. An “ETV User Agent” is a software component that operates on a set-top box, a television, or any other computing environment capable of receiving, decoding, presenting, and processing an ETV Application. This component usually provides, along with its host hardware

environment, one or more mechanisms for an end-user to navigate and interact with the multimedia content represented by ETV Applications.

[0022] The term “high-definition television” (HDTV) provides a resolution that is substantially higher than that of standard-definition television. HDTV may be transmitted in various formats, namely 1080p - 1920×1080p: 2,073,600 pixels (approximately 2.1 megapixels) per frame, 1080i (which is typically either 1920×1080i: 1,036,800 pixels (approximately 1 megapixel) per field or 2,073,600 pixels (approximately 2.1 megapixels) per frame or 1440×1080i:[1] 777,600 pixels (approximately 0.8 megapixels) per field or 1,555,200 pixels (approximately 1.6 megapixels) per frame), or 720p - 1280×720p: 921,600 pixels (approximately 0.9 megapixels) per frame. As will be appreciated, “frame size” in pixels is defined as number of horizontal pixels × number of vertical pixels, for example 1280 × 720 or 1920 × 1080. Often the number of horizontal pixels is implied from context and is omitted, as in the case of 720p and 1080p, “scanning system” is identified with the letter “p” for progressive scanning or “i” for interlaced scanning, and “frame rate” is identified as number of video frames per second. For interlaced systems, an alternative form of specifying number of fields per second is often used. For purposes of this disclosure, “high-definition television” is deemed to include other high-definition analog or digital video formats, including ultra high definition television.

[0023] The term “internet television” (otherwise known as Internet TV, Online Television, or Online TV) is the digital distribution of television content via the Internet. It should not be confused with Web television - short programs or videos created by a wide variety of companies and individuals, or Internet protocol television (IPTV) - an emerging internet technology standard for use by television broadcasters. Internet Television is a general term that covers the delivery of television shows and other video content over the internet by video streaming technology, typically by major traditional television broadcasters. It does not describe a technology used to deliver content (see Internet protocol television). Internet television has become very popular through services such as RTÉ Player in Ireland; BBC iPlayer, 4oD, ITV Player (also STV Player and UTV Player) and Demand Five in the United Kingdom; Hulu in the United States; Nederland 24 in the Netherlands; ABC iview and Australia Live TV in Australia; Tivibu in Turkey; and iWanTV! in the Philippines.

[0024] The term “internet protocol television” (IPTV) refers to a system through which television services are delivered using the Internet protocol suite over a packet-switched network such as the Internet, instead of being delivered through traditional terrestrial, satellite signal, and cable

television formats. IPTV services may be classified into three main groups, namely live television, with or without interactivity related to the current TV show; time-shifted television: catch-up TV (replays a TV show that was broadcast hours or days ago), start-over TV (replays the current TV show from its beginning); and video on demand (VOD): browse a catalog of videos, not related to TV programming. IPTV is distinguished from Internet television by its on-going standardization process (e.g., European Telecommunications Standards Institute) and preferential deployment scenarios in subscriber-based telecommunications networks with high-speed access channels into end-user premises via set-top boxes or other customer-premises equipment.

[0025] The term “Intelligent TV,” as used herein, refers to a television configured to provide one or more intuitive user interfaces and interactions based on a unique application platform and architecture. The Intelligent TV utilizes processing resources associated with the television to integrate Internet connectivity with parallel application functionality. This integration allows a user the ability to intuitively access various sources of media and content (e.g., Internet, over-the-top content, on-demand streaming media, over-the-air broadcast media, and/or other forms of information) via the Intelligent TV in a quick and efficient manner. Although the Intelligent TV disclosed herein may comprise one or more components of a “smart TV,” it is an aspect of the Intelligent TV to provide expanded intuitive user interaction capability for navigating and executing the various features of the television. A “smart TV,” sometimes referred to as a connected TV, or hybrid TV (not to be confused with IPTV, Internet TV, or with Web TV), describes a trend of integration of the Internet and Web 2.0 features into television sets and set-top boxes, as well as the technological convergence between computers and these television sets/set-top boxes. The smart TV devices have a higher focus on online interactive media, Internet TV, over-the-top content, as well as on-demand streaming media, and less focus on traditional broadcast media than traditional television sets and set-top boxes. As can be appreciated, the Intelligent TV encompasses a broader range of technology than that of the smart TV defined above.

[0026] The term “panel,” as used herein, can mean a user interface displayed in at least a portion of the display. The panel may be interactive (e.g., accepts user input) or informational (e.g., does not accept user input). A panel may be translucent whereby the panel obscures but does not mask the underlying content being displayed in the display. Panels may be provided in response to a user input from a button or remote control interface.

[0027] The term “screen,” as used herein, refers to a physical structure that includes one or more hardware components that provide the device with the ability to render a user interface and/or

receive user input. A screen can encompass any combination of gesture capture region, a touch sensitive display, and/or a configurable area. The device can have one or more physical screens embedded in the hardware. However a screen may also include an external peripheral device that may be attached and detached from the device. In embodiments, multiple external devices may be attached to the device. For example, another screen may be included with a remote control unit that interfaces with the Intelligent TV.

[0028] The term “media” or “multimedia,” as used herein, refers to content that may assume one of a combination of different content forms. Multimedia can include one or more of, but is not limited to, text, audio, still images, animation, video, or interactivity content forms.

[0029] A “smart TV,” sometimes referred to as Intelligent TV, connected TV or hybrid TV, (not to be confused with IPTV, Internet TV, or with Web TV), describes a trend of integration of the Internet and Web 2.0 features into television sets and set-top boxes, as well as the technological convergence between computers and these television sets/set-top boxes. The devices have a higher focus on online interactive media, Internet TV, over-the-top content, as well as on-demand streaming media, and less focus on traditional broadcast media than traditional television sets and set-top boxes.

[0030] The term “television” is a telecommunication medium, device (or set) or set of associated devices, programming, and/or transmission for transmitting and receiving moving images that can be monochrome (black-and-white) or colored, with or without accompanying sound. Different countries use one of the three main video standards for TVs, namely PAL, NTSC or SECAM. Television is most commonly used for displaying broadcast television signals. The broadcast television system is typically disseminated via radio transmissions on designated channels in the 54–890 MHz frequency band. A common television set comprises multiple internal electronic circuits, including those for receiving and decoding broadcast signals. A visual display device which lacks a tuner is properly called a video monitor, rather than a television. A television may be different from other monitors or displays based on the distance maintained between the user and the television when the user watches the media and based on the inclusion of a tuner or other electronic circuit to receive the broadcast television signal.

[0031] The term “Live TV,” as used herein, refers to a television production broadcast in real-time, as events happen, in the present.

[0032] The term “standard-definition television” (SDTV) is a television system that uses a resolution that is not considered to be either high-definition television (HDTV 720p and 1080p) or

enhanced-definition television (EDTV 480p). The two common SDTV signal types are 576i, with 576 interlaced lines of resolution, derived from the European-developed PAL and SECAM systems; and 480i based on the American National Television System Committee NTSC system. In the US, digital SDTV is broadcast in the same 4:3 aspect ratio as NTSC signals. However, in other parts of the world that used the PAL or SECAM analog standards, standard-definition television is now usually shown with a 16:9 aspect ratio. Standards that support digital SDTV broadcast include DVB, ATSC and ISDB. Television signals are transmitted in digital form, and their pixels have a rectangular shape, as opposed to square pixels that are used in modern computer monitors and modern implementations of HDTV. The table below summarizes pixel aspect ratios for various kinds of SDTV video signal. Note that the actual image (be it 4:3 or 16:9) is always contained in the center 704 horizontal pixels of the digital frame, regardless of how many horizontal pixels (704 or 720) are used. In case of digital video signal having 720 horizontal pixels, only the center 704 pixels contain actual 4:3 or 16:9 image, and the 8 pixel wide stripes from either side are called nominal analogue blanking and should be discarded before displaying the image. Nominal analogue blanking should not be confused with overscan, as overscan areas are part of the actual 4:3 or 16:9 image.

[0033] The term “video on demand (VOD),” as used herein, refers to systems and processes which allow users to select and watch/listen to video or audio content on demand. VOD systems may stream content, to view the content in real time, or download the content to a storage medium for viewing at a later time.

[0034] The term “satellite positioning system receiver” refers to a wireless receiver or transceiver to receive and/or send location signals from and/or to a satellite positioning system, such as the Global Positioning System (GPS) (US), GLONASS (Russia), Galileo positioning system (EU), Compass Navigation System (China), and Regional Navigational Satellite System (India).

[0035] The term “displayed image,” as used herein, refers to an image produced on the display. A typical displayed image is a television broadcast or menu. The displayed image may occupy all or a portion of the display.

[0036] The term “display orientation,” as used herein, refers to the way in which a rectangular display is oriented by a user for viewing. The two most common types of display orientation are portrait and landscape. In landscape mode, the display is oriented such that the width of the display is greater than the height of the display (such as a 4:3 ratio, which is 4 units wide and 3 units tall, or a 16:9 ratio, which is 16 units wide and 9 units tall). Stated differently, the longer dimension of the

display is oriented substantially horizontal in landscape mode while the shorter dimension of the display is oriented substantially vertical. In the portrait mode, by contrast, the display is oriented such that the width of the display is less than the height of the display. Stated differently, the shorter dimension of the display is oriented substantially horizontal in the portrait mode while the longer dimension of the display is oriented substantially vertical.

[0037] The term “module,” as used herein, refers to any known or later developed hardware, software, firmware, artificial intelligence, fuzzy logic, or combination of hardware and software that is capable of performing the functionality associated with that element.

[0038] The terms “determine,” “calculate,” and “compute,” and variations thereof, as used herein, are used interchangeably and include any type of methodology, process, mathematical operation or technique.

[0039] The term “touch screen” or “touchscreen” refers to a screen that can receive user contact or other tactile input, such as a stylus. The touch screen may sense user contact in a number of different ways, such as by a change in an electrical parameter (e.g., resistance or capacitance), acoustic wave variations, infrared radiation proximity detection, light variation detection, and the like. In a resistive touch screen, for example, normally separated conductive and resistive metallic layers in the screen pass an electrical current. When a user touches the screen, the two layers make contact in the contacted location, whereby a change in electrical field is noted and the coordinates of the contacted location calculated. In a capacitive touch screen, a capacitive layer stores an electrical charge, which is discharged to the user upon contact with the touch screen, causing a decrease in the charge of the capacitive layer. The decrease is measured, and the contacted location coordinates determined. In a surface acoustic wave touch screen, an acoustic wave is transmitted through the screen, and the acoustic wave is disturbed by user contact. A receiving transducer detects the user contact instance and determines the contacted location coordinates.

[0040] The term “web television” is original television content produced for broadcast via the World Wide Web. Some major distributors of web television are YouTube, MySpace, Newgrounds, Blip.tv, and Crackle.

[0041] The term “display,” as used herein, refers to at least a portion of a screen used to display the output of the television to a user. A display may be a single-screen display or a multi-screen display, referred to as a composite display. A composite display can encompass the touch sensitive display of one or more screens. A single physical screen can include multiple displays that are

managed as separate logical displays. Thus, different content can be displayed on the separate displays although part of the same physical screen.

[0042] The terms “instant message” and “instant messaging” refer to a form of real-time text communication between two or more people, typically based on typed text.

[0043] The term “internet search engine” refers to a web search engine designed to search for information on the World Wide Web and FTP servers. The search results are generally presented in a list of results often referred to as SERPS, or “search engine results pages.” The information may consist of web pages, images, information and other types of files. Some search engines also mine data available in databases or open directories. Web search engines work by storing information about many web pages, which they retrieve from the html itself. These pages are retrieved by a Web crawler (sometimes also known as a spider) — an automated Web browser which follows every link on the site. The contents of each page are then analyzed to determine how it should be indexed (for example, words are extracted from the titles, headings, or special fields called meta tags). Data about web pages is stored in an index database for use in later queries. Some search engines, such as Google™, store all or part of the source page (referred to as a cache) as well as information about the web pages, whereas others, such as AltaVista™, store every word of every page they find.

[0044] The terms “online community,” “e-community,” or “virtual community” mean a group of people that primarily interact via a computer network, rather than face to face, for social, professional, educational or other purposes. The interaction can use a variety of media formats, including wikis, blogs, chat rooms, Internet forums, instant messaging, email, and other forms of electronic media. Many media formats are used in social software separately or in combination, including text-based chatrooms and forums that use voice, video, text, or avatars.

[0045] The term “remote control” refers to a component of an electronic device, most commonly a television set, DVD player and/or home theater system for operating the device wirelessly, typically from a short line-of-sight distance. Remote control normally uses infrared and/or radio frequency (RF) signaling and can include WiFi, wireless USB, Bluetooth™ connectivity, motion sensor enabled capabilities and/or voice control. A touchscreen remote control is a handheld remote control device which uses a touchscreen user interface to replace most of the hard, built-in physical buttons used in normal remote control devices.

[0046] The term “satellite TV” refers to television programming delivered by the means of communications satellite and received by an outdoor antenna, usually a parabolic reflector generally

referred to as a satellite dish, and as far as household usage is concerned, a satellite receiver either in the form of an external set-top box or a satellite tuner module built into a TV set.

[0047] The term “social network service” is a service provider that builds online communities of people, who share interests and/or activities, or who are interested in exploring the interests and activities of others. Most social network services are web-based and provide a variety of ways for users to interact, such as e-mail and instant messaging services.

[0048] The term “social network” refers to a web-based social network.

[0049] The term “gesture” refers to a user action that expresses an intended idea, action, meaning, result, and/or outcome. The user action can include manipulating a device (e.g., opening or closing a device, changing a device orientation, moving a trackball or wheel, etc.), movement of a body part in relation to the device, movement of an implement or tool in relation to the device, audio inputs, etc. A gesture may be made on a device (such as on the screen) or with the device to interact with the device.

[0050] The term “gesture capture” refers to a sense or otherwise a detection of an instance and/or type of user gesture. The gesture capture can occur in one or more areas of the screen. A gesture region can be on the display, where it may be referred to as a touch sensitive display or off the display where it may be referred to as a gesture capture area.

[0051] The term “electronic address” refers to any contactable address, including a telephone number, instant message handle, e-mail address, Universal Resource Locator (URL), Universal Resource Identifier (URI), Address of Record (AOR), electronic alias in a database, like addresses, and combinations thereof.

[0052] It shall be understood that the term “means,” as used herein, shall be given its broadest possible interpretation in accordance with 35 U.S.C., Section 112. Accordingly, a claim incorporating the term “means” shall cover all structures, materials, or acts set forth herein, and all of the equivalents thereof. Further, the structures, materials or acts and the equivalents thereof shall include all those described in the summary of the invention, brief description of the drawings, detailed description, abstract, and claims themselves.

[0053] The preceding is a simplified summary of the disclosure to provide an understanding of some aspects of the disclosure. This summary is neither an extensive nor exhaustive overview of the disclosure and its various aspects, embodiments, and/or configurations. It is intended neither to identify key or critical elements of the disclosure nor to delineate the scope of the disclosure but to present selected concepts of the disclosure in a simplified form as an introduction to the more

detailed description presented below. As will be appreciated, other aspects, embodiments, and/or configurations of the disclosure are possible utilizing, alone or in combination, one or more of the features set forth above or described in detail below.

BRIEF DESCRIPTION OF THE DRAWINGS

[0054] Fig. 1A includes a first view of an embodiment of an environment or an intelligent television;

[0055] Fig. 1B includes a second view of an embodiment of an environment or an intelligent television;

[0056] Fig. 2A includes a first view of an embodiment of an intelligent television;

[0057] Fig. 2B includes a second view of an embodiment of an intelligent television;

[0058] Fig. 2C includes a third view of an embodiment of an intelligent television;

[0059] Fig. 2D includes a fourth view of an embodiment of an intelligent television;

[0060] Fig. 3 is a block diagram of an embodiment of the hardware of the intelligent television;

[0061] Fig. 4 is a block diagram of an embodiment of the intelligent television software and/or firmware;

[0062] Fig. 5 is a second block diagram of an embodiment of the intelligent television software and/or firmware;

[0063] Fig. 6 is a third block diagram of an embodiment of the intelligent television software and/or firmware;

[0064] Fig. 7 is a plan view of an embodiment of a handheld remote control;

[0065] Fig. 8 is a side view of an embodiment of a remote control;

[0066] Fig. 9A is a bottom view of an embodiment of a remote control with a joystick in a neutral position;

[0067] Fig. 9B is a bottom view of an embodiment of a remote control with the joystick in a lower position;

[0068] Fig. 9C is a bottom view of an embodiment of a remote control with the joystick in an upper position;

[0069] Fig. 10 is a plan view of another embodiment of a handheld remote control;

[0070] Fig. 11A is a front view of an embodiment of an Intelligent TV screen;

[0071] Fig. 11B is a front view of an embodiment of an Intelligent TV screen;

[0072] Fig. 11C is a front view of an embodiment of an Intelligent TV screen;

[0073] Fig. 12 is a block diagram of an embodiment of a handheld remote control of either Fig. 7 or 10;

[0074] Fig. 13 is a block diagram of an embodiment of a content data service;

[0075] Fig. 14 is a block diagram of an embodiment of a data service;

[0076] Fig. 15 is a flow diagram of an embodiment of a data management process; and

[0077] Fig. 16 is a flow diagram of an embodiment of a data management process.

[0078] In the appended figures, similar components and/or features may have the same reference label. Further, various components of the same type may be distinguished by following the reference label by a letter that distinguishes among the similar components. If only the first reference label is used in the specification, the description is applicable to any one of the similar components having the same first reference label irrespective of the second reference label.

DETAILED DESCRIPTION

[0079] Presented herein are embodiments of a device. The device can be a network-enabled telecommunications device, such as a television, an electronic visual display device, or other smart device. The device can include one or more screens, or sections of a screen, that are configured to receive and present information from a number of sources. Further, the device can receive user input in unique ways. The overall design and functionality of the device provides for an enhanced user experience making the device more useful and more efficient.

[0080] Intelligent Television (TV) Environment:

[0081] Referring to Figs. 1A and 1B, an Intelligent TV, or device, 100 is shown. It is anticipated that the Intelligent TV 100 may be used for entertainment, business applications, social interaction, content creation and/or consumption, and to organize and control one or more other devices that are in communication with the Intelligent TV 100. As can be appreciated, the Intelligent TV 100 can be used to enhance the user interactive experience whether at home or at work.

[0082] In some embodiments, the Intelligent TV 100 may be configured to receive and understand a variety of user and/or device inputs. For example, a user may interface with the Intelligent TV 100 via one or more physical or electrical controls, such as buttons, switches, touch sensitive screens/regions (e.g., capacitive touch, resistive touch, etc.), and/or other controls associated with the Intelligent TV 100. In some cases, the Intelligent TV 100 may include one or more interactive controls. Additionally or alternatively, the one or more controls may be associated with a remote control. The remote control may communicate with the Intelligent TV 100 via wired

and/or wireless signals. As can be appreciated, the remote control may operate via radio frequency (RF), infrared (IR), and/or a specific wireless communications protocol (e.g., Bluetooth™, Wi-Fi, etc.). In some cases, the controls, whether physical or electrical, may be configured (e.g., programmed) to suit a user's preferences.

[0083] Additionally or alternatively, smart phones, tablets, computers, laptops, netbooks, and other smart devices may be used to control the Intelligent TV 100. For example, control of the Intelligent TV 100 may be achieved via an application running on a smart device. The application may be configured to present a user with various Intelligent TV 100 controls in an intuitive user interface (UI) on a screen associated with the device 100. The screen may be a touch sensitive, or touch screen, display. Selections input by a user via the UI may be configured to control the Intelligent TV 100 by the application accessing one or more communication features associated with the smart device.

[0084] It is anticipated that the Intelligent TV 100 can receive input via various input devices including, but in no way limited to, video, audio, radio, light, tactile, and combinations thereof. Among other things, these input devices may be configured to allow the Intelligent TV 100 to see, recognize, and react to user gestures. For instance, a user may talk to the Intelligent TV 100 in a conversational manner. The Intelligent TV 100 may hear and understand voice commands in a manner similar to a smart device's intelligent personal assistant and voice-controlled navigator application (e.g., Apple's Siri, Android's Skyvi, Robin, Iris, and other applications).

[0085] The Intelligent TV 100 may also be a communications device which can establish network connections 104 through many alternate means, including wired 108 or wireless 112 means, over cellular networks 116 to connect via cellular base antenna 142 to telephone networks operated by telephone company 146, and by using a telephone line 120 to connect to telephone networks operated by telephone company 146. These connections 104 enable the Intelligent TV 100 to access one or more communication networks 132. The communication networks may comprise any type of known communication medium or collection of communication media and may use any type of protocols to transport messages or signals between endpoints. The communication networks may include wired and/or wireless communication technologies. The Internet is an example of a communication network 132 that constitutes an Internet Protocol (IP) network consisting of many computers, computing networks, and other communication devices located all over the world, which are connected through many telephone systems and other means.

[0086] Other examples of the communication network 132 include, without limitation, a standard Plain Old Telephone System (POTS), an Integrated Services Digital Network (ISDN), the Public Switched Telephone Network (PSTN), a Local Area Network (LAN), a Wide Area Network (WAN), a cellular network, and any other type of packet-switched or circuit-switched network known in the art. In addition, it can be appreciated that the communication network 132 need not be limited to any one network type, and instead may be comprised of a number of different networks and/or network types.

[0087] In some embodiments, the Intelligent TV 100 may be equipped with multiple communication means. The multiple communication means may allow the Intelligent TV 100 to communicate across Local Area Networks (LANs) 124, wireless local area networks (WLANs) 128, and other networks 132. The networks 132 may be connected in a redundant manner to ensure network access. In other words, if one connection is interrupted, the Intelligent TV 100 can use an alternate communications path to reestablish and/or maintain the network connection 104. Among other things, the Intelligent TV 100 may use these network connections 104 to send and receive information, interact with an electronic program guide (EPG) 136, receive software updates 140, contact customer service 144 (e.g., to receive help or service, etc.), and/or access remotely stored digital media libraries 148. In addition, these connections can allow the Intelligent TV 100 to make phone calls, send and/or receive email messages, send and/or receive text messages (such as email and instant messages), surf the Internet using an internet search engine, post blogs by a blogging service, and connect/interact with social media sites and/or an online community (e.g., Facebook, Twitter, LinkedIn, Pinterest, Google+, MySpace, and the like) maintained by a social network service. In combination with other components of the Intelligent TV 100 described in more detail below, these network connections 104 also enable the Intelligent TV 100 to conduct video teleconferences, electronic meetings, and other communications. The Intelligent TV 100 may capture and store images and sound, using associated cameras, microphones, and other sensors. Additionally or alternatively, the Intelligent TV 100 may create and save screen shots of media, images, and data displayed on a screen associated with the Intelligent TV 100.

[0088] Further, as shown in Fig. 1B, the Intelligent TV 100 can interact with other electronic devices 168 by either the wired 108 and/or wireless 112 connections. As described herein, components of the Intelligent TV 100 allow the device 100 to be connected to devices 168 including, but not limited to, DVD players 168a, BluRay players 168b, portable digital media devices 168c, smart phones 168d, tablet devices 168e, personal computers 168f, external cable

boxes 168g, keyboards 168h, pointing devices 168i, printers 168j, game controllers and/or game pads 168k, satellite dishes 168l, external display devices 168m, and other universal serial bus (USB), local area network (LAN), Bluetooth™, or high-definition multimedia interface (HDMI) compliant devices, and/or wireless devices. When connected to an external cable box 168g or satellite dish 168l, the Intelligent TV 100 can access additional media content. Also, as further described below, the Intelligent TV 100 is capable of receiving digital and/or analog signals broadcast by TV stations. The Intelligent TV 100 can be configured as one or more of a standard-definition television, enhanced television, and high-definition television. It may operate as one or more of cable, Internet, Internet Protocol, satellite, web, and/or smart television. The Intelligent TV 100 may also be used to control the operation of, and may interface with, other smart components such as security systems 172, door/gate controllers 176, remote video cameras 180, lighting systems 184, thermostats 188, refrigerators 192, and other appliances.

[0089] Intelligent TV:

[0090] Figs. 2A-2D illustrate components of the Intelligent TV 100. In general, as shown by Fig. 2A, the Intelligent TV 100 can be supported by a removable base or stand 204 that is attached to a frame 208. The frame 208 surrounds edges of a display screen 212, leaving a front surface of the display screen 212 uncovered. The display screen 212 may comprise a Liquid Crystal Display (LCD) screen, a plasma screen, Light Emitting Diode (LED) screen, or other screen types. In embodiments, the entire front surface of the screen 212 may be touch sensitive and capable of receiving input by the user touching the front surface of the screen 212.

[0091] The Intelligent TV 100 may include integrated speakers 216 and at least one microphone 220. A first area of the frame 208 may comprise a horizontal gesture capture region 224 and second areas comprise vertical gesture capture regions 228. The gesture capture regions 224, 228 may comprise areas or regions that are capable of receiving input by recognizing gestures made by the user, and in some examples, without the need for the user to actually touch the screen 212 surface of the Intelligent TV 100. However, the gesture capture regions 224, 228 may not include pixels that can perform a display function or capability.

[0092] One or more image capture devices 232, such as a camera, can be included for capturing still and/or video images. The image capture device 232 can include or be associated with additional elements, such as a flash or other light source 236 and a range finding device 240 to assist focusing of the image capture device. In addition, the microphone 220, gesture capture regions 224, 228, image capture devices 232, and the range finding device 240 may be used by the

Intelligent TV 100 to recognize individual users. Additionally or alternatively, the Intelligent TV 100 may learn and remember preferences associated with the individual users. In some embodiments, the learning and remembering (*i.e.*, identifying and recalling stored information) may be associated with the recognition of a user.

[0093] An IR transmitter and receiver 244 may also be provided to connect the Intelligent TV 100 with a remote control device (not shown) or other IR devices. Additionally or alternatively, the remote control device may transmit wireless signals via RF, light, and/or a means other than IR. Also shown in Fig. 2A is an audio jack 248, which may be hidden behind a panel that is hinged or removable. The audio jack 248 accommodates a tip, ring, sleeve (TRS) connector, for example, to allow the user to utilize headphones, a headset, or other external audio equipment.

[0094] The Intelligent TV 100 can also include a number of buttons 252. For example, Fig. 2A illustrates the buttons 252 on the top of the Intelligent TV 100, although the buttons could be placed at other locations. As shown, the Intelligent TV 100 includes six buttons 252a-f, which can be configured for specific inputs. For example, the first button 252a may be configured as an on/off button used to control overall system power to the Intelligent TV 100. The buttons 252 may be configured to, in combination or alone, control a number of aspects of the Intelligent TV 100. Some non-limiting examples include, but are not limited to, overall system volume, brightness, the image capture device, the microphone, and initiation/termination of a video conference. Instead of separate buttons, two of the buttons may be combined into a rocker button. This rocker button arrangement may be useful in situations where the buttons are configured to control features such as volume or brightness. In some embodiments, one or more of the buttons 252 are capable of supporting different user commands. By way of example, a normal press has a duration commonly of less than about 1 second and resembles a quick input. A medium press has a duration commonly of 1 second or more but less than about 12 seconds. A long press has a duration commonly of about 12 seconds or more. The function of the buttons is normally specific to the application that is active on the Intelligent TV 100. In the video conference application for instance and depending on the particular button, a normal, medium, or long press can mean end the video conference, increase or decrease the volume, increase a rate speed associated with a response to an input, and toggle microphone mute. Depending on the particular button, a normal, medium, or long press can also control the image capture device 232 to increase zoom, decrease zoom, take a photograph, or record video.

[0095] In support of communication functions or capabilities, the Intelligent TV 100 can include one or more shared or dedicated antennae 256 and wired broadband connections 260 as shown in Fig. 2B. The antennae 256 also enable the Intelligent TV 100 to receive digital and/or analog broadcast TV channels. The wired broadband connections 260 are, for example, a Digital Subscriber Line (DSL), an optical line, an Ethernet port, an IEEE 1394 interface, or other interfaces. The Intelligent TV 100 also has a telephone line jack 262 to further provide communications capability.

[0096] In addition to the removable base 204, the Intelligent TV 100 may include hardware and mounting points 264 on a rear surface to facilitate mounting the Intelligent TV 100 to a surface, such as a wall. In one example, the Intelligent TV 100 may incorporate at least one Video Equipment Standards Association (VESA) mounting interface for attaching the device 100 to the surface.

[0097] As shown in Fig. 2C, the Intelligent TV 100 may include docking interfaces or ports 268. The docking ports 268 may include proprietary or universal ports to support the interconnection of the Intelligent TV 100 to other devices or components, which may or may not include additional or different capabilities from those integral to the Intelligent TV 100. In addition to supporting an exchange of communication signals between the Intelligent TV 100 and a connected device or component, the docking ports 268 can support the supply of power to the connected device or component. The docking ports 268 can also comprise an intelligent element that comprises a docking module for controlling communications or other interactions between the Intelligent TV 100 and the connected device or component.

[0098] The Intelligent TV 100 also includes a number of card slots 272 and network or peripheral interface ports 276. The card slots 272 may accommodate different types of cards including subscriber identity modules (SIM), secure digital (SD) cards, MiniSD cards, flash memory cards, and other cards. Ports 276 in embodiments may include input/output (I/O) ports, such as universal serial bus (USB) ports, parallel ports, game ports, and high-definition multimedia interface (HDMI) connectors.

[0099] An audio/video (A/V) I/O module 280 can be included to provide audio to an interconnected speaker or other device, and to receive audio input from a connected microphone or other device. As an example, the audio input/output interface 280 may comprise an associated amplifier and analog-to-digital converter.

[0100] Hardware Features:

[0101] Fig. 3 illustrates components of an Intelligent TV 100 in accordance with embodiments of the present disclosure. In general, the Intelligent TV 100 includes a primary screen 304. Screen 304 can be a touch sensitive screen and can include different operative areas.

[0102] For example, a first operative area, within the screen 304, may comprise a display 310. In some embodiments, the display 310 may be touch sensitive. In general, the display 310 may comprise a full color, display.

[0103] A second area within the screen 304 may comprise a gesture capture region 320. The gesture capture region 320 may comprise an area or region that is outside of the display 310 area, and that is capable of receiving input, for example in the form of gestures provided by a user. However, the gesture capture region 320 does not include pixels that can perform a display function or capability.

[0104] A third region of the screen 304 may comprise a configurable area 312. The configurable area 312 is capable of receiving input and has display or limited display capabilities. In embodiments, the configurable area 312 may present different input options to the user. For example, the configurable area 312 may display buttons or other relatable items. Moreover, the identity of displayed buttons, or whether any buttons are displayed at all within the configurable area 312 of a screen 304, may be determined from the context in which the Intelligent TV 100 is used and/or operated.

[0105] In an exemplary touch sensitive screen 304 embodiment, the touch sensitive screen 304 comprises a liquid crystal display extending across at least those regions of the touch sensitive screen 304 that are capable of providing visual output to a user, and a capacitive input matrix over those regions of the touch sensitive screen 304 that are capable of receiving input from the user.

[0106] One or more display controllers 316 may be provided for controlling the operation of the screen 304. The display controller 316 may control the operation of the touch sensitive screen 304, including input (touch sensing) and output (display) functions. The display controller 316 may also control the operation of the screen 304 and may interface with other inputs, such as infrared and/or radio input signals (e.g., door/gate controllers, alarm system components, etc.). In accordance with still other embodiments, the functions of a display controller 316 may be incorporated into other components, such as a processor 364.

[0107] The processor 364 may comprise a general purpose programmable processor or controller for executing application programming or instructions. In accordance with at least some embodiments, the processor 364 may include multiple processor cores, and/or implement multiple

virtual processors. In accordance with still other embodiments, the processor 364 may include multiple physical processors. As a particular example, the processor 364 may comprise a specially configured application specific integrated circuit (ASIC) or other integrated circuit, a digital signal processor, a controller, a hardwired electronic or logic circuit, a programmable logic device or gate array, a special purpose computer, or the like. The processor 364 generally functions to run programming code or instructions implementing various functions of the Intelligent TV 100.

[0108] In support of connectivity functions or capabilities, the Intelligent TV 100 can include a module for encoding/decoding and/or compression/decompression 366 for receiving and managing digital television information. Encoding/decoding compression/decompression module 366 enables decompression and/or decoding of analog and/or digital information dispatched by a public television chain or in a private television network and received across antenna 324, I/O module 348, wireless connectivity module 328, and/or other wireless communications module 332. The television information may be sent to screen 304 and/or attached speakers receiving analog or digital reception signals. Any encoding/decoding and compression/decompression is performable on the basis of various formats (e.g., audio, video, and data). Encrypting module 368 is in communication with encoding/decoding compression/decompression module 366 and enables the confidentiality of all the data received or transmitted by the user or supplier.

[0109] In support of communications functions or capabilities, the Intelligent TV 100 can include a wireless connectivity module 328. As examples, the wireless connectivity module 328 can comprise a GSM, CDMA, FDMA and/or analog cellular telephony transceiver capable of supporting voice, multimedia and/or data transfers over a cellular network. Alternatively or in addition, the Intelligent TV 100 can include an additional or other wireless communications module 332. As examples, the other wireless communications module 332 can comprise a Wi-Fi, Bluetooth™, WiMax, infrared, or other wireless communications link. The wireless connectivity module 328 and the other wireless communications module 332 can each be associated with a shared or a dedicated antenna 324 and a shared or dedicated I/O module 348.

[0110] An input/output module 348 and associated ports may be included to support communications over wired networks or links, for example with other communication devices, server devices, and/or peripheral devices. Examples of an input/output module 348 include an Ethernet port, a Universal Serial Bus (USB) port, Thunderbolt™ or Light Peak interface, Institute of Electrical and Electronics Engineers (IEEE) 1394 port, or other interface.

[0111] An audio input/output interface/device(s) 344 can be included to provide analog audio to an interconnected speaker or other device, and to receive analog audio input from a connected microphone or other device. As an example, the audio input/output interface/device(s) 344 may comprise an associated amplifier and analog-to-digital converter. Alternatively or in addition, the Intelligent TV 100 can include an integrated audio input/output device 356 and/or an audio jack for interconnecting an external speaker or microphone. For example, an integrated speaker and an integrated microphone can be provided, to support near talk or speaker phone operations.

[0112] A port interface 352 may be included. The port interface 352 may include proprietary or universal ports to support the interconnection of the device 100 to other devices or components, such as a dock, which may or may not include additional or different capabilities from those integral to the device 100. In addition to supporting an exchange of communication signals between the device 100 and another device or component, the docking port 136 and/or port interface 352 can support the supply of power to or from the device 100. The port interface 352 also comprises an intelligent element that comprises a docking module for controlling communications or other interactions between the Intelligent TV 100 and a connected device or component. The docking module may interface with software applications that allow for the remote control of other devices or components (e.g., media centers, media players, and computer systems).

[0113] An Intelligent TV 100 may also include memory 308 for use in connection with the execution of application programming or instructions by the processor 364, and for the temporary or long term storage of program instructions and/or data. As examples, the memory 308 may comprise RAM, DRAM, SDRAM, or other solid state memory. Alternatively or in addition, data storage 314 may be provided. Like the memory 308, the data storage 314 may comprise a solid state memory device or devices. Alternatively or in addition, the data storage 314 may comprise a hard disk drive or other random access memory.

[0114] Hardware buttons 358 can be included, for example, for use in connection with certain control operations. One or more image capture interfaces/devices 340, such as a camera, can be included for capturing still and/or video images. Alternatively or in addition, an image capture interface/device 340 can include a scanner, code reader, or motion sensor. An image capture interface/device 340 can include or be associated with additional elements, such as a flash or other light source. The image capture interfaces/devices 340 may interface with a user ID module 350 that assists in identifying users of the Intelligent TV 100.

[0115] The Intelligent TV 100 can also include a global positioning system (GPS) receiver 336. In accordance with embodiments of the present invention, the GPS receiver 336 may further comprise a GPS module that is capable of providing absolute location information to other components of the Intelligent TV 100. As will be appreciated, other satellite-positioning system receivers can be used in lieu of or in addition to GPS.

[0116] Power can be supplied to the components of the Intelligent TV 100 from a power source and/or power control module 360. The power control module 360 can, for example, include a battery, an AC-to-DC converter, power control logic, and/or ports for interconnecting the Intelligent TV 100 to an external source of power.

[0117] Communication between components of the Intelligent TV 100 is provided by bus 322. Bus 322 may comprise one or more physical buses for control, addressing, and/or data transmission. Bus 322 may be parallel, serial, a hybrid thereof, or other technology.

[0118] Firmware and Software:

[0119] An embodiment of the software system components and modules 400 is shown in Fig. 4. The software system 400 may comprise one or more layers including, but not limited to, an operating system kernel 404, one or more libraries 408, an application framework 412, and one or more applications 416. The one or more layers 404-416 can communicate with each other to perform functions for the Intelligent TV 100.

[0120] An operating system (OS) kernel 404 contains the primary functions that allow the software to interact with hardware associated with the Intelligent TV 100. Kernel 404 can include a collection of software that manages the computer hardware resources and provides services for other computer programs or software code. The operating system kernel 404 is the main component of the operating system and acts as an intermediary between the applications and data processing done with the hardware components. Part of the operating system kernel 404 can include one or more device drivers 420. A device driver 420 can be any code within the operating system that helps operate or control a device or hardware attached to or associated with the Intelligent TV 100. The driver 420 can include code for operating video, audio, and/or other multimedia components of the Intelligent TV 100. Examples of drivers include display, camera, flash, binder (IPC), keypad, WiFi, and audio drivers.

[0121] Library 408 can contain code or other components that may be accessed and implemented during the operation of the software system 400. The library 408 may contain one or more of, but is not limited to, an operating system runtime library 424, a TV services hardware abstraction layer

(HAL) library 428, and/or a data service library 432. The OS runtime library 424 may contain the code required by the operating system kernel 404 or other operating system functions to be executed during the runtime of the software system 400. The library can include the code that is initiated during the running of the software system 400.

[0122] The TV services hardware abstraction layer 428 can include code required by TV services either executed in the application framework 412 or an application 416. The TV services HAL library 428 is specific to the Intelligent TV 100 operations that control different functions of the Intelligent TV 100. The TV service HAL library 428 can also be formed from other types of application languages or embodiments of different types of code or formats for code beyond the hardware abstraction layer 428.

[0123] The data services library 432 can include the one or more components or codes to implement components for the data services function. The data services function can be implemented in the application framework 412 and/or applications layer 416. An embodiment of a function of the data services and the type of components that may be included is shown in Fig. 6.

[0124] The application framework 412 can include a general abstraction for providing functionality that can be selected by one or more applications 416 to provide specific application functions or software for those applications. Thus, the framework 412 can include one or more different services, or other applications, that can be accessed by the applications 416 to provide general functions across two or more applications. Such functions include, for example, management of one or more of windows or panels, surfaces, activities, content, and resources. The application framework 412 can include one or more, but is not limited to, TV services 434, TV services framework 440, TV resources 444, and user interface components 448.

[0125] The TV services framework 440 can provide an additional abstraction for different TV services. TV services framework 440 allows for the general access and function of services that are associated with the TV functionality. The TV services 436 are general services provided within the TV services framework 440 that can be accessed by applications in the applications layer 416. The TV resources 444 provide code for accessing TV resources 444 including any types of storage, video, audio, or other functionality provided with the Intelligent TV 100. The TV resources 444, TV services 436, and TV services framework 440 provide for the different implementations of TV functionality that may occur with the Intelligent TV 100.

[0126] One or more user interface components 448 can provide general components for display of the Intelligent TV 100. The user interface components 448 might be general components that may

be accessed by different applications provided in the application framework 412. The user interface components 448 may be accessed to provide for panels and silos as described in conjunction with Fig. 5.

[0127] The applications layer 416 can both contain and execute applications associated with the Intelligent TV 100. Applications layer 416 may include one or more of, but is not limited to, a live TV application 452, a video on demand application 456, a media center application 460, an application center application 464, and a user interface application 468. The live TV application 452 can provide live TV over different signal sources. For example, the live TV application, 452, can provide TV from input from cable television, over air broadcasts, from satellite services, or other types of live TV services. Live TV application 452 may then present the multimedia presentation or video and audio presentation of the live television signal over the display of the Intelligent TV 100.

[0128] The video on demand application 456 can provide for video from different storage sources. Unlike Live TV application 452, video on demand 456 provides for display of videos that are accessed from some memory source. The sources of the video on demand can be associated with users or with the Intelligent TV 100 or some other type of service. For example, the video on demand 456 may be provided from an iTunes library stored in a cloud, from a local disc storage that contains stored video programs, or from some other source.

[0129] The media center application 460 can provide applications for different types of media presentation. For example, the media center 460 can provide for displaying pictures or audio that is different from, but still accessible by the user and different from live TV or video on demand. The media center 460 allows for the access of different sources to obtain the media in the display of such media on the Intelligent TV 100.

[0130] The application center 464 allows for the provision, storage and use of applications. An application can be a game, a productivity application, or some other application generally associated with computer systems or other devices, but may be operated within the Intelligent TV 100. An application center 464 may obtain these applications from different sources, store them locally and then execute those types of applications for the user on the Intelligent TV 100.

[0131] User interface application 468 provides for the specific user interfaces associated with the Intelligent TV 100. These user interfaces can include the silos and panels that are described in Fig. 5. An embodiment of the user interface software 500 is shown in Fig. 5. Here the application framework 412 contains one or more code components which help control the user interface events

while one or more applications in the applications layer 416 affects the user interface use for the Intelligent TV 100. The application framework 412 can include a silo transition controller 504 and/or an input event dispatcher 508. There may be more or fewer code components in the application framework 412 than those shown in Fig. 5. The silo transition controller 504 contains the code and language that manages the transitions between one or more silos. A silo can be a vertical user interface feature on the Intelligent TV 100 that contains information for a user. The transition controller 504 can manage the changes between two silos when an event occurs in the user interface. The input event dispatcher 508 can receive user interface events that may be received from the operating system and provided to the input event dispatcher 508. These events can include selections of buttons on a remote control or on the TV or other types of user interface inputs. The input event dispatcher 508 may then send these events to a silo manager 532 or panel manager 536 depending on the type of the event. The silo transition controller 504 can interface with the silo manager 532 to affect changes in the silos.

[0132] The applications layer 416 can include a user interface application 468 and/or a silo application 512. The application framework 416 can include more or fewer user interface applications as necessary to control the user interface of the Intelligent TV 100 than those shown in Fig. 5. The user interface application 468 can include a silo manager 532, a panel manager 536, and one or more types of panels 516-528. The silo manager 532 manages the display and/or features of silos. The silo manager 532 can receive or send information from the silo transition controller 504 or the input event dispatcher 508 to change the silos displayed and/or to determine types of input received in the silos.

[0133] A panel manager 536 is operable to display panels in the user interface to manage transitions between those panels or to affect user interface inputs received in the panel. The panel manager 536 may thus be in communication with different user interface panels such as a global panel 516, a volume panel 520, a settings panel 524, and/or a notification panel 528. The panel manager 536 can display these types of panels depending on the inputs received from the input event dispatcher 508. The global panel 516 may include information that is associated with the home screen or top level hierarchal information for the user. A volume panel 520 may display information about an audio volume control or other settings for volume. A settings panel 524 can include information displayed about the settings of the audio or video, or other settable characteristics of the Intelligent TV 100. A notification panel 528 can provide information about notifications to a user. These notifications can be associated with information, such as, video on

demand displays, favorites, currently provided programs, or other information. Notifications can be associated with the media or with some type of setting, or operation or the Intelligent TV 100. The panel manager 536 may be in communication with the panel controller 552 of the silo application 512.

[0134] The panel controller 552 may operate to control portions of the panels of the types described previously. Thus, the panel controller 552 may be in communication with a top panel application 540, an application panel 544, and/or bottom panel 548. These types of panels may be differently displayed in the user interface of the Intelligent TV 100. The panel control thus may be based on the configuration of the system or the type of display being used currently, put the types of panels 516-528 into a certain display orientation governed by the top panel application 540, application panel 544, or bottom panel application 548.

[0135] An embodiment of the data service 432 and the operation of the data management is shown in Fig. 6. The data management 600 can include one or more code components that are associated with different types of data. For example, there may be code components within the data service 432 that execute and are associated with video on demand, the electronic program guide, or media data. There may be more or fewer types of data service 432 components than those shown in Fig. 6. Each of the different types of data may include a data model 604-612. The data models govern what information is to be stored and how that information will be stored by the data service. Thus, the data model can govern regardless of where the data comes from, how the data will be received or managed within the Intelligent TV system. Thus, the data model 604, 608, and/or 612, can provide a translation ability or affect the ability to translate data from one form to another to be used by the Intelligent TV 100.

[0136] The different types of data services (video on demand, electronic programming guide, media) each have a data subservice 620, 624, and/or 628 that is in communication with one or more internal and/or external content provider modules 616. The data subservices 620, 624, and 628 that communicate with the content provider modules 616 to obtain data that may then be stored in databases 632, 636, and 640. The subservices 620, 624, and 628 may communicate with and initiate or enable one or more source plug-ins 644, 648, and 652 to communicate with the content provider. For each content provider 616, there may be a different source plug-in 644, 648, and 652. Thus, if there is more than one source of content for the data, each of the data subservices 620, 624, and 628 may determine and then enable or initiate a different source plug-in 644, 648, and/or 652. The content provider modules 616 may also provide information to a resource arbitrator 656 and/or

thumbnail cache manager 660. The resource arbitrator 656 may operate to communicate with resources 664 that are external to the data service 432. Thus, the resource arbitrator 656 may communicate with cloud based storage, network based storage, or other types of external storage in the resources 664. This information may then be provided through the content provider module 616 to the data subservices 620, 624, 628. Likewise, a thumbnail cache manager 660 may obtain thumbnail information from one of the data subservices 620, 624, 628 and store that information in the thumbnail database 668. Further the thumbnails cache manager 660 may extract or retrieve that information from the thumbnails database 668 to provide to one of the data subservices 620, 624, 628.

[0137] An exemplary content aggregation architecture 1300 is shown in Fig. 13. The architecture can include a user interface layer 1304 and a content aggregation layers 1308. The user interface layer 1304 may include a TV application 1312, media player 1316, and application(s) 1320. The TV application 1312 enables the viewer to view channels received via an appropriate transmission medium, such as cable, satellite, and/or the Internet. The media player 1316 views other types of media received via an appropriate transmission medium, such as the Internet. The application(s) 1320 include other TV-related (pre-installed) applications, such as content viewing, content searching, device viewing, and setup algorithms, and coordinates with the media player 1316 to provide information to the viewer.

[0138] The content source layer 1308 includes, as data services, a content source service 1328, a content aggregation service 1332 and a content presentation service 1336. The content source service 1328 can manage content source investigators, including local and/or network file system(s), digital network device manager (which discovers handheld and non-handheld devices (e.g., digital media servers, players, renderers, controllers, printers, uploaders, downloaders, network connectivity functions, and interoperability units) by known techniques, such as a multicast universal plug and play or UPnP discovery techniques, and, for each discovered device, retrieves, parses, and encodes device descriptors, notifies the content source service of the newly discovered device, and provides information, such as an index, on previously discovered devices), Internet Protocol Television or IPTV, digital television or DTV (including high definition and enhanced TV), third party services (such as those referenced above), and applications (such as Android applications).

[0139] Content source investigators can track content sources and are typically configured as binaries. The content source service 1328 starts content source investigators and maintains open

and persistent channels for communications. The communications include query or command and response pairs. The content aggregation service 1332 can manage content metadata fetchers, such as for video, audio, and/or picture metadata. The content presentation service 1336 may provide interfaces to the content index 1340, such as an Android application interface and digital device interfaces.

[0140] The content source service 1328 can send and receive communications 1344 to and from the content aggregation service 1332. The communications can include notifications regarding new and removed digital devices and/or content and search queries and results. The content aggregation service 1332 can send and receive communications 1348 to and from the content presentation service 1336 including device and/or content lookup notifications, content-of-interest advisories and notifications, and search queries and results.

[0141] When a search is performed, particularly when the user is searching or browsing content, a user request may be received from the user interface layer 1300, by the content presentation service 1336, which responsively opens a socket and sends the request to the content aggregation service 1332. The content aggregation service 1332 first returns results from the local database 1340. The local database 1340 includes an index or data model and indexed metadata. The content source service 1328 further issues search and browse requests for all content source investigators and other data management systems. The results are forwarded to the content aggregation service 1332, which updates the database 1340 to reflect the further search results and provides the original content aggregation database search results and the data updates, reflecting the additional content source service search results, over the previously opened socket to the content presentation service 1336. The content presentation service 1336 then provides the results to one or more components in the user interface layer 1300 for presentation to the viewer. When the search session is over (e.g., the search session is terminated by the user or by an action associated with the user), the user interface layer 1300 disconnects the socket. As shown, media can be provided directly by the content aggregation service 1332 to the media player 1316 for presentation to the user.

[0142] Remote Control:

[0143] A handheld remote control can be provided to enable user interaction with the Intelligent TV 100. An exemplary handheld remote control is shown in Figs. 7-9. The remote control 700 can include one or more of, but is not limited to, top, side and bottom housings 704, 708, and 712, an (on/off) power button 716, an input source button 720 (to select input source such as Live TV, video on demand, media center, application center, high definition multimedia interface or HDMI,

component or COMP, audio/Video or A/V, digital or analog television or DTV/ATV, and video graphics array (VGA)), a (volume) mute button 724, a Live TV button 728 (to activate or select the Live TV silo), a video on demand (VOD) button 732 (to activate or select the video on demand silo), a media center button 736 (to activate or select the media center application or silo, which access various types of media such as music, TV programming, videos, and the like), an application center button 740 (to activate or select the application center application or silo), a global panel button 744, an application panel button 748, a back button 752 (to select a prior user operation or Intelligent TV state and/or navigate up a hierarchy of any displayed image or object(s) (in which case the back button 752 does not navigate within application panels or across application silos), a play button 756 (to play or pause media), a D-pad 760 (which includes north, east, west, and south directional arrows to navigate among displayed images and/or move between levels of an application's or object's hierarchy such as application view navigation, panel navigation, and collection navigation), an OK (or select) button 764 (to select a highlighted displayed image (such as displayed speed control, rewind, forward, play, and pause objects and/or objects on menu bar or in a menu box) and/or navigate down a hierarchy of any displayed image or object(s)), a rocker-type volume-up and volume-down button 768 (to adjust the volume), a menu/guide button 772 (to select for display a menu or guide of programming), a 0-9 (number) button 776 (to display a number pad on the TV screen), a settings button 780, which launches an application to access current and change TV settings (such as channel settings and settings used to adjust picture and sound effects (e.g., image mode (e.g., standard, playground, game, cinema, concert, and studio), brightness, contrast, saturation, color temperature, energy savings, 3D noise reduction, hue, sharpness, zoom mode (e.g., full screen, standard, smart zoom, and dot-to-dot), picture position, 3D mode, for picture, and sound retrieval system or SRS TruSurround, sound mode (e.g., standard, live 1, live 2, theatre, music, speech, user equalizer mode, Left/Right speaker balance, auto volume control, Sony/Philips Interconnect Format or S/PDIF (off, auto, pulse code modulation or PCM) for sound) and system settings (such as system (e.g., selected language for graphical user interface, user geographical and/or geopolitical location information, input method, area settings, and sleep time), network (e.g., WiFi, WiFi hotspot, WiFi direct, Point-to-Point Protocol over Ethernet or PPPoE (asymmetric digital subscriber line or ADSL), Ethernet) settings (e.g., enabled and disabled and selected and non-selected) and information (e.g., network information (e.g., electronic address such as Internet Protocol or IP address, subnet mask, gateway, domain name server information, domain name, Media Access Control or MAC address, service set identification or SSID, security

information, and password information) and inline status), manage applications (e.g., currently installed applications, currently executing applications, and internal and external computer readable medium usage), and view user information regarding the Intelligent TV 100)), a rocker-type channel-up and channel-down button 784 (to increment or decrement the selected channel), and first, second, third and fourth hotkeys 788, 792, 794, and 796, and/or a moveable joystick 900 on a bottom of the remote control 700. The first, second, third, and fourth hotkeys are generally assigned different colors, which color indexing is depicted as visual indicia on a selected panel to show the currently assigned function, if any, for each hotkey. As can be seen, the actuator layout can provide a highly efficient, satisfactory, and easily usable experience to the end user.

[0144] Unlike the functional associations and functions of many of the actuators, those of some of the actuators are not readily apparent. A number of examples will now be discussed by way of illustration.

[0145] The media center button 736, when selected, can provide information regarding music, videos, photographs, collections or groupings of music, videos, and/or photographs, and internal and external computational devices (such as personal computers, laptops, tablet computers, wireless phones, removable computer readable media, and the like), which can be grouped in a selected manner (such as favorites, most recently viewed, most watched or viewed, and most recently added). The information can include previews (which can include selected portions of the media content, duration, file size, date created, date last watched, times watched or viewed, and audio and/or video format information).

[0146] The application center button 740, when selected, may provide information regarding pre-installed and downloaded applications. Unlike downloaded applications, pre-installed applications cannot be removed by the user or manually updated. Exemplary pre-installed applications include a web browser, settings control, and content search algorithms. By way of illustration, the application center button 740 can provide a scrollable graphical grid of icons (each icon being associated with an application) currently available in the application center.

[0147] The global panel button 744, when selected, can provide the user, via one or more panels or windows, with access to one or more of, but not limited to, silos, notifications, a web browser, system settings, and/or information associated therewith. For example, the global panel button 744 can enable the user to determine what external devices are currently connected to and/or disconnected from the Intelligent TV 100, determine what inputs (e.g., HDMI ports) are currently available for connecting to external devices, determine a connection and/or operational status of a

selected external device and/or network (e.g., WiFi connected, Ethernet connected, and offline), assign a custom (or user selected) name to each input source, determine what content is currently being offered on Live TV, on demand, the media center, and/or the application center, access vendor messages and notifications to the user (e.g., system and/or application updates are available), activate the Internet browser, and/or access shortcuts on a displayed shortcut bar to more frequently used and desired applications. Common shortcuts are Internet browser (e.g., Internet search engine), system settings, and notifications. The common types of panels are for information (which is typically information related to a currently displayed image and/or content (e.g., title, date/time, audio/visual indicator, rating, and genre), browse requests, and/or search requests (such as search term field)). Each of the panel types may include a panel navigation bar, detailed information or relevant content to the panel function, operation and/or purpose, and a hotkey bar (defining currently enabled functional associations of hotkeys).

[0148] The application panel button 748, when selected, can display an application window or panel. One application panel may be an information panel regarding a selected (pre-installed or previously downloaded) application icon. The information panel can identify one or more of the selected application, provide a description of the functionality (including application developer and/or vendor, version, release, and/or last update date and a category or type of application based on the application's functionality) and user ratings and/or degree of other user(s), downloading the application (e.g., a star rating assigned based on one or more of the foregoing inputs), provide the option to launch, remove, update, and add to favorites the identified application, and provide a listing of selectable links of other (not yet downloaded) recommended applications that provide similar functionality to the identified application. The latter listing can, in turn, provide a description of the functionality (including application developer and/or vendor, version, release, and/or last update date and a category or type of application based on the application's functionality) and user ratings and/or degree of other user downloading the application (e.g., a star rating assigned based on one or more of the foregoing inputs).

[0149] The functions of the first, second, third, and fourth hotkeys 788, 792, 794, and 796 can change depending on system state, context, and/or, within a selected screen and/or panel, based on a content or currently selected portion of (or relative cursor position on) the screen. Commonly, a currently assigned function of any of the first, second, third, and fourth hotkeys 788, 792, 794, and 796 depends on a currently accessed silo and/or panel (with which the user is currently interacting within the silo). In other words, a first function of one of the first, second, third, and fourth hotkeys

788, 792, 794, and 796 is activated by the respective hotkey in a first system state while a different second function is activated by the respective hotkey in a different second system state. In another example, a third function of one of the first, second, third, and fourth hotkeys 788, 792, 794, and 796 is activated by the respective hotkey when a user focus (or currently selected cursor position or screen portion) is at a first screen position while a different fourth function is activated by the respective hotkey when a user focus (or currently selected cursor position or screen portion) is at a different second screen position. The first screen position can, for instance, be within an icon while the second screen position is outside of the icon. Hotkey functionality that could be enabled when in the first screen position may be “configure” and “remove” and disabled is “add,” and, when in the second position hotkey functionality enabled can be “add” and disabled is “configure” and “remove.” Generally, the states of hotkeys can include normal (for enabled actions or functions), disabled (when an action or function is temporarily disabled), pressed (when selected by a user to command an action or function to be performed), and unavailable (when no association between the hotkey and an action or function is currently available). While examples of hotkey functions are discussed below, it is to be understood that these are not intended to be exhaustive or limiting examples.

[0150] The first hotkey 788, when selected in a first system state, can enable the user to assign, change, or edit a name of an input source. It is typically enabled only when the input source of HDMI, Comp/YPbPr (e.g., component video cables), video output, and VGA is in focus. When selected in a second system state, the first hotkey 788 can return the user to a top of a scrollable collection of objects, such as application icons.

[0151] The second hotkey 792 may show all or less. In other words, the hotkey 792 can allow the user to show all inputs, including the unconnected/undetected ones and to hide the unconnected/undetected inputs, e.g., to expand and collapse the silo/input list. Each input source can have one of two states, namely connected/detected and unconnected/undetected. Some input sources, including Live TV, video on demand, media center, and application center are always connected/detected.

[0152] The moveable joystick 900 on the bottom of the remote control 700, when manipulated, can cause a displayed image on the Intelligent TV 100 screen to be displaced a proportional amount. In other words, the displayed image is displaced substantially simultaneously with displacement of the joystick 900 within the joystick aperture 904 in the bottom housing 712 of the remote control. As shown in Figs. 9B-C, the joystick 900 moves or slides between forward and reverse positions.

Releasing the joystick 900 causes the joystick 900 to return to the center position of Fig. 9A, and the window to move or slide upwardly (when the joystick is released from the joystick position of Fig. 9B) or downwardly (when the joystick is released from the joystick position of Fig. 9C) until it disappears from view as shown in Fig. 11A. The effect on the screen of the Intelligent TV 100 is shown in Figs. 11A-C. In Fig. 11A, video content, such as TV programming, a video, movie, and the like, is being displayed by front surface of the screen 212. In Fig. 11B, the joystick 900 is moved or slid to the upper position of Fig. 9B, and a drop down window or panel 1100 moves or slides down (at the substantially the same rate of joystick 900 movement) at the top of the screen 212. In Fig. 11C, the joystick 900 is moved or slid to the lower position of Fig. 9C, and a drop up window or panel 1100 moves or slides up (at the substantially the same rate of joystick 900 movement) at the bottom of the screen 212. The window 1100 partially covers the video content appearing on the remainder of the screen 212 and/or causes a portion of the screen 212 displaying video content to move and/or compress up or down the height of the window 1100.

[0153] The window 1100 can include one or more of information (which is typically information related to a currently displayed image and/or content (e.g., panel navigation bar, detailed information (e.g., title, date/time, audio/visual indicator, rating, and genre), and hotkey bar (defining current functional associations of hotkeys)), browse requests, and/or search requests. Commonly, the window 1100 includes suitable information about the content (such as name, duration, and/or remaining viewing duration of content), settings information, TV or system control information, application (activation) icons (such as for pre-installed and/or downloaded applications such as application center, media center and Web browser), and/or information about input source(s). When the joystick 900 is in either the forward or reverse position, the user can select an actuator on the front of the remote control, such as the OK button 764, and be taken, by displayed images on the screen 212, to another location in the user interface, such as a desktop. This process can be done in a nonintrusive manner and without affecting the flow of content that is pushed up or down. The joystick 900 could be moved, additionally or differently, from side-to-side to cause the window to appear at the left or right edge of the screen 212.

[0154] An alternative actuator configuration is shown in Fig. 10. The actuators are substantially the same as those of Figs. 7-9 except that the social network button 1000, when selected, can automatically select content and publish, via a social network service or other social media, the content to a social network or online community. User or viewer comments and/or other messages can be included in the outbound message. For example, all or one or frames or portions of media

content (such as a video, music, a photograph, a picture, or text) can be provided automatically to a predetermined or selected group of people via Linked-In™, MySpace™, Twitter™, YouTube™, DailyMotion™, Facebook™, Google+™ or Second Life™. The user, upon activating the button 1000 could, in response, select a social forum or media upon which the selected content (which is the content displayed to the user when the social network button 1000 is activated) is to be posted and/or a predetermined group within that social media to which the content is to be posted.

Alternatively, these selections could be preconfigured or preselected by the user.

[0155] The social network button can also be used to “turn up” or “turn down” a social volume visualization. The Intelligent TV 100 can create dynamically a visualization of aggregated connections (and inbound and/or outbound messages) from a variety of social networks. The aggregation (and inbound and outbound messages) can be depicted graphically on the screen as a volume of connections to influence the viewer user. With a social volume visualization, selected contents of each linked social network profile of a social contact (and inbound and/or outbound messages from or to the linked social network contact and/or current activity of the social contact (such as watching the same programming or content the viewer is currently watching) can be presented in a separate tile (or visually displayed object). The size of the tile can be related to any number of criteria, including a relationship of the linked social contact (e.g., a relative degree of importance or type of relationship can determine the relative size of the tile, a degree of influence of the linked social contact to the current viewer, a geographic proximity of the linked social contact to the current viewer, a degree to which the currently provided media content is of interest to both the viewer and linked social contact (e.g., both parties enjoy war movies, murder mysteries, musicals, comedies, and the like), an assigned ranking of the linked viewer by the viewer, a type of social network type linking the viewer with the linked social contact, a current activity of the social network contact (e.g., currently watching the same content that the viewer is currently watching), a current online or offline status of the linked social contact, and a social network grouping type or category to which both the viewer and linked social contact belong (e.g., work contact, best friend, family member, etc.).

[0156] The viewer can designate a portion of the screen to depict the social network aggregation. By turning the social volume up (+) or down (-), the viewer can increase the size and/or numbers of linked contact tiles provided to the viewer. In other words, by increasing the social volume the viewer can view, access, and/or push more social content from those of his or her social networks associated with him or her in a memory of the Intelligent TV 100. By decreasing the social volume,

the viewer can view, access, and/or push less social content from his or her associated social networks. By selecting the mute button 724, the viewer can stop or pause any interactivity with his or her associated social networks (e.g., inbound or outbound messages). Social volume and/or mute can be separated into two (or more) volume settings for outbound and inbound social network activity. By way of illustration, a first volume setting, control, and/or button can control the volume for outbound social network activity (e.g., outbound social messages) while a second (different) volume setting, control, and/or button can control the volume for inbound social network activity (e.g., inbound social messages). By way of further illustration, a first mute setting, control, and/or button can stop or pause outbound social network activity (e.g., outbound social messages) while a second (different) mute setting, control, and/or button can stop or pause inbound social network activity (e.g., inbound social messages).

[0157] A functional block diagram of the remote control is shown in Fig. 12. The remote control 700 includes a controller 1208 to control and supervise remote control operations, optional wireless (RF) transceiver 1224 and antenna 1244 to send and receive wireless signals to and from the Intelligent TV 100 and other external components, optional infrared emitter 1228 to emit infrared signals to the Intelligent TV 100, optional light emitting diode or LED driver 1232 to control LED operation to provide video-enabled feedback to the user, actuators 1220 (including the various buttons and other actuators discussed above in connection with Figs. 7 and 10), and joystick 900, all interconnected via a bus 1248. An on board power source 1200 and power management module 1204 provide power to each of these components via power circuitry 1240. The infrared emitter 1228 and receiver (not shown) on the Intelligent TV system 100 can be used to determine a displayed object illuminated by the infrared signal and therefore adjust the displayed image, for example to indicate a focus of the user (e.g., illuminate a displayed object or show cursor position relative to displayed objects on the screen) and to determine and activate a desired command of the user. This can be done by tracking a position of the remote control in relation to infrared tracking reference points (e.g., a sensor bar or infrared LED's) positioned on or adjacent to the screen of the Intelligent TV 100. Motion tracking can further be augmented using position information received from a multi-axis gyroscope and/or accelerometer on board the remote control (not shown).

[0158] Fig. 14 shows a data service 432 and the operation of the data management 1400 according to an embodiment. Similar to data management 600 shown with respect to Fig. 6, data management 1400 is supported by data service 432 according to another embodiment.

[0159] The data management 1400 includes one or more code components that are associated with different types of data. For example, code components may include codes associated with video on demand (VOD), electronic program guide (EPG), media data, and/or other codes. Code components are executable and a part of data service 432. Data management may associate and access the code components as needed.

[0160] Each of the different types of data may include a data model (*i.e.*, VOD data model 1404, EPG data model 1408, and media data model 1412). The data models define what and how information is to be stored by the data service. Thus, the data model can be defined to accommodate a variety of data sources without discriminating as to where the data comes from and how the data will be received or managed within the Intelligent TV system. Thus, the data models provide translation ability and/or affect the ability to translate data from one form to another to be used by the Intelligent TV 100.

[0161] The different types of data services (video on demand, electronic programming guide, media) each have a data subservice component (*i.e.*, VOD subservice 1420, EPG subservice 1424, and media subservice 1428) that is in communication with one or more internal and/or external sources. Each data subservice component is in communication with the corresponding source plugins (*i.e.*, VOD source plugins 1444a-n for VOD subservice 1420, EPG source plugins 1448a-n for EPG source subservice 1424, and media source plugins 1452a-n for media source subservice 1428).

[0162] In one implementation, the corresponding source plugins 1444a-n, 1448a-n, and 1452a-n can operate within the data management 1400 to interface, communicate, and/or query with external sources to gather data from these external sources. Plugins that communicate with external sources may be internally configured and provided by Intelligent TV 100. Plugins may also be provided and configured by third-parties such as an official plugin for the service provided by the external source or another third party which has developed a suitable plugin for Intelligent TV 100 to communicate with the external source using an API or other liked platform for the external source. Plugins are developed to interface with the corresponding subservice in Intelligent TV 100 for data management 1400.

[0163] For example, each of VOD source plugins 1444a-n may be configured to communicate with one specific VOD source or some plurality of VOD sources. Some VOD sources include dedicated media sources (*i.e.*, over the internet), such as Amazon Instant Video, AOL Video, Blockbuster, DailyMotion, Google Play, Hulu, Joost, IPTV, iTunes Store, MetaCafe, NetFlix,

Pandora, PlayStation Store, Vimeo, Voddler, Vudu, WatchESPN, YouTube, Xbox Video, or other dedicated distribution platforms and other content websites. Other VOD sources may include over-the-air or cable VOD sources with analog or digital feeds. Intelligent TV 100 may also access internal data storage (*i.e.*, data storage 314) or other external storage (*i.e.*, digital media library 148) that contains additional VOD media. Further, devices connected to Intelligent TV 100 (*i.e.*, devices 168 or other devices accessible to Intelligent TV 100 over network 132) may also contain additional VOD media. Each of these media sources may have a corresponding VOD source plugin developed that can communicate with the specific media source. Further, third parties may develop a VOD source plugin that works with a number of media sources. Communication between the VOD source plugin may include from simply requesting and displaying a requested media or may include accessing the media library of the media source (*i.e.*, listing new updates or additions, recommended media, listing media by genres, and/or other functions) and other functions.

[0164] In another example, EPG source plugins 1448a-n include plugins that are configured to communicate with various external sources. Exemplary EPG sources include analog or digital feeds from the content provider, the internet, and/or other sources.

[0165] Content provider modules (*i.e.*, over-the-air, cable, and/or satellite channels) may have EPG information embedded with the content feed delivered to the user (*i.e.*, as a subchannel of the main content feed). EPG information that is embedded with the content feeds by the content provider modules may contain only limited information due to technical (*i.e.*, limited bandwidth) and content (*i.e.*, rights to third-party generated EPG contents) limitations with embedding EPG information with content feeds.

[0166] The Internet is also a source of EPG information. A variety of EPG information is distributed over the Internet for equipment or computers that are directly connected to the Internet. EPG information over the Internet usually includes more detailed information regarding TV programming than with embedded EPG information in content feeds (*i.e.*, detailed description of programming, reviews of programming, schedule, and future programmings). Further, EPG information over the Internet may also contain non-text contents such as preview images, videos, and sounds.

[0167] Other sources may also provide EPG information. In some instances, a collection of feeds (*i.e.*, cable or satellite TV) may contain a specific channel dedicated to displaying EPG information. These EPG channels may contain video display of an analog or digital signal containing the EPG

information (i.e., programming schedule in chart form). Other instances may include a feed containing EPG information in list form (i.e., for set-top boxes or digital video recorders (DVRs)).

[0168] An exemplary EPG source plugin receives and processes EPG information from a designated EPG information source. The EPG source plugin is configured to process the received EPG information according to the specific format of the corresponding designated EPG information source. For example, EPG information embedded with content feeds may contain limited information that are ordered in a pre-defined format (i.e., the order of other relevant information such as title, time, description, and/or other information about the programming). EPG information taken from an internet source may contain more detailed information but may require parsing to organize the relevant information within data management 1400. The EPG source plugin may further organize or translate the information received into a common data format to be stored in database 1436. In one implementation, EPG source plugins 1448a-n may convert or translate the received EPG information into a consistent data model for data management 1400 (i.e., EPG data model 1408) for consistency within data management 1400 and other reasons.

[0169] Media source plugins 1452a-n are configured to interface or communicate with the various media sources available to Intelligent TV 100. For example, media sources may include media content in connected devices 168 or other devices or media contents that are accessible to Intelligent TV 100 (i.e., via network 132). Each media source may contain content in a specific format (i.e., DVD, BluRay, and other digital or analog formats). Further, media from live feeds (i.e., from over-the-air broadcast, cable or satellite feeds, Internet feeds) are content in a live format specific to the type of feed. Further, media content and feeds from the various sources may also include metadata information embedded with these contents (i.e., close captions, subtitles, and other information). In one implementation, media source plugins 1452a-n are configured to receive media contents and information for one or more of these media sources in a specific format.

[0170] Similar to as discussed with respect to the EPG source plugins 1448a-n, VOD source plugins 1444a-n and media source plugins 1452a-n may need to translate the various different media format and information received into a consistent model. In one implementation, information related to the VOD or media received from a corresponding VOD source plugin or media source plugin can be translated according to the respective VOD data model 1404 or media data model 1412 and stored into the respective storage 1432 or storage 1440. The VOD or media content received can be stored directly in the respective storage 1432 or storage 1440 or may be sent to the respective subservice without being stored. The format of the VOD or media can be decoded and

played by Intelligent TV 100 directly using the information regarding format received. In another implementation, the VOD or media content received may be converted into a consistent format for all contents. This may be helpful for various display configurations (i.e., displaying as thumbnails, previews, etc.) depending on the hardware configurations and capabilities of Intelligent TV 100.

[0171] In a further embodiment, each source plugin may communicate with a plurality of different service providers and may be grouped by criteria such as geographic area. For example, an EPG source plugin may be configured to work with EPG sources in a country (i.e., Canada providing feeds in English and French) or a localized region (i.e., southwestern U.S. providing feeds in English and Spanish) or feeds limited to only local stations in an area.

[0172] The data model, subservice, and source plugins for VOD, EPG, and media contents are discussed above according to an embodiment. In alternate embodiments, additional features may be included consistent with the framework discussed as known or may be derived by one skilled in the art.

[0173] Data management 1400 further includes a plurality of content provider modules 1416. Content provider modules 1416 works with the various data subservices (i.e., VOD subservice 1420, EPG subservice 1424, and media subservice 1428) to provide customized media data and information for applications 416 in Intelligent TV 100. Specifically, content provider modules may serve applications 416 in Intelligent TV 100 with customized data and information related to live TV 452, VOD 456, media 460, application center 464, user interface 468, and/or other applications. Further, content provider modules 1416 may perform additional functions to organize or provide data in support of other content provider modules. Exemplary content provider modules include EPG data provider 1416a, media data provider 1416b, media browser 1416c, media scanner 1416d, and thumbnail engine 1416e.

[0174] In one example, EPG data provider 1416a is configured to serve applications with EPG information in a read-only format. In one implementation, EPG data provider 1416a works with EPG subservice 1424 to serve EPG information collected and stored in storage 1436. A relevant application in applications 416 may request EPG data provider 1416a to provide relevant EPG information as needed by the relevant application. For example, live TV 452 may display relevant EPG as a header when displaying a programming. Media center 460 may display relevant EPG information for selected programming when displayed or selected by the user via user interface 468.

[0175] In another example, media data provider 1416b is configured to provide personalized media metadata and stores the personalized media metadata into a database for further access. In

one implementation, the personalized media metadata is stored in a sqlite database. The user may set up a personalized profile or preference for types, genres, or other preferred characteristics of media. The user may access and set up the profiles in a corresponding application. Alternatively, Intelligent TV 100 may contain pre-defined profiles and/or may automatically build a profile for a user by analyzing the user's past viewing preferences progressively. Media data provider 1416b may work with media subservice 1428, VOD subservice 1420, and/or other subservices. For example, media data provider 1416b uses the metadata regarding media collected by media subservice 1428 in order to generate the personalized media metadata.

[0176] Media browser 1416c is configured to provide a view of the media sources in real-time. Further media browser 1416c maintains a list of the connected media sources. In one implementation, media browser 1416c does not require any permanent storage as media browser 1416c is configured to collect real-time information. Media browser 1416c may work with VOD subservice 1420, media subservice 1428, and/or other subservices to gather information pertaining to a list of media sources and/or contents available. For example, media subservice 1428 may receive information pertaining to connected devices 168 and whether the connected devices 168 have accessible media contents via the respective media source plugins 1452a-n. Media browser 1416c may maintain a list of the connected devices 168 in real-time and may be accessible by the user directly or from other applications. In one implementation, media browser 1416c may run in the background or may be periodically run to update the list in real-time. This allows Intelligent TV 100 to have a list of connected media sources available without additional wait time to poll device information when the information is needed.

[0177] Media scanner 1416d is configured to provide a table of media using data retrieved from media browser 1416c. In one implementation, media scanner 1416d rescans the information periodically and updates the table of media. Media scanner 1416d may provide the table of media for applications such as media center 460 to display to the user the accessible media. In another implementation, media scanner 1416d may also work with EPG subservice 1424 to further populate the media table with updated EPG information.

[0178] Thumbnail engine 1416e is configured to collect and provide thumbnails for media, applications, and other contents. For example, thumbnail engine 1416e may collect or capture (i.e., screen capture a scene from available media) from a variety of subservices providing content or media (i.e., VOD subservice 1420, media subservice 1428). Thumbnail engine may also collect

available thumbnails from EPG information via EGP subservice 1424. In one implementation, thumbnail engine 1416e may also collect and provide short video previews or scenes of media.

[0179] In an embodiment, thumbnail engine 1416e may also communicate with thumbnail cache manager 1460 and thumbnail storage 1468. Thumbnails for various programming may be needed for a number of applications for displaying programming information. Thumbnail cache manager 1460 may separately provide pre-cached thumbnails for the efficiency of displaying graphical thumbnails which consist of larger data blocks than text data such as EPG information. Thumbnail engine 1416e may also facilitate creating and maintaining the thumbnail cache for applications.

[0180] Resource arbitration 1456 may operate and facilitate communication between the subservices, source plugins, and various resources of Intelligent TV 100 that are external to data service 432. Thus, the resource arbitrator 1456 may communicate with cloud and/or network based storages 1461 or other types of external storage in the resources. In one implementation, the information from the storages 1461 may be accessible through the content provider modules 1416 to the sources plugins or the subservices as applications are accessible by Intelligent TV 100. In another implementation, the source plugins and the subservices may directly access storage resources through resource arbitrator 1456 depending on the hardware and for data efficiency reasons.

[0181] Resource arbitrator 1456 may further access other resources of the Intelligent TV 100, such as video hardware 1462, display 1463, and other resources. For example, resource arbitrator 1456 may directly access video hardware 1462 and display 1463 to decode and display programming having a variety of encodings (*i.e.*, DVD, BluRay, various VOD native formats).

[0182] Fig. 15 shows a flow diagram for processing received media or data from an external content provider 1500 for data management 1400 according to an embodiment.

[0183] Process 1500 starts by loading a source plugin for processing 1510. Data management 1400 may include a number of plugins defined for a number of corresponding external content and/or data providers. Exemplary source plugins may include VOD source plugins 1444a-n, EPG source plugins 1448a-n, and media source plugins 1452a-n. Each source plugin is configured to communicate with and receive information from one or more specific content and/or data provider. For example, VOD source plugins 1444a-n may communicate with dedicated media sources (*i.e.*, over the internet), such as Amazon Instant Video, AOL Video, Blockbuster, Dailymotion, Google Play, Hulu, Joost, IPTV, iTunes Store, MetaCafe, NetFlix, Pandora, PlayStation Store, Vimeo, Voddler, Vudu, WatchESPN, YouTube, Xbox Video, or other dedicated distribution platforms and

other content websites. Other VOD sources may include over-the-air or cable VOD sources with analog or digital feeds. EPG source plugins 1448a-n may communicate with analog or digital feeds from the content provider, the internet, and/or other sources. Media source plugins 1452a-n may communicate with media content in connected devices 168 or other devices or media contents that are accessible to Intelligent TV 100 (*i.e.*, via network 132).

[0184] Process 1500 next communicates and receives media and/or data from the external content provider modules via the source plugins 1520. As discussed, the source plugins are configured to be able to communicate with and receive content from the external content provider modules. For example, the source plugins may access the external content directly via an API provided by the external content provider. The source plugins may also be developed by a third party that may parse the content and/or information provided by the external content provider without accessing the content through an official API.

[0185] Process 1500 next converts the received media and/or data from the external content provider into a corresponding data model format 1530. Data management 1400 may have a number of data models for the internal storage and management of the received content and/or data. Exemplary data models include VOD data model 1404, EPG data model 1408, and media data model 1412. The received content from the various source plugins may be converted to the specific format handled by the respective data model. The data models provide uniform formats for the respective subservices (*i.e.*, VOD subservice 1420, EPG subservice 1424, and media subservice 1428) and/or the internal content provider modules 1416 which interface with applications 416. In some implementations, step 1530 may be optional as the media and/or data may be sent to storage or be processed by data management 1400 without any conversion.

[0186] Process 1500 next processes the received media and/or data by the corresponding subservice 1540. Here, the respective subservices (*i.e.*, VOD subservice 1420, EPG subservice 1424, and media subservice 1428) process the received media and/or data to be used by internal content provider modules 1416 and/or applications 416. This may include processing the received media and/or data according to the need of the internal content provider modules 1416 and/or applications 416. For example, content provider such as EPG data provider 1416a may serve applications with EPG information in a read-only format. Therefore, EPG subservice 1424 may work with data provider 1416a to provide read-only access the EPG information stored in EPG storage 1436. EPG subservice 1424 may organize the EPG information such that only the most relevant information is sent to EPG data provider 1416a (*i.e.*, EPG subservice 1424 may resolve conflicts between an

Internet EPG source versus EPG information embedded in a content feed in order to provide with the most detailed or up-to-date information is sent to EPG data provider 1416a). Media data provider 1416b may require EPG information from EPG subservice 1424 as well as media information from VOD subservice 1420 or media subservice 1428 in order to provide personalized media metadata information to relevant applications. Therefore, these subservices may process the received media and/or data in order to provide the relevant information to media data provider 1416b for generating the personalized media metadata. Further, in one implementation, the subservices may need to allow access to storages 1432, 1436, and 1440 to media data provider 1416b in order to allow media data provider 1416b to store and access the personalized media metadata. In other implementations, media data provider 1416b may store the personalized media metadata in a dedicated database.

[0187] Process 1500 next communicates and provides the processed media and/or data to the various internal content provider modules 1416. In one implementation, the internet content provider modules 1416 are configured to communicate with and access the subservices responsive to user actions or schedule event from Intelligent TV 100 in order to generate and present information required for application 416. This process is discussed with respect to process 1600 in Fig. 16.

[0188] Fig. 16 shows a flow diagram for providing media or data to an internal content provider 1600 for data management 1400 according to an embodiment.

[0189] Process 1600 starts by loading an internal content provider module in response to user action or schedule event 1610. In one implementation, applications 416 may request an internet content provider module to provide media and/or data to processing or displaying to the user. An application may start by user action. For example, live TV 452 or video on demand 456 may request EPG information when the user changes the programming or channel which would display the header requiring EPG information. EPG and/or programming information may also need to be displayed when a user browses the media center 460 which may show a grid of programming available. Therefore, the relevant application 416 will load the corresponding internal content provider module 1416 for the media and/or data needed. Internal content provider modules 1416 may also load in response to scheduled events. For example, media browser 1416c provides a real-time view of media sources and maintains a list of connected media sources. Therefore, media browser 1416c may be loaded in the background and runs continuously in order to update the list. As such, when applications such as media center 460 accesses the list of connected media sources,

media browser 1416c may be able to provide a list in real-time without further delays to poll each connected media sources when the application requests such information.

[0190] Process 1600 next communicates with and receives media and/or data relevant to the requested content from the corresponding subservices or other content provider modules 1620. As discussed with respect to process 1500, the subservices (*i.e.*, VOD subservice 1420, EPG subservice 1424, and media subservice 1428) processes and/or stores the received media and/or data from the external content provider modules. In one implementation, the media and/or data may be processed and stored as standard data models (*i.e.*, VOD data model 1404, EPG data model 1408, and media data model 1412) in storages 1420, 1424, and 1428.

[0191] Process 1600 next organizes the requested media and/or data according to a pre-defined format as content 1630. As discussed with respect to process 1500, in step 1540, the content provider modules 1416 process the received media and/or data from the corresponding subservices 1420, 1424, and 1428. In one implementation, each of the content provider modules 1416 is configured to serve the relevant applications 416 with information. The content provider modules will need to process the received media and/or data (*i.e.*, in the forms of data models 1404, 1408, and 1412) and organize such media and/or data into a pre-defined format for use by the relevant applications 416.

[0192] For example, EPG data provider 1416a serves applications with EPG information in a read-only format. As such, EPG data provider 1416a may transmit EPG information received from EPG subservice 1424 in EPG data model 1408 without modification. In another example, media data provider 1416b provides personalized media metadata and stores data in a sqlite database. As such, media data provider 1416b may receive media and information from VOD subservice 1420, EPG subservice 1424, and media subservice 1428. Media data provider 1416b will also organize the media and data received from these subservices to generate the personalized media metadata and further stores the generated metadata into the sqlite database. The relevant application may simply access the database for the personalized media metadata.

[0193] Process 1600 next provides the content to video hardware and/or display or to other content provider modules and/or application 1640. In one implementation, the content provider 1416 may access and provide content directly to the video hardware 1462 and/or display 1463 via resource arbitrator 1456. For example, the media content provider modules (*i.e.*, media data provider 1416b, media browser 1416c, and media scanner 1416d) may provide media content directly to video hardware 1462 and/or display 1463, such that the media content may display

directly the video without processing by an application. This may have the benefit in reducing processor-intensive video processing and/or other benefits. Contents from content provider modules 1416 may also have provided to other relevant content provider modules 1416 and/or applications 416.

[0194] The exemplary systems and methods of this disclosure have been described in relation to data service function for Intelligent TV 100. However, to avoid unnecessarily obscuring the present disclosure, the preceding description omits a number of known structures and devices. This omission is not to be construed as a limitation of the scopes of the claims. Specific details are set forth to provide an understanding of the present disclosure. It should however be appreciated that the present disclosure may be practiced in a variety of ways beyond the specific detail set forth herein.

[0195] Furthermore, while the exemplary aspects, embodiments, and/or configurations illustrated herein show the various components of the system collocated, certain components of the system can be located remotely, at distant portions of a distributed network, such as a LAN and/or the Internet, or within a dedicated system. Thus, it should be appreciated, that the components of the system can be combined into one or more devices or collocated on a particular node of a distributed network, such as an analog and/or digital telecommunications network, a packet-switch network, or a circuit-switched network. It will be appreciated from the preceding description, and for reasons of computational efficiency, that the components of the system can be arranged at any location within a distributed network of components without affecting the operation of the system. For example, the various components can be located in a switch such as a PBX and media server, gateway, in one or more communications devices, at one or more users' premises, or some combination thereof. Similarly, one or more functional portions of the system could be distributed between a telecommunications device(s) and an associated computing device.

[0196] Furthermore, it should be appreciated that the various links connecting the elements can be wired or wireless links, or any combination thereof, or any other known or later developed element(s) that is capable of supplying and/or communicating data to and from the connected elements. These wired or wireless links can also be secure links and may be capable of communicating encrypted information. Transmission media used as links, for example, can be any suitable carrier for electrical signals, including coaxial cables, copper wire and fiber optics, and may take the form of acoustic or light waves, such as those generated during radio-wave and infra-red data communications.

[0197] Also, while the flowcharts have been discussed and illustrated in relation to a particular sequence of events, it should be appreciated that changes, additions, and omissions to this sequence can occur without materially affecting the operation of the disclosed embodiments, configuration, and aspects.

[0198] A number of variations and modifications of the disclosure can be used. It would be possible to provide for some features of the disclosure without providing others.

[0199] In yet another embodiment, the systems and methods of this disclosure can be implemented in conjunction with a special purpose computer, a programmed microprocessor or microcontroller and peripheral integrated circuit element(s), an ASIC or other integrated circuit, a digital signal processor, a hard-wired electronic or logic circuit such as discrete element circuit, a programmable logic device or gate array such as PLD, PLA, FPGA, PAL, special purpose computer, any comparable means, or the like. In general, any device(s) or means capable of implementing the methodology illustrated herein can be used to implement the various aspects of this disclosure. Exemplary hardware that can be used for the disclosed embodiments, configurations and aspects includes computers, handheld devices, telephones (e.g., cellular, Internet enabled, digital, analog, hybrids, and others), and other hardware known in the art. Some of these devices include processors (e.g., a single or multiple microprocessors), memory, nonvolatile storage, input devices, and output devices. Furthermore, alternative software implementations including, but not limited to, distributed processing or component/object distributed processing, parallel processing, or virtual machine processing can also be constructed to implement the methods described herein.

[0200] In yet another embodiment, the disclosed methods may be readily implemented in conjunction with software using object or object-oriented software development environments that provide portable source code that can be used on a variety of computer or workstation platforms. Alternatively, the disclosed system may be implemented partially or fully in hardware using standard logic circuits or VLSI design. Whether software or hardware is used to implement the systems in accordance with this disclosure is dependent on the speed and/or efficiency requirements of the system, the particular function, and the particular software or hardware systems or microprocessor or microcomputer systems being utilized.

[0201] In yet another embodiment, the disclosed methods may be partially implemented in software that can be stored on a storage medium, executed on a programmed general-purpose computer with the cooperation of a controller and memory, a special purpose computer, a

microprocessor, or the like. In these instances, the systems and methods of this disclosure can be implemented as program embedded on a personal computer such as an applet, JAVA® or CGI script, as a resource residing on a server or computer workstation, as a routine embedded in a dedicated measurement system, system component, or the like. The system can also be implemented by physically incorporating the system and/or method into a software and/or hardware system.

[0202] Although the present disclosure describes components and functions implemented in the aspects, embodiments, and/or configurations with reference to particular standards and protocols, the aspects, embodiments, and/or configurations are not limited to such standards and protocols. Other similar standards and protocols not mentioned herein are in existence and are considered to be included in the present disclosure. Moreover, the standards and protocols mentioned herein and other similar standards and protocols not mentioned herein are periodically superseded by faster or more effective equivalents having essentially the same functions. Such replacement standards and protocols having the same functions are considered equivalents included in the present disclosure.

[0203] The present disclosure, in various aspects, embodiments, and/or configurations, includes components, methods, processes, systems and/or apparatus substantially as depicted and described herein, including various aspects, embodiments, configurations embodiments, subcombinations, and/or subsets thereof. Those of skill in the art will understand how to make and use the disclosed aspects, embodiments, and/or configurations after understanding the present disclosure. The present disclosure, in various aspects, embodiments, and/or configurations, includes providing devices and processes in the absence of items not depicted and/or described herein or in various aspects, embodiments, and/or configurations hereof, including in the absence of such items as may have been used in previous devices or processes, e.g., for improving performance, achieving ease and/or reducing cost of implementation.

[0204] The foregoing discussion has been presented for purposes of illustration and description. The foregoing is not intended to limit the disclosure to the form or forms disclosed herein. In the foregoing Detailed Description for example, various features of the disclosure are grouped together in one or more aspects, embodiments, and/or configurations for the purpose of streamlining the disclosure. The features of the aspects, embodiments, and/or configurations of the disclosure may be combined in alternate aspects, embodiments, and/or configurations other than those discussed above. This method of disclosure is not to be interpreted as reflecting an intention that the claims require more features than are expressly recited in each claim. Rather, as the following claims

reflect, inventive aspects lie in less than all features of a single foregoing disclosed aspect, embodiment, and/or configuration. Thus, the following claims are hereby incorporated into this Detailed Description, with each claim standing on its own as a separate preferred embodiment of the disclosure.

[0205] Moreover, though the description has included description of one or more aspects, embodiments, and/or configurations and certain variations and modifications, other variations, combinations, and modifications are within the scope of the disclosure, e.g., as may be within the skill and knowledge of those in the art, after understanding the present disclosure. It is intended to obtain rights which include alternative aspects, embodiments, and/or configurations to the extent permitted, including alternate, interchangeable and/or equivalent structures, functions, ranges or steps to those claimed, whether or not such alternate, interchangeable and/or equivalent structures, functions, ranges or steps are disclosed herein, and without intending to publicly dedicate any patentable subject matter.

What is claimed is:

1. A method of providing content for an Intelligent television (TV), comprising:
loading an internal content provider module responsive to a user action or a scheduled event on the Intelligent TV;
communicating and receiving data relevant to the requested content from a corresponding subservice or a content provider module of the Intelligent TV;
organizing the received data as the content according to a pre-defined format; and
providing the content to video hardware or display of the Intelligent TV or to a content provider module or application of the Intelligent TV.
2. The method of processing data of claim 1, wherein the pre-defined format comprises one of a VOD data model, an EPG data model, and a media data model.
3. The method of processing data of claim 1, wherein the subservice comprises one of a VOD subservice, an EPG subservice, and a media subservice.
4. The method of processing data of claim 1, wherein the internal content provider module comprises an EPG data provider, a media data provider, a media browser, a media scanner, or a thumbnail engine.
5. The method of processing data of claim 4, wherein the EPG data provider is configured to serve one or more applications of the Intelligent TV with EPG information in a read-only format.
6. The method of processing data of claim 4, wherein the media data provider is configured to provide media metadata personalized for a user.
7. The method of processing data of claim 6, wherein the media data provider is further configured to store the media metadata in a sqlite database.
8. The method of processing data of claim 4, wherein the media browser is configured to provide a real-time view of media sources of the Intelligent TV and maintain a list of connected media sources of the Intelligent TV.
9. The method of processing data of claim 8, wherein the media browser maintains a non-permanent storage.

10. The method of processing data of claim 8, wherein the media scanner is configured to populate a media table using data retrieved by the media browser and rescan for new media periodically.

11. The method of processing data of claim 4, wherein the thumbnail engine is configured to provide thumbnails for media, applications, or other contents.

12. A data service system in an Intelligent Television (TV), comprising:
an internal content provider module configured to provide content to video hardware or display of the in Intelligent TV or to a content provider module or application of the Intelligent TV;
and

a subservice configured to provide the internet content provider module with requested data for a pre-defined data model, wherein

the internal content provider module is loaded on the Intelligent TV responsive to a user action or a schedule event on the Intelligent TV, and wherein

the internal content provider module organizes the received data from the subservice as the content according to a pre-defined format.

13. The data service system of claim 12, wherein the internal content provider module comprises an EPG data provider, a media data provider, a media browser, a media scanner, and or thumbnail engine.

14. The data service system of claim 13, wherein the EPG data provider is configured to serve one or more applications of the Intelligent TV with EPG information in a read-only format.

15. The data service system of claim 13, wherein the media data provider is configured to provide media metadata personalized for a user.

16. The data service system of claim 13, wherein the media browser is configured to provide a real-time view of media sources of the Intelligent TV and maintain a list of connected media sources of the Intelligent TV.

17. The data service system of claim 13, wherein the media scanner is configured to populate a media table using data retrieved by the media browser and rescan for new media periodically.

18. The data service system of claim 13, wherein the thumbnail engine is configured to provide thumbnails for media, applications, or other contents.

19. An Intelligent Television (TV) comprising a data service system, the data service system comprising:

an internal content provider module configured to provide content to video hardware or display of the in Intelligent TV or to a content provider module or application of the Intelligent TV; and

a subservice configured to provide the internet content provider module with requested data for a pre-defined data model, wherein

the internal content provider module is loaded on the Intelligent TV responsive to a user action or a schedule event on the Intelligent TV, and wherein

the internal content provider module organizes the received data from the subservice as the content according to a pre-defined format.

20. The Intelligent TV of claim 19, wherein the internal content provider module comprises an EPG data provider, a media data provider, a media browser, a media scanner, and or thumbnail engine.

ABSTRACT

A data service system in an Intelligent Television (TV) includes an internal content provider module configured to provide content to video hardware or display of the Intelligent TV or to a content provider module or application of the Intelligent TV and a subservice configured to provide the internet content provider module with requested data for a pre-defined data model. The internal content provider module is loaded on the Intelligent TV responsive to a user action or a schedule event on the Intelligent TV, and the internal content provider module organizes the received data from the subservice as the content according to a pre-defined format. The internal content provider module includes an EPG data provider, a media data provider, a media browser, a media scanner, and/or a thumbnail engine.

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Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
UTILITY APPLICATION FILING	1011	1	280	280
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UTILITY EXAMINATION FEE	1311	1	720	720
Pages:				
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Miscellaneous-Filing:				
Petition:				
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File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Application Data Sheet	WebADS.pdf	521422	no	25
			1e112597eb5f8971ba789f933042469c001883f3		
Warnings:					
Information:					
2	Power of Attorney	20171102_poa_6583-490-CON.pdf	405087	no	3
			d4f31a426313ba5516956a84efff0b913b344f7e		
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Information:					
3	Drawings-only black and white line drawings	20171102_drawings_n_6583-490-CON.pdf	345687	no	22
			dc1f681ec6960ad9543f0eb154d52438e72f80d7		
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4	Oath or Declaration filed	20171102_executed-declaration_Shoikher_6583-490.pdf	1469115	no	2
			ad8f51bd6fa00c84a9f5ed40e6ec82cb912c9e86		
Warnings:					
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5	Oath or Declaration filed	20171102_executed-declaration_Visosky_6583-490.pdf	1515545	no	2
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6	Oath or Declaration filed	20171102_executed-declaration_Sirpal_6583-472-PUS.pdf	225541	no	4
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Warnings:					
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7		20171102_application_n_6583-490-CON.pdf	430001	yes	53						
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	Document Description		Start	End							
	Specification		1	49							
	Claims		50	52							
	Abstract		53	53							
Warnings:											
Information:											
8	Fee Worksheet (SB06)	fee-info.pdf	35277	no	2						
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Warnings:											
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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	6583-490-CON
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Title of Invention	DATA SERVICE		
The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76. This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.			

Secrecy Order 37 CFR 5.2:

☐	Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)
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Inventor 3				
Legal Name				

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	6583-490-CON
		Application Number	
Title of Invention	DATA SERVICE		

Prefix	Given Name	Middle Name	Family Name	Suffix
	Sanjiv		Sirpal	
Residence Information (Select One) ☐ US Residency ☒ Non US Residency ☐ Active US Military Service				
City	Oakville	Country of Residence ⁱ	CA	
Mailing Address of Inventor:				
Address 1	3264 Stocksbridge Avenue			
Address 2				
City	Oakville	State/Province		
Postal Code	L6M 0E3	Country ⁱ	CA	
All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the Add button. Add				

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below. For further information see 37 CFR 1.33(a).	
☐ An Address is being provided for the correspondence information of this application.	
Customer Number	111285
Email Address	flexpatents-sr@sheridanross.com
Add Email Remove Email	

Application Information:

Title of the Invention	DATA SERVICE		
Attorney Docket Number	6583-490-CON	Small Entity Status Claimed	☐
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	22	Suggested Figure for Publication (if any)	

Filing By Reference:

Only complete this section when filing an application by reference under 35 U.S.C. 111(c) and 37 CFR 1.57(a). Do not complete this section if application papers including a specification and any drawings are being filed. Any domestic benefit or foreign priority information must be provided in the appropriate section(s) below (i.e., "Domestic Benefit/National Stage Information" and "Foreign Priority Information").

For the purposes of a filing date under 37 CFR 1.53(b), the description and any drawings of the present application are replaced by this reference to the previously filed application, subject to conditions and requirements of 37 CFR 1.57(a).

Application number of the previously filed application	Filing date (YYYY-MM-DD)	Intellectual Property Authority or Country ⁱ

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Publication Information:

☐	Request Early Publication (Fee required at time of Request 37 CFR 1.219)
☐	Request Not to Publish. I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application has not and will not be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32). Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer Number will be used for the Representative Information during processing.

Please Select One:	☒ Customer Number	☐ US Patent Practitioner	☐ Limited Recognition (37 CFR 11.9)		
Customer Number	111285				
Prefix	Given Name	Middle Name	Family Name	Suffix	Remove
Registration Number					
Prefix	Given Name	Middle Name	Family Name	Suffix	Remove
Registration Number					
Additional Representative Information blocks may be generated within this form by selecting the Add button.					

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, 365(c), or 386(c) or indicate National Stage entry from a PCT application. Providing this information in the application data sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.

When referring to the current application, please leave the application number blank.

Prior Application Status	Pending	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
	Continuation of	14821365	2015-08-07

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.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	6583-490-CON
		Application Number	
Title of Invention	DATA SERVICE		

Prior Application Status	Abandoned	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
14821365	Continuation of	13969205	2013-08-16
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13969205	Claims benefit of provisional	61684672	2012-08-17
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13969205	Claims benefit of provisional	61702650	2012-09-18
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13969205	Claims benefit of provisional	61697710	2012-09-06
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13969205	Claims benefit of provisional	61700182	2012-09-12
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13969205	Claims benefit of provisional	61736692	2012-12-13
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13969205	Claims benefit of provisional	61798821	2013-03-15

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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	6583-490-CON
		Application Number	
Title of Invention	DATA SERVICE		

Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13969205	Claims benefit of provisional	61804942	2013-03-25
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13969205	Claims benefit of provisional	61804998	2013-03-25
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13969205	Claims benefit of provisional	61804971	2013-03-25
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13969205	Claims benefit of provisional	61804990	2013-03-25
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13969205	Claims benefit of provisional	61805003	2013-03-25
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13969205	Claims benefit of provisional	61805053	2013-03-25
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13969205	Claims benefit of provisional	61805030	2013-03-25

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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	6583-490-CON
		Application Number	
Title of Invention	DATA SERVICE		

Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13969205	Claims benefit of provisional	61805027	2013-03-25
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13969205	Claims benefit of provisional	61805042	2013-03-25
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13969205	Claims benefit of provisional	61805038	2013-03-25
Prior Application Status	Abandoned	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
14821365	Continuation of	13969190	2013-08-16
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13969190	Claims benefit of provisional	61684672	2012-08-17
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13969190	Claims benefit of provisional	61702650	2012-09-18
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13969190	Claims benefit of provisional	61697710	2012-09-06

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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	6583-490-CON
		Application Number	
Title of Invention	DATA SERVICE		

Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13969190	Claims benefit of provisional	61700182	2012-09-12
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13969190	Claims benefit of provisional	61736692	2012-12-13
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13969190	Claims benefit of provisional	61798821	2013-03-15
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13969190	Claims benefit of provisional	61804942	2013-03-25
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13969190	Claims benefit of provisional	61804998	2013-03-25
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13969190	Claims benefit of provisional	61804971	2013-03-25
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13969190	Claims benefit of provisional	61804990	2013-03-25

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	6583-490-CON
		Application Number	
Title of Invention	DATA SERVICE		

Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13969190	Claims benefit of provisional	61805003	2013-03-25
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13969190	Claims benefit of provisional	61805053	2013-03-25
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13969190	Claims benefit of provisional	61805030	2013-03-25
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13969190	Claims benefit of provisional	61805027	2013-03-25
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13969190	Claims benefit of provisional	61805042	2013-03-25
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13969190	Claims benefit of provisional	61805038	2013-03-25
Prior Application Status	Abandoned	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
14821365	Continuation of	13969201	2013-08-16

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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	6583-490-CON
		Application Number	
Title of Invention	DATA SERVICE		

Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13969201	Claims benefit of provisional	61684672	2012-08-17
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13969201	Claims benefit of provisional	61702650	2012-09-18
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13969201	Claims benefit of provisional	61697710	2012-09-06
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13969201	Claims benefit of provisional	61700182	2012-09-12
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13969201	Claims benefit of provisional	61736692	2012-12-13
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13969201	Claims benefit of provisional	61798821	2013-03-15
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13969201	Claims benefit of provisional	61804942	2013-03-25

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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	6583-490-CON
		Application Number	
Title of Invention	DATA SERVICE		

Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13969201	Claims benefit of provisional	61804998	2013-03-25
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13969201	Claims benefit of provisional	61804971	2013-03-25
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13969201	Claims benefit of provisional	61804990	2013-03-25
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13969201	Claims benefit of provisional	61805003	2013-03-25
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13969201	Claims benefit of provisional	61805053	2013-03-25
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13969201	Claims benefit of provisional	61805030	2013-03-25
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13969201	Claims benefit of provisional	61805027	2013-03-25

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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	6583-490-CON
		Application Number	
Title of Invention	DATA SERVICE		

Prior Application Status		Expired		Remove	
Application Number	Continuity Type		Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)	
13969201	Claims benefit of provisional		61805042	2013-03-25	
Prior Application Status		Expired		Remove	
Application Number	Continuity Type		Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)	
13969201	Claims benefit of provisional		61805038	2013-03-25	
Prior Application Status		Patented		Remove	
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
14821365	Continuation of	13970234	2013-08-19	9185324	2015-11-10
Prior Application Status		Expired		Remove	
Application Number	Continuity Type		Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)	
13970234	Claims benefit of provisional		61684672	2012-08-17	
Prior Application Status		Expired		Remove	
Application Number	Continuity Type		Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)	
13970234	Claims benefit of provisional		61702650	2012-09-18	
Prior Application Status		Expired		Remove	
Application Number	Continuity Type		Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)	
13970234	Claims benefit of provisional		61697710	2012-09-06	
Prior Application Status		Expired		Remove	
Application Number	Continuity Type		Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)	
13970234	Claims benefit of provisional		61700182	2012-09-12	

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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	6583-490-CON
		Application Number	
Title of Invention	DATA SERVICE		

Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13970234	Claims benefit of provisional	61736692	2012-12-13
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13970234	Claims benefit of provisional	61798821	2013-03-15
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13970234	Claims benefit of provisional	61804942	2013-03-25
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13970234	Claims benefit of provisional	61804998	2013-03-25
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13970234	Claims benefit of provisional	61804971	2013-03-25
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13970234	Claims benefit of provisional	61804990	2013-03-25
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13970234	Claims benefit of provisional	61805003	2013-03-25

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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	6583-490-CON
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Title of Invention	DATA SERVICE		

Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13970234	Claims benefit of provisional	61805053	2013-03-25
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13970234	Claims benefit of provisional	61805030	2013-03-25
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13970234	Claims benefit of provisional	61805027	2013-03-25
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13970234	Claims benefit of provisional	61805042	2013-03-25
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13970234	Claims benefit of provisional	61805038	2013-03-25
Prior Application Status	Abandoned	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
14821365	Continuation of	13970243	2013-08-19
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13970243	Claims benefit of provisional	61684672	2012-08-17

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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	6583-490-CON
		Application Number	
Title of Invention	DATA SERVICE		

Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13970243	Claims benefit of provisional	61702650	2012-09-18
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13970243	Claims benefit of provisional	61697710	2012-09-06
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13970243	Claims benefit of provisional	61700182	2012-09-12
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13970243	Claims benefit of provisional	61736692	2012-12-13
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13970243	Claims benefit of provisional	61798821	2013-03-15
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13970243	Claims benefit of provisional	61804942	2013-03-25
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13970243	Claims benefit of provisional	61804998	2013-03-25

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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	6583-490-CON
		Application Number	
Title of Invention	DATA SERVICE		

Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13970243	Claims benefit of provisional	61804971	2013-03-25
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13970243	Claims benefit of provisional	61804990	2013-03-25
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13970243	Claims benefit of provisional	61805003	2013-03-25
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13970243	Claims benefit of provisional	61805053	2013-03-25
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13970243	Claims benefit of provisional	61805030	2013-03-25
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13970243	Claims benefit of provisional	61805027	2013-03-25
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13970243	Claims benefit of provisional	61805042	2013-03-25

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	6583-490-CON
		Application Number	
Title of Invention	DATA SERVICE		

Prior Application Status		Expired		Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)		
13970243	Claims benefit of provisional	61805038	2013-03-25		
Prior Application Status		Patented		Remove	
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
14821365	Continuation of	13970247	2013-08-19	9369654	2016-06-14
Prior Application Status		Expired		Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)		
13970247	Claims benefit of provisional	61684672	2012-08-17		
Prior Application Status		Expired		Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)		
13970247	Claims benefit of provisional	61702650	2012-09-18		
Prior Application Status		Expired		Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)		
13970247	Claims benefit of provisional	61697710	2012-09-06		
Prior Application Status		Expired		Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)		
13970247	Claims benefit of provisional	61697710	2012-09-06		
Prior Application Status		Expired		Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)		
13970247	Claims benefit of provisional	61700182	2012-09-12		
Prior Application Status		Expired		Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)		
13970247	Claims benefit of provisional	61736692	2012-12-13		

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.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	6583-490-CON
		Application Number	
Title of Invention	DATA SERVICE		

Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13970247	Claims benefit of provisional	61798821	2013-03-15
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13970247	Claims benefit of provisional	61804942	2013-03-25
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13970247	Claims benefit of provisional	61804998	2013-03-25
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13970247	Claims benefit of provisional	61804971	2013-03-25
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13970247	Claims benefit of provisional	61804990	2013-03-25
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13970247	Claims benefit of provisional	61805003	2013-03-25
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13970247	Claims benefit of provisional	61805053	2013-03-25

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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	6583-490-CON
		Application Number	
Title of Invention	DATA SERVICE		

Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13970247	Claims benefit of provisional	61805030	2013-03-25
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13970247	Claims benefit of provisional	61805027	2013-03-25
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13970247	Claims benefit of provisional	61805042	2013-03-25
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13970247	Claims benefit of provisional	61805038	2013-03-25
Prior Application Status	Abandoned	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
14821365	Continuation of	14407609	2014-12-12
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
14407609	a 371 of international	PCT/US2013/036804	2013-04-16
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
PCT/US2013/036804	Claims benefit of provisional	61684672	2012-08-17

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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	6583-490-CON
		Application Number	
Title of Invention	DATA SERVICE		

Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
PCT/US2013/036804	Claims benefit of provisional	61697710	2012-09-06
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
PCT/US2013/036804	Claims benefit of provisional	61700182	2012-09-12
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
PCT/US2013/036804	Claims benefit of provisional	61702650	2012-09-18
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
PCT/US2013/036804	Claims benefit of provisional	61736692	2012-12-13
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
PCT/US2013/036804	Claims benefit of provisional	61798821	2013-03-15
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
PCT/US2013/036804	Claims benefit of provisional	61805030	2013-03-25
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
PCT/US2013/036804	Claims benefit of provisional	61805042	2013-03-25

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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	6583-490-CON
		Application Number	
Title of Invention	DATA SERVICE		

Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
PCT/US2013/036804	Claims benefit of provisional	61805003	2013-03-25
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
PCT/US2013/036804	Claims benefit of provisional	61805053	2013-03-25
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
PCT/US2013/036804	Claims benefit of provisional	61804998	2013-03-25
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
PCT/US2013/036804	Claims benefit of provisional	61805038	2013-03-25
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
PCT/US2013/036804	Claims benefit of provisional	61804971	2013-03-25
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
PCT/US2013/036804	Claims benefit of provisional	61804990	2013-03-25
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
PCT/US2013/036804	Claims benefit of provisional	61804942	2013-03-25

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	6583-490-CON
		Application Number	
Title of Invention	DATA SERVICE		

Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
PCT/US2013/036804	Claims benefit of provisional	61805027	2013-03-25
Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the Add button.			

Foreign Priority Information:

This section allows for the applicant to claim priority to a foreign application. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55. When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX) the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(i)(1) and (2). Under the PDX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).

Application Number	Country ⁱ	Filing Date (YYYY-MM-DD)	Access Code ⁱ (if applicable)
Additional Foreign Priority Data may be generated within this form by selecting the Add button.			

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013. ☐ NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.
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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	6583-490-CON
		Application Number	
Title of Invention	DATA SERVICE		

Authorization or Opt-Out of Authorization to Permit Access:

When this Application Data Sheet is properly signed and filed with the application, applicant has provided written authority to permit a participating foreign intellectual property (IP) office access to the instant application-as-filed (see paragraph A in subsection 1 below) and the European Patent Office (EPO) access to any search results from the instant application (see paragraph B in subsection 1 below).

Should applicant choose not to provide an authorization identified in subsection 1 below, applicant **must opt-out** of the authorization by checking the corresponding box A or B or both in subsection 2 below.

NOTE: This section of the Application Data Sheet is **ONLY** reviewed and processed with the **INITIAL** filing of an application. After the initial filing of an application, an Application Data Sheet cannot be used to provide or rescind authorization for access by a foreign IP office(s). Instead, Form PTO/SB/39 or PTO/SB/69 must be used as appropriate.

1. Authorization to Permit Access by a Foreign Intellectual Property Office(s)

A. Priority Document Exchange (PDX) - Unless box A in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the State Intellectual Property Office of the People's Republic of China (SIPO), the World Intellectual Property Organization (WIPO), and any other foreign intellectual property office participating with the USPTO in a bilateral or multilateral priority document exchange agreement in which a foreign application claiming priority to the instant patent application is filed, access to: (1) the instant patent application-as-filed and its related bibliographic data, (2) any foreign or domestic application to which priority or benefit is claimed by the instant application and its related bibliographic data, and (3) the date of filing of this Authorization. See 37 CFR 1.14(h)(1).

B. Search Results from U.S. Application to EPO - Unless box B in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the EPO access to the bibliographic data and search results from the instant patent application when a European patent application claiming priority to the instant patent application is filed. See 37 CFR 1.14(h)(2).

The applicant is reminded that the EPO's Rule 141(1) EPC (European Patent Convention) requires applicants to submit a copy of search results from the instant application without delay in a European patent application that claims priority to the instant application.

2. Opt-Out of Authorizations to Permit Access by a Foreign Intellectual Property Office(s)

☐ A. Applicant **DOES NOT** authorize the USPTO to permit a participating foreign IP office access to the instant application-as-filed. If this box is checked, the USPTO will not be providing a participating foreign IP office with any documents and information identified in subsection 1A above.

☐ B. Applicant **DOES NOT** authorize the USPTO to transmit to the EPO any search results from the instant patent application. If this box is checked, the USPTO will not be providing the EPO with search results from the instant application.

NOTE: Once the application has published or is otherwise publicly available, the USPTO may provide access to the application in accordance with 37 CFR 1.14.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	6583-490-CON
		Application Number	
Title of Invention	DATA SERVICE		

Applicant Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.			
Applicant 1			
If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section.			
Clear			
☒ Assignee		☐ Legal Representative under 35 U.S.C. 117	
☐ Person to whom the inventor is obligated to assign.		☐ Person who shows sufficient proprietary interest	
If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:			
Name of the Deceased or Legally Incapacitated Inventor:			
If the Applicant is an Organization check here. ☒			
Organization Name	FLEXTRONICS AP, LLC		
Mailing Address Information For Applicant:			
Address 1	6201 America Center Drive		
Address 2			
City	San Jose	State/Province	CA
Country ¹	US	Postal Code	95134
Phone Number		Fax Number	
Email Address			
Additional Applicant Data may be generated within this form by selecting the Add button.			

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	6583-490-CON
		Application Number	
Title of Invention	DATA SERVICE		

Assignee Information including Non-Applicant Assignee Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

Assignee 1				
Complete this section if assignee information, including non-applicant assignee information, is desired to be included on the patent application publication. An assignee-applicant identified in the "Applicant Information" section will appear on the patent application publication as an applicant. For an assignee-applicant, complete this section only if identification as an assignee is also desired on the patent application publication.				
If the Assignee or Non-Applicant Assignee is an Organization check here. ☐				
Prefix	Given Name	Middle Name	Family Name	Suffix
Mailing Address Information For Assignee including Non-Applicant Assignee:				
Address 1				
Address 2				
City		State/Province		
Country i		Postal Code		
Phone Number		Fax Number		
Email Address				
Additional Assignee or Non-Applicant Assignee Data may be generated within this form by selecting the Add button.				

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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	6583-490-CON
		Application Number	
Title of Invention	DATA SERVICE		

Signature:

NOTE: This Application Data Sheet must be signed in accordance with 37 CFR 1.33(b). **However, if this Application Data Sheet is submitted with the INITIAL filing of the application and either box A or B is not checked in subsection 2 of the "Authorization or Opt-Out of Authorization to Permit Access" section, then this form must also be signed in accordance with 37 CFR 1.14(c).**

This Application Data Sheet **must** be signed by a patent practitioner if one or more of the applicants is a **juristic entity** (e.g., corporation or association). If the applicant is two or more joint inventors, this form must be signed by a patent practitioner, **all** joint inventors who are the applicant, or one or more joint inventor-applicants who have been given power of attorney (e.g., see USPTO Form PTO/AIA/81) on behalf of **all** joint inventor-applicants.

See 37 CFR 1.4(d) for the manner of making signatures and certifications.

Signature	/Tadd F. Wilson/			Date (YYYY-MM-DD)	
First Name	Tadd F.	Last Name	Wilson	Registration Number	54544
Additional Signature may be generated within this form by selecting the Add button.					

SCORE Placeholder Sheet for IFW Content

Application Number: 15801601

Document Date: 11/02/2017

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Form Revision Date: August 26, 2013