IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
WACO DIVISION

VOIP-PAL.COM, INC., Plaintiff, v. META PLATFORMS, INC. and WHATSAPP LLC,[1] Defendants.	§ § § § § § § § § §	CASE NO. 6:21-cv-00665-ADA JURY TRIAL DEMANDED

VOIP-PAL.COM, INC., Plaintiff, v. GOOGLE LLC, Defendant.	§ § § § § § § § § §	CASE NO. 6:21-cv-00667-ADA JURY TRIAL DEMANDED

VOIP-PAL.COM, INC., Plaintiff, v. AMAZON.COM, INC., et al., Defendants.	§ § § § § § § § § §	CASE NO. 6:21-cv-00668-ADA JURY TRIAL DEMANDED

VOIP-PAL.COM, INC., Plaintiff,	§ § §	

[1] Defendants have filed a notice of name change and unopposed motion to correct the docket in Case No. 6:21-cv-00665-ADA.

GOOGLE EXHIBIT 1030

v.	§	CASE NO. 6:21-cv-00672-ADA
	§	
VERIZON COMMUNICATIONS, INC., et al.,	§	JURY TRIAL DEMANDED
	§	
Defendants.	§	
	§	

VOIP-PAL.COM, INC.,	§	
	§	
Plaintiff,	§	
	§	
v.	§	CASE NO. 6:21-cv-00674-ADA
	§	
T-MOBILE USA, INC.,	§	JURY TRIAL DEMANDED
	§	
Defendant.	§	
	§	

DEFENDANTS' PRELIMINARY INVALIDITY CONTENTIONS

Pursuant to the Court's November 17, 2021 Standing Order Governing Proceedings in Patent Cases ("OGP"), Defendants Meta Platforms, Inc., WhatsApp LLC, Google LLC, Amazon.com, Inc., Amazon.com Services LLC, Amazon Web Services, Inc., Verizon Communications Inc., Cellco Partnership d/b/a Verizon Wireless, Verizon Services Corp., Verizon Business Network Services LLC, and T-Mobile USA, Inc. (collectively, "Defendants") hereby submit the following Preliminary Invalidity Contentions regarding U.S. Patent Nos. 8,630,234 ("the '234 patent") and 10,880,721 ("the '721 patent") (collectively, "the Asserted Patents").

Plaintiff VoIP-Pal.com, Inc. ("VoIP-Pal") served Preliminary Infringement Contentions against each Defendant, and alleges that Defendants infringe each of claims 1, 10, 11, 19, 20-22, 24-25, 28, 30-33, 35, 37-40, 43, 45-48, 51, 53, 54, 61, 62, 64, 65, 70, 72, and 75 of the '234 patent and claims 1, 6, 15, 16, 20, 25, 34, 38, 39, 43, 45, 46, 49-51, 63, 77, 103, 104, 109, 110, 124, 130, 133, 135, 136, 138, 139, and 140 of the '721 patent (collectively, the "Asserted Claims").[2] As discussed below, Defendants contend that each of the Asserted Claims is invalid under 35 U.S.C. §§ 101, 102, 103, and/or 112.

These Preliminary Invalidity Contentions reflect Defendants' knowledge as of this early date in the present action. Defendants reserve the right, to the extent permitted by the Court and applicable statutes and rules, to modify and/or supplement these Preliminary Invalidity Contentions to address additional prior art or information regarding prior art, additional information regarding subject-matter eligibility, any modification or supplementation of Plaintiff's

[2] Plaintiff does not allege infringement of claims 14, 57, 67, and 108 of the '721 patent, but does allege infringement of other claims that depend on those claims, so Defendants necessarily assert the invalidity of those claims. The charts in the Exhibits to these Preliminary Invalidity Contentions include those claims.

Preliminary Infringement Contentions, any claim construction by the Court, or as otherwise may be appropriate.

The OGP contemplates that these Preliminary Invalidity Contentions would be prepared and served in response to Plaintiff's Preliminary Infringement Contentions. However, Plaintiff's Preliminary Infringement Contentions are insufficient because they lack proper and complete disclosure as to how Plaintiff contends that Defendants infringe the Asserted Claims. Due to Plaintiff's failure to provide proper and complete disclosure of its infringement theories, Defendants reserve the right to amend these Preliminary Invalidity Contentions should Plaintiff amend its Preliminary Infringement Contentions or take other actions over the course of this litigation that further clarify or alter its infringement theories or apparent claim constructions. Defendants also reserve the right to amend these Preliminary Invalidity Contentions in light of positions that Plaintiff or its expert witnesses may assert concerning claim construction, infringement, invalidity, and/or subject-matter eligibility.

Defendants further reserve the right to amend these Preliminary Invalidity Contentions to incorporate information from cases involving the Asserted Patents or any related patents or in light of discovery that provides additional information about Plaintiff's application or interpretation of the Asserted Claims.

Defendants' Exhibits attached hereto cite to particular teachings and disclosures of the prior art as applied to features of the Asserted Claims. However, persons having ordinary skill in the art generally may view an item of prior art in the context of other publications, literature, products, and understanding. As such, the cited portions of prior art identified herein are exemplary only. Defendants may rely on the entirety of the prior art references listed here, including uncited portions of those prior art references, and on other publications and expert testimony shedding light on those prior art references, including as aids in understanding and

interpreting the cited portions, as providing context, and as additional evidence that the prior art discloses a claim limitation.

Defendants may rely upon documents, products, testimony, and other evidence to establish bases for and motivations to make combinations of certain cited references that render the Asserted Claims obvious. Defendants may also rely upon corroborating documents, products, testimony, and other evidence, including but not limited to materials obtained through further investigation and third-party discovery of the prior art identified here, that describes the invalidating features identified in these contentions; evidence of the state of the art in the relevant time period (irrespective of whether such references themselves qualify as prior art to the Asserted Patents), including prior art listed on the face of the Asserted Patents and/or disclosed in the specification or prosecution history ("Admitted Prior Art"); and/or expert testimony to provide context to or aid in understanding the cited portions of the identified prior art.

The references discussed in the attached Exhibits disclose the elements of the Asserted Claims explicitly or inherently, and they may be relied upon to show the state of the art in the relevant time frame. To the extent the attached Exhibits cite to a reference for each element or limitation of an Asserted Claim, Defendants contend that such reference anticipates that claim. In addition, Defendants contend, in the alternative, that each Asserted Claim is rendered obvious for the reasons set forth here and in the attached charts. To the extent suggested obviousness combinations are included here and/or in the attached Exhibits, they are provided in the alternative to the anticipation contentions and are not to be construed to suggest that any reference included in the combinations is not by itself anticipatory.

For purposes of these Preliminary Invalidity Contentions, Defendants identify prior art references and provide element-by-element claim charts based, in part, on the apparent claim constructions advanced by Plaintiff in its Preliminary Infringement Contentions. The citation of

prior art here and in the accompanying Exhibits is not intended to reflect Defendants' claim construction contentions, which will be disclosed in due course in accordance with the Scheduling Order, and may instead reflect Defendants' understanding of Plaintiff's apparent (and potentially erroneous) claim constructions. Nothing here shall be treated as an admission or suggestion that Defendants agree with Plaintiff regarding either the scope of any of the Asserted Claims or the claim constructions advanced in Plaintiff's Preliminary Infringement Contentions. Moreover, nothing in these Preliminary Invalidity Contentions shall be treated as an admission that any of the Defendants' accused technology meets any limitations of the Asserted Claims.

Pursuant to the OGP, Defendants have provided disclosures and related documents pertaining to only the Asserted Claims identified by Plaintiff in its Preliminary Infringement Contentions.

Much of the prior art identified below reflects common knowledge and the state of the art prior to the filing dates of the Asserted Patents.

Each of the Asserted Claims is anticipated by and/or obvious in view of one or more items of prior art identified here, alone or in combination with other references identified. Specific examples of this anticipation and obviousness, along with the motivation to combine the identified prior art, are set forth in Section IV, *infra*. Each of the Asserted Claims is further invalid for indefiniteness, lack of written description, or lack of enablement, as set forth in Section V, *infra*. Each of the Asserted Claims is further invalid for claiming patent-ineligible subject matter, as set forth in Section VI, *infra*. Defendants reserve the right to assert additional theories of invalidity not addressed or required to be disclosed in these Preliminary Invalidity Contentions.

In addition to the prior art identified below and the accompanying invalidity claim charts, Defendants also incorporate by reference any prior art disclosed at any time during the prosecution of the Asserted Patents or related patents, by parties in the present litigation, or by any party during

any other past, present, or future litigation or U.S. Patent and Trademark Office proceeding involving the Asserted Patents, related patents, or other patents owned by Plaintiff involving related technologies.

I. PRIORITY OF THE ASSERTED PATENTS

In its Preliminary Infringement Contentions and communications with Defendants, Plaintiff contends that the Asserted Patents are entitled at least to the priority date of U.S. Provisional Application No. 61/129,898, filed on July 28, 2008 ("the '898 application"). Plaintiff further claims a conception date for the inventions claimed in the Asserted Patents of February 4, 2008, but has offered no evidence to justify such a conception date. Instead, Plaintiff appears to have taken the position that it may rely on a privilege log to prove that the inventors conceived any inventions described in the '898 application as of February 4, 2008, because that is the date that the applicants' patent prosecutors began working on this application. This approach is wrong as a matter of law, however, for multiple reasons. For instance, the attorney-client privilege may not be used as both a sword and a shield and, if Plaintiff wishes to rely on privileged communications or attorney work product to establish a date of invention, it cannot simultaneously claim privilege over the work product and communications in question. Moreover, an invention date must be proven either by an actual or constructive reduction to practice. Although the filing of a patent application (*i.e.*, something that becomes of public record and allows the public to understand the metes and bounds of any invention) is deemed under the law to be a constructive reduction to practice, communications with attorneys or attorney work product about the application or invention are ***not*** a constructive reduction to practice. *See, e.g.*, MPEP §2138.05 ("Reduction to practice may be an actual reduction or a constructive reduction to practice ***which occurs when a patent application on the claimed invention is filed***."); *Stub v. United States*, 63 F. Supp. 748, 749–50 (Ct. Cl. 1946) ("Conception may be evidenced by drawings and disclosure

to others, but until reduction to practice occurs the inventive act is not complete.... It has been a long standing rule of the Patent Office and the courts that in lieu of an actual reduction to practice, the filing of an allowable patent application in the Patent Office will be considered as a constructive reduction to practice and a completion of the invention. In the present instance the plaintiff had no actual reduction to practice and accordingly must rely upon the filing date of his application as the completion of his invention."); *Gregg v. Coakwell*, 175 F.2d 575, 580–81 (C.C.P.A. 1949) (inventor's disclosure of invention to navy department neither eliminated the necessity of proving diligence on his part in making application for patent nor constituted constructive reduction to practice); *L-3 Commc'ns Corp. v. Sony Corp.*, No. 10-cv-734, 2013 WL 5942521 at *2 (D. Del. Oct. 16, 2013) (rejecting argument that constructive reduction to practice could occur during two to four months it took prosecutors to draft patent application); *In re Katz*, 687 F.2d 450, 454 (C.C.P.A. 1982) ("Unlike the filing of a patent application, the publication of an article is not deemed a constructive reduction to practice[.]").

Other than its improper reliance on a privilege log to allegedly establish a priority date of February 4, 2008, Plaintiff has provided no other evidence to support this priority date and it is now too late to do so. *See* OGP at 1; Scheduling Order (Dkt. 27) at 3.

Defendants further dispute Plaintiff's contention that the Asserted Claims are entitled to a July 28, 2008 priority date. Plaintiff's Preliminary Invalidity Contentions provide no explanation or support for the Asserted Claims being entitled to that alleged priority date. Defendants dispute any contention by Plaintiff that the Asserted Claims are entitled to claim priority to the '898 application. That provisional patent application fails to provide written description support for one or more limitations of the Asserted Claims. To the extent that Plaintiff is later permitted to modify, and in fact modifies in any manner, the alleged priority date for the Asserted Claims, Defendants reserve the right to respond and challenge that date. Defendants further reserve the

right to amend and/or supplement these Preliminary Invalidity Contentions in response to any modification of the alleged priority date.

II. STATE OF THE ART

The references identified herein and discussed in the attached Exhibits may be relied on to show the state of the art in the relevant timeframe. For example, the Domain Name System ("DNS") used in the Internet and other Internet Protocol ("IP") networks was developed at least as early as the 1980s by Paul Mockapetris and others involved with the Internet Engineering Task Force ("IETF"). Mockapetris and others published numerous Requests for Comment ("RFC") regarding DNS, including, for example, RFC 882 and 883 in November 1983 and RFC 1034 and 1035 in November 1987.

This prior art identification is only exemplary and is not in any way intended to limit the scope of what one of ordinary skill in the art would have understood at the relevant time-period of the alleged inventions or the breadth of the state of the art to which the alleged inventions of the Asserted Patents relate. Defendants reserve the right to rely upon additional prior art, information, testimony, and/or knowledge to demonstrate what one of ordinary skill in the art would have understood prior to the date of the alleged invention of the Asserted Claims.

Defendants may further rely upon the Admitted Prior Art disclosed in the Asserted Patents, including but not limited to the concepts discussed therein and the following exemplary admissions:

- "The mobile telephone 12 is configured to place calls over a mobile telephone network, illustrated generally at 15, in a manner well-known in the art. Furthermore, the mobile telephone 12 and the access server 14 are configured to communicate with each other, preferably on a non-voice network illustrated generally at 16, such as a 'WiFi' wireless IP network or a General Packet Radio Service (GPRS) network, for example. However, in alternative embodiments, the mobile telephone 12 and the access server 14 may communicate with each other over other networks, such as a mobile telephone network using Short Message

Service (SMS) messages, for example." '234 patent at 9:6-17; '721 patent at 9:9-20.

- "Block 106 directs the microprocessor 52 to transmit, using the non-voice network interface 70 in the illustrated embodiment, an access code request message, the access code request message including the callee identifier obtained at block 104, to the access server (illustrated in FIG. 1). In general, preferably block 106 directs the microprocessor 52 to cause an access code request message to be transmitted to the access server 14 over a non-voice network, such as an internet, using WiFi or GPRS technology for example. However, it will be appreciated that block 106 may direct the microprocessor to transmit an access code request message to the access server 14 using any suitable technique, which may alternatively include a voice network, for example." '234 patent at 11:44-57; '721 patent at 11:51-64.

- "The process 190 begins at 192, in response to an interrupt created by or for the microprocessor 152 when it receives an access code request message 110 (as illustrated in FIG. 4) from the mobile telephone (12). In the illustrated embodiment, the access code request message (110) is received via the non-voice network interface 162 through a non-voice network (16) such as a WiFi or GPRS network, for example. However, it will be appreciated that other embodiments may use different techniques for receiving the access code request message (110) from the mobile telephone (12)." '234 patent at 14:20-29; '721 patent at 14:30-39.

- "In the illustrated embodiment, the codes in block 198 direct the microprocessor 152 to transmit the access code reply message (140) using the non-voice network interface 162 to the non-voice network 16, which may be a WiFi or GPRS network, for example. However, it will be appreciated that other embodiments may employ other types of networks for communicating the access code reply message (140) to the mobile telephone (12). The process 190 is then ended." '234 patent at 14:57-65; '421 patent at 14:67-15:8.

- "For example, it has been found that services available from web sites such as http://www.ip2location.com/ and http://www.serviceobjects.com/products/dots_ipgeo.asp, for example, can produce a name of a location, and also latitude and longitude values, associated with an IP address. Using this information derived from an IP address, or other information form the location identifier field (119), a local calling area may be identified by hierarchical jurisdictional designations (such as country, provide, and city in Canada or country, state, and city in the United States) and encoded as codes identifying the local calling area. The codes may then be stored in the local calling area identifier store 245." '234 patent at 17:7-18; '721 patent at 17:19-30.

- "It has been found that information available from web sites such as http://en.wikipedia.org/wiki/List_of_NANP_area_codes, and services available from web sites such as http://www.serviceobjects.com/demos/PhoneExchangeDemo.asp, for example, may be used to determine a local calling area identifier associated with a given

access code where, for example, the access code is a PSTN telephone number." '234 patent at 18:20-27; '721 patent at 18:36-43.

- "For example, in accordance with conventional database design that is well-known in the art, the records illustrated in the access code associate table 170 illustrated in FIG. 10 may alternatively be organized in a binary tree according to the value in the local calling area identifier field 171, or in separate tables for respective local calling area identifiers, for example, in order to enable a more efficient search of the access code association table for an access code that satisfies the aforementioned criteria. Therefore, the access code association table (170) and the process 270 illustrated in FIG. 12 are examples only, and one of ordinary skill in the art will readily appreciate numerous alternative data structures and algorithms." '234 patent at 22:48-60; '721 patent at 22:64-23:10.

- "The I/O port 306 includes a channel interface 308, which, in the illustrated embodiment, is in communication with the channels 20, 22, and 24 that were also illustrated in FIG. 1. Where, as in the illustrated embodiment, the channels 20, 22, and 24 are PSTN telephone lines in the PSTN telephone network 29, the channel interface 308 may, for example, be a T1 port for communication with one or more T1 lines (illustrated at 27 in FIG. 1) of a PSTN service provider, in a manner well-known in the art. The I/O port in the illustrated embodiment also includes an internet interface 309 for interfacing with the IP network 26 illustrated in FIG. 1. The program memory 304 stores blocks of codes for directing the microprocessor 302 to carry out the functions of the gateway (18). It has been found that the AS5350 Universal Gateway available from Cisco Systems, Inc. of San Jose, Calif., may, for example, be suitable as the gateway (18)." '234 patent at 23:3-19; '721 patent at 23:21-37.

Defendants may also rely on certain prior art technologies and/or prior art references as describing or indicating the state of the art, as known to a person of skill in the art at the time of the alleged invention. These include all technologies and references cited in the Asserted Patents and related patent applications and/or raised during any proceedings before the U.S. Patent and Trademark Office. Defendants may rely on articles, publications, textbooks and/or physical devices to establish the state of the art at the time of the alleged inventions.

For the Asserted Patents, at a minimum, the following technologies and references were part of the state of the art and would have been known to a person of skill in the art, at the time of the alleged invention:

- Mobile and wireless devices that interface and form connections using both the public switched telephone network (PSTN) and wireless or IP networks.
- Use of a WiFi network to connect a mobile device to an IP network or the public switched telephone network (PSTN).
- Communication path setup or access code request messages that identify a destination node and/or callee identifier.
- Use of the IP address of a wireless device as a location identifier.
- Use of user-configured device location identifiers.
- Use of location identifiers pre-associated with a mobile device.
- Communication path setup or access code response messages that provide an access code in the form of a telephone number or an IP address.
- Channel resource reservations or access codes drawn from a pool of access codes.
- Channel resource reservations or access codes that expire after a period of time.
- Communication of timestamps to identify the expiration of assigned resources or codes.
- Terminals or wireless devices that construct a connection by transmitting an access code request message followed by receiving an access code response message followed by call establishment.
- A network node or access server that communicates with terminal or wireless devices in an exchange of messages to provide routing and to identify a channel resource or access code for communication.
- A network node or routing controller that identifies and reserves channel resources or access codes identifying a communication channel for subsequent communication between a wireless device and a destination node.
- Use of location data for the callee or called device during routing or selection of access codes for a communication channel.
- Selection of an access code based on calling area reflected in location information.
- Use of a mobile device with a processor, software and network interfaces to implement communication protocols was known to persons of ordinary skill in the art.
- Use of a server with a processor, software and network interfaces to implement communication protocols with terminal devices.

- Use of a WiFi network to communicate between a mobile device or wireless terminal and communication network elements.
- Use of DNS queries.
- A gateway that bridges communications traffic between networks of different types.
- A communication path that includes both an Internet based domain and a traditional public switched telephone network (PSTN) domain.
- Using an IP address to help determine the geographic location of a user
- Voice Over Internet Protocol ("VoIP") servers
- VoIP clients
- VoIP to PSTN gateways
- PC2Phone and Phone2PC gateways
- H.323 gatekeepers
- H.323 multiple endpoint servers
- SIP session border controllers
- SIP routers
- SIP registration servers
- IAX server and clients
- IP Telephony server and clients
- Call center servers
- IVR engines
- Prepaid and postpaid cards systems
- Caller ID
- Containerization

III. IDENTIFICATION OF PRIOR ART

In addition to the prior art identified in the Asserted Patents and their prosecution histories, Defendants intend to rely upon the prior art identified below. Defendants identify each item of prior art based on currently available information and reserves the right to amend the information provided and/or provide further information as it becomes known to them.

In accordance with the OGP, Defendants attach Exhibits containing claim charts identifying prior art that anticipates and/or renders obvious each Asserted Claim. To the extent the attached claim charts cite to a reference for each element or limitation of an asserted claim, Defendants contend that such reference anticipates that claim. In the alternative, Defendants contend that each Asserted Claim is rendered obvious for the reasons set forth in this document and the attached claim charts.

Defendants' identification of patents and publications as prior art here and in the attached Exhibits under 35 U.S.C. §§ 102 and 103 includes the patents and publications themselves, as well as the use, sale, and/or offer for sale of any products, devices, and systems described. Although Defendants' investigation continues, information available to date indicates that such products, devices, and systems were known or used in the United States before the alleged invention of the claimed subject matter of the Asserted Claims, and/or were invented by another who did not abandon, suppress, or conceal, before the alleged invention of the claimed subject matter of the Asserted Claims. Upon information and belief, these prior art products, devices, and systems and their associated references anticipate and/or render obvious each of the Asserted Claims. Defendants further intend to rely on inventor admissions concerning the scope of the prior art relevant to the Asserted Patents found in, *inter alia*, the prosecution history of the Asserted Patents and any related patents, patent applications, and/or reexaminations; any deposition testimony of

the named inventor of the Asserted Patents; and the papers and evidence submitted by Plaintiff in conjunction with this litigation.

Defendants reserve the right to rely upon additional evidence of invalidity obtained from third parties in the future. In addition, Defendants reserve the right to assert invalidity on additional bases under 35 U.S.C. § 102 to the extent that further investigation and discovery yield information forming the basis for such claims.

Defendants contend that each Asserted Claim is invalid at least under 35 U.S.C. § 102, including 35 U.S.C. §§ 102(a), 102(b), 102(e), and 102(g), and/or under 35 U.S.C. § 103 as set forth in the attached Exhibits A1–A41 and B1–B41. Pursuant to the OGP, Defendants identify in these charts prior art patents, publications, disclosures, products/devices/systems, and uses that anticipate or render obvious the Asserted Claims under 35 U.S.C. §§ 102 and/or 103.

A. Prior Art References and Patents

Defendants contend that the following references anticipate or render obvious (alone, or in combination with each other or other references) one or more of the Asserted Claims under 35 U.S.C. § 102 and/or 35 U.S.C. § 103.

Reference	Filing Date	Publication/Issue Date
GB 2 331 197 A ("Hallenstal")	Nov. 11, 1997	May. 12, 1999
US 2002/0051518 ("Bondy")	Apr. 5, 2001	May 2, 2002
US 2003/0091028 ("Chang")	Mar. 4, 2002	May 15, 2003
US 2005/0058125 ("Mutikainen")	Mar. 15, 2004	Mar. 17, 2005
US 2005/0195762 ("Longoni")	Aug. 31, 2004	Sept. 8, 2005
US 2005/0249134	July 15, 2005	Nov. 10, 2005
US 2006/0034270 ("Haase")	Aug. 10, 2004	Feb. 16, 2006 (US 2006/0034270) July 7, 2009 (US 7,558,254)

Reference	Filing Date	Publication/Issue Date
US 2006/0093135 (“Fiatal”)	Oct. 20, 2005	May 4, 2006
US 2008/0037729 (“Mobin”)	Aug. 13, 2007	Feb. 14, 2008
US 2008/0137642 (“Teodosiu”)	Dec. 8, 2006	June 12, 2008
US 2008/0167039 (“Guedalia”)	Nov. 30, 2007	July 10, 2008 (US 2008/0157039) Aug. 4, 2015 (US 9,100,500)
US 2009/0047922 (“Buckley ’922”)	Aug. 13, 2007	Feb. 19, 2009
US 2009/0257428 (“Brooks”)	April 11, 2008	Oct. 15, 2009 (US 2009/0257428) July 30, 2013 (US 8,498,222)
US 2009/0262727 (“Kaal”)	June 6, 2008	Oct. 22, 2009
US 6,044,263 (“Valentine”)	Dec. 18, 1996	Mar. 28, 2000
US 6,731,630	Feb. 29, 2000	May 4, 2004
US 6,850,762 (“Ala-Luukko”)	June 22, 2000	Feb. 1, 2005
US 6,954,654 (“Ejzak”)	July 31, 2001	Feb. 6, 2003 (US 2003/0027595) Oct. 11, 2005 (US 6,954,654)
US 7,016,675 (“Schuster”)	Sept. 27, 1999	Mar. 21, 2006
US 7,027,582 (“Khello”)	July 6, 2001	Apr. 11, 2005
US 7,127,488	July 23, 2002	Oct. 24, 2006
US 7,212,522 (“Shankar”)	July 8, 2004	May 1, 2007
US 7,453,990 (“Welenson”)	June 22, 2004	Aug. 11, 2005 (US 2005/0175166)
US 7,602,886 (“Beech”)	July 20, 2005	Oct. 13, 2009
US 7,668,159 (“Buckley ’159”)	Aug. 3, 2007	Feb. 23, 2010
US 7,710,950 (“Buckley ’950”)	Apr. 25, 2007	Nov. 29, 2007 (US 2007/0274289) Aug. 9, 2011
US 7,995,565 (“Buckley ’565”)	Oct. 3, 2006	Apr. 3, 2008 (US 2008/0080480 A1) Aug. 9, 2011

Reference	Filing Date	Publication/Issue Date
US 8,731,163 B2 (“Bates”)	May 9, 2007	May 20, 2014
US 10,623,900 (“Garcia”)	Feb. 6, 2008	Apr. 14, 2020
WO 2005/077054 (“Citron”)	Feb. 10, 2005	Aug. 25, 2005
WO 2005/107289 (“Aguilar”)	Apr. 21, 2005	Nov. 10, 2005
WO 2005/122541 (“Barnes ’541”)	Jun. 14, 2005	Dec. 22, 2005
WO 2005/125163 (“Barnes ’163”)	Jun. 17, 2005	Dec. 29, 2005
WO 2008/027065	Oct. 10, 2006	Mar. 6, 2008
“Session Initiation Protocol,” Cisco Press	N/A	Oct. 16, 2006
“Understanding and Troubleshooting Call Routing and Dial Pattern Problems with Cisco CallManager”	N/A	July 18, 2006
Access to Emergency Calls Based on Voice Over IP (“ECC Report”)	N/A	Oct. 2005
Cisco CallManager Fundamentals	N/A	Sept. 2005
D. Libes, “Choosing a Name for Your Computer,” RFC 1178, Network Working Group	N/A	August 1990
D. Terry, et al., “The Berkeley Internet Name Domain Server,” USENIX Association Software Tools Users Group	N/A	June 12-15, 1984
G. Carter, “LDAP System Administration,” O’Reilly Media	N/A	Mar. 27, 2003
J. Postel, “Domain Name Structure and Delegation,” RFC 1591, Network Working Group	N/A	March 1994
J.Dilley, et al., “Globally Distributed Content Delivery,” IEEE Internet Computing	N/A	September-October 2002

Reference	Filing Date	Publication/Issue Date
M. Crawford, “Non-Terminal DNS Name Redirection,” RFC 2672, Network Working Group	N/A	August 1999
M. Ohta, “Incremental Zone Transfer in DNS,” RFC 1995, Network Working Group	N/A	August 1996
P. Mockapetris, “Domain Names - Concepts and Facilities,” RFC 1034, Network Working Group	N/A	November 1987
P. Mockapetris, “Domain Names - Concepts and Facilities,” RFC 882, Network Working Group	N/A	November 1983
P. Mockapetris, “Domain Names - Implementation and Specification,” RFC 1035, Network Working Group	N/A	November 1987
P. Mockapetris, “Domain Names - Implementation and Specification,” RFC 883, Network Working Group	N/A	November 1983
P. Mockapetris, “Domain System Changes and Observations,” RFC 973, Network Working Group	N/A	January 1986
P. Vixie, “A Mechanism for Prompt Notification of Zone Changes,” RFC 1996, Network Working Group	N/A	August 1996
P. Vixie, et al., “Dynamic Updates in the Domain Name System,” RFC 2136, Network Working Group	N/A	April 1997
R. Braden, “Requirements for Internet Hosts -- Application and Support,” RFC 1123, Network Working Group	N/A	October 1989
R. Elz, et al., “Clarifications to the DNS Specification,” RFC 2181, Network Working Group	N/A	July 1997

Reference	Filing Date	Publication/Issue Date
RFC 2661—Layer Two Tunneling Protocol 'L2TP ("RFC 2661")	N/A	Aug. 1999
RFC 3924—Cisco Architecture for Lawful Intercept in IP Networks ("RFC 3924")	N/A	Oct. 2004
V. Padmanabhan, et al., "An Investigation of Geographic Mapping Techniques for Internet Hosts" SIGCOMM '01	N/A	August 2001

B. Prior Art Systems

In addition to any prior art systems that may correspond to the references in the table above, Defendants contend that the following prior art systems that were in public use, on sale, or otherwise available to the public before the priority date of the Asserted Patents anticipate and/or render obvious one or more of the Asserted Claims under 35 U.S.C. § 102 and/or § 103.[3]

System	Date	Entities/Persons Involved
Altigen	March 1999	Altigen Communications Inc.
StarVox	January 2001	StarVox, Inc.
BroadWorks	2001	BroadSoft, Inc. (acquired by Cisco Systems)
Cisco Dial Plan	2001	Cisco Systems, Inc.
DialPad	2001	DialPad Communications, Inc.; Yahoo! Inc.; Craig Walker

[3] Defendants Google, T-Mobile, and Meta have not yet obtained through discovery non-public information about prior art systems BroadWorks and Cisco CallManager and have therefore not yet reviewed such non-public information about these systems; however, on information and belief, Google, T-Mobile, and Meta contend that these systems are relevant to the materiality of the Asserted Patents as set forth in this cover pleading and in Exhibits A34/B34 and A37/B37.

System	Date	Entities/Persons Involved
Cisco CallManager	Various versions from 2001 and later	Cisco Systems, Inc.
Asterisk	March 2003	Digium Inc. (now Sangoma Technologies, Inc.
PopStar	April 2003	PopStar Global Communications
IP Communications, Worldcom Connection and MCI Advantage ("MCI Systems")	July 2003	MCI Inc.
Vonage	No later than Sept. 2003	Vonage Holdings Corp.
Verizon VoiceWing	July 2004	Verizon
CallVantage	2004	AT&T Inc.
Skype	No later than Jan. 2005	Skype Technologies (acquired by Microsoft Corp.)
Avaya Communication Manager	June 2005	Avaya Inc.
Digifonica	June 2005	Digifonica, Inc.
Skype 1.4	No later than Oct. 2005	Skype Technologies (acquired by Microsoft Corp.)
GrandCentral	2005	GrandCentral Communications, Inc.; Craig Walker; Vincent Paquet
Tenor Call Routing	No later than 2005	Quintum Technologies Inc.
Sylantro	2006	Sylantro Systems (acquired by BroadSoft and then Cisco Systems)

Defendants intend to seek discovery regarding the above-mentioned prior art systems, in addition to other prior art systems that may be related to patent and publication references disclosed

in these contentions. Defendants will supplement these contentions to incorporate such discovery as warranted.

C. Admitted Prior Art

Defendants contend that the Admitted Prior Art as set forth in the Asserted Patents and their prosecution history, certain examples of which are discussed above in Section II, anticipates or renders obvious (alone, or in combination with each other or other references) one or more of the Asserted Claims under 35 U.S.C. § 102 and/or 35 U.S.C. § 103.

IV. INVALIDITY OF THE ASSERTED CLAIMS UNDER 35 U.S.C. §§ 102 AND 103

Each of the Asserted Claims is anticipated by and/or obvious in view of at least one or more items of prior art, including those identified above in Section III, alone or in combination. Defendants have attached, as Exhibits A1–A41 and B1–B41, claim charts identifying examples of prior art that anticipate and/or render obvious each Asserted Claim. Those claim charts are identified in the following table:

Reference	'234 Patent Claim Chart	'721 Patent Claim Chart
Hallenstal	Ex. A1	Ex. B1
Bondy	Ex. A2	Ex. B2
Chang	Ex. A3	Ex. B3
Mutikainen	Ex. A4	Ex. B4
Longoni	Ex. A5	Ex. B5
Haase	Ex. A6	Ex. B6
Fiatal	Ex. A7	Ex. B7
Teodosiu	Ex. A8	Ex. B8
Guedalia	Ex. A9	Ex. B9
Buckley '922	Ex. A10	Ex. B10
Brooks	Ex. A11	Ex. B11
Kaal	Ex. A12	Ex. B12
Valentine	Ex. A13	Ex. B13

Ejzak	Ex. A14	Ex. B14
Ala-Luukko	Ex. A15	Ex. B15
Schuster	Ex. A16	Ex. B16
Khello	Ex. A17	Ex. B17
Shankar	Ex. A18	Ex. B18
Welenson	Ex. A19	Ex. B19
Beech	Ex. A20	Ex. B20
Buckley ’159	Ex. A21	Ex. B21
Buckley ’950	Ex. A22	Ex. B22
Buckley ’565	Ex. A23	Ex. B23
Bates	Ex. A24	Ex. B24
Garcia	Ex. A25	Ex. B25
Citron	Ex. A26	Ex. B26
Aguilar	Ex. A27	Ex. B27
Barnes ’541	Ex. A28	Ex. B28
Barnes ’163	Ex. A29	Ex. B29
ECC Report	Ex. A30	Ex. B30
Cisco CallManager Fundamentals	Ex. A31	Ex. B31
RFC 2661	Ex. A32	Ex. B32
RFC 3924	Ex. A33	Ex. B33
BroadWorks	Ex. A34	Ex. B34
Cisco Dial Plan	Ex. A35	Ex. B35
DialPad	Ex. A36	Ex. B36
Cisco CallManager	Ex. A37	Ex. B37
MCI Systems	Ex. A38	Ex. B38
Verizon VoiceWing	Ex. A39	Ex. B39
Avaya Communication Manager	Ex. A40	Ex. B40
GrandCentral	Ex. A41	Ex. B41

To the extent the above-identified claim charts cite to a single reference for each element or limitation of an asserted claim, Defendants contend that such reference anticipates that claim.

Persons of ordinary skill in the art generally read a prior art reference as a whole and in the context of other publications and literature. Thus, to understand and interpret any specific statement or disclosure within a prior art reference, such persons would rely on other information within the reference, along with other publications and their general scientific knowledge. As noted above, Defendants will rely upon the prior art references identified herein in their entirety, including uncited portions.

Many of the references refer to and rely on the use of signaling and transport protocols that would be well known to a person of ordinary skill in the art more than one year before the filing date of the patents. These protocols include the Session Initiation Protocol ("SIP"), defined in IETF RFC 3261; the User Datagram Protocol ("UDP"), defined in IETF RFC 768; the Internet Protocol ("IP"), defined in IETF RFC 791, on which SIP traffic is carried; the Domain Name Service ("DNS") specification, defined in IETF RFC 1035; and H.323 and H.225, which are standards for signaling used in VoIP communications.

A person of ordinary skill in the art more than one year before the filing of the patents in suit would have been very familiar with the SIP, UDP, IP, DNS, H.323, and H.225 specifications. The SIP, UDP, IP, and DNS specifications were produced by the Internet Engineering Task Force ("IETF"), which is the principal body for development of standards and protocols used by the Internet. UDP, IP, and DNS are fundamental to the operation of the Internet. SIP is widely used in call initiation for a variety of different types of communications and was widely used in Internet based telephony. The H.323 and H.225 specifications were developed by the International Telecommunications Union ("ITU"), the principal body for development of international telecommunications standards, and are the predominant standards for VoIP signaling. Each of

these standards were developed before 2005, and were then, and remain, readily obtainable from these bodies.

When references refer to these specifications, a person of ordinary skill in the art would understand the reference to be relying on and incorporating the details of the specific protocols and messaging formats described in the SIP, UDP, IP, DNS, H.323, and H.225 specifications as elements of the system that the reference discloses. Persons of ordinary skill in the art reading references that refer to these specifications would understand the system described in the reference in conjunction with the protocols described in the SIP, UDP, IP, DNS, H.323, and/or H.225 specifications. References that refer to and rely on these specifications, therefore, are to be read in combination with these specifications.

Defendants reserve the right to amend or supplement these contentions regarding anticipation and/or obviousness of the Asserted Claims as appropriate, including in response to further information from Plaintiff or information obtained through discovery. Plaintiff has not identified what elements or combinations it alleges were not known to one of ordinary skill in the art at the time of the alleged inventions. Therefore, for any claim limitation that Plaintiff alleges is not disclosed in a particular prior art reference, Defendants reserve the right to assert that any such limitation is either inherent in the disclosed reference or obvious to one of ordinary skill in the art at the time in light of the same, or that the limitation is disclosed in another of the references disclosed above and in combination would have rendered the Asserted Claims obvious.

In addition to Defendants' contentions regarding anticipation, it would have been obvious to one of ordinary skill in the art to combine any of the references listed above to arrive at the claimed invention. The combination of familiar elements according to known methods is obvious here because it yielded predictable results. A person of ordinary skill in the art would have been

motivated to combine the various teachings by considerations of efficiency, effectiveness, convenience, cost-savings, and accessibility.

The Asserted Claims are directed to obvious combinations of old and familiar steps or elements, each performing the same function it has long been known to perform, which yield nothing more than predictable results. Put another way, the claimed subject matter is obvious because it is nothing more than (i) combinations of prior art elements according to known methods to yield predictable results, (ii) simple substitutions of one known element for another to yield predictable results, (iii) use of known techniques to improve similar devices in the same way, (iv) applications of known techniques to known devices ready for improvement to yield predictable results, (v) obvious to try. One of skill in the art would have been motivated to either modify the prior art identified herein or to combine that prior art in the manner indicated due to, for example, their background knowledge, design incentives, effects of demands known to the design community, or other market forces, in particular the desire to exchange data with a portable electronic device. In view of the simplicity of the claimed subject matter and its use of well-known components with recognized benefits, the common sense of those skilled in the art also would have served as a motivation to combine any of the identified references and demonstrates that the Asserted Claims would be obvious.

Defendants contend, in the alternative, that each Asserted Claim is rendered obvious by the above-charted references alone, when those above-charted references are combined with the knowledge of a person skilled in the art. The Asserted Claims are obvious in view of the state of the prior art (including Admitted Prior Art) alone and/or in combination with the references described in the above-referenced Exhibits, as well as the other references and disclosures described here. The alleged "inventions" claimed in the Asserted Claims would have been obvious because the prior art, common knowledge, and the nature of the problems, viewed through the

eyes of a person ordinarily skilled in the art, suggested the claimed elements. A person of ordinary skill in the relevant fields would have possessed knowledge and skills rendering him or her capable of combining the prior art references with knowledge in the field and common sense. Moreover, the asserted claims represent well-known combinations of familiar and pre-existing elements, yielding only predictable results. Additional reasons that a person of ordinary skill in the art would have been motivated to combine the identified prior art are provided in other portions of these Preliminary Invalidity Contentions.

To the extent that any element of any Asserted Claims is deemed missing from any of the references charted in Exhibits A1–A41 and B1–B41, Defendants contend that any such missing element could be found in another reference identified in these Preliminary Invalidity Contentions or the attached Exhibits. For instance, the table below shows how any of the above-referenced charts could be combined with one another to create combinations that would render the Asserted Claims invalid:

Primary reference	**In combination with one or more of these references**
Hallenstal	Bondy Chang Mutikainen Longoni Haase Fiatal Teodosiu Guedalia Buckley ’922 Brooks Kaal Valentine Ejzak Ala-Luukko Schuster Khello Shankar Welenson

Primary reference	In combination with one or more of these references
	Beech Buckley ’159 Buckley ’950 Buckley ’565 Bates Garcia Citron Aguilar Barnes ’541 Barnes ’163 ECC Report Cisco CallManager Fundamentals RFC 2661 RFC 3924 BroadWorks Cisco Dial Plan DialPad Cisco CallManager MCI Systems Verizon VoiceWing Avaya Communication Manager GrandCentral
Bondy	Chang Mutikainen Longoni Haase Fiatal Teodosiu Guedalia Buckley ’922 Brooks Kaal Valentine Ejzak Ala-Luukko Schuster Khello Shankar Welenson Beech Buckley ’159 Buckley ’950 Buckley ’565

Primary reference	In combination with one or more of these references
	Bates Garcia Citron Aguilar Barnes ’541 Barnes ’163 ECC Report Cisco CallManager Fundamentals RFC 2661 RFC 3924 BroadWorks Cisco Dial Plan DialPad Cisco CallManager MCI Systems Verizon VoiceWing Avaya Communication Manager GrandCentral Hallenstal
Chang	Mutikainen Longoni Haase Fiatal Teodosiu Guedalia Buckley ’922 Brooks Kaal Valentine Ejzak Ala-Luukko Schuster Khello Shankar Welenson Beech Buckley ’159 Buckley ’950 Buckley ’565 Bates Garcia Citron Aguilar

Primary reference	In combination with one or more of these references
	Barnes ’541 Barnes ’163 ECC Report Cisco CallManager Fundamentals RFC 2661 RFC 3924 BroadWorks Cisco Dial Plan DialPad Cisco CallManager MCI Systems Verizon VoiceWing Avaya Communication Manager GrandCentral Hallenstal Bondy
Mutikainen	Longoni Haase Fiatal Teodosiu Guedalia Buckley ’922 Brooks Kaal Valentine Ejzak Ala-Luukko Schuster Khello Shankar Welenson Beech Buckley ’159 Buckley ’950 Buckley ’565 Bates Garcia Citron Aguilar Barnes ’541 Barnes ’163 ECC Report Cisco CallManager Fundamentals

Primary reference	In combination with one or more of these references
	RFC 2661 RFC 3924 BroadWorks Cisco Dial Plan DialPad Cisco CallManager MCI Systems Verizon VoiceWing Avaya Communication Manager GrandCentral Hallenstal Bondy Chang

Primary reference	In combination with one or more of these references
Longoni	Haase Fiatal Teodosiu Guedalia Buckley ’922 Brooks Kaal Valentine Ejzak Ala-Luukko Schuster Khello Shankar Welenson Beech Buckley ’159 Buckley ’950 Buckley ’565 Bates Garcia Citron Aguilar Barnes ’541 Barnes ’163 ECC Report Cisco CallManager Fundamentals RFC 2661 RFC 3924 BroadWorks Cisco Dial Plan DialPad Cisco CallManager MCI Systems Verizon VoiceWing Avaya Communication Manager GrandCentral Hallenstal Bondy Chang Mutikainen
Haase	Fiatal Teodosiu Guedalia

Primary reference	In combination with one or more of these references
	Buckley ’922 Brooks Kaal Valentine Ejzak Ala-Luukko Schuster Khello Shankar Welenson Beech Buckley ’159 Buckley ’950 Buckley ’565 Bates Garcia Citron Aguilar Barnes ’541 Barnes ’163 ECC Report Cisco CallManager Fundamentals RFC 2661 RFC 3924 BroadWorks Cisco Dial Plan DialPad Cisco CallManager MCI Systems Verizon VoiceWing Avaya Communication Manager GrandCentral Hallenstal Bondy Chang Mutikainen Longoni
Fiatal	Teodosiu Guedalia Buckley ’922 Brooks Kaal Valentine

Primary reference	In combination with one or more of these references
	Ejzak Ala-Luukko Schuster Khello Shankar Welenson Beech Buckley ’159 Buckley ’950 Buckley ’565 Bates Garcia Citron Aguilar Barnes ’541 Barnes ’163 ECC Report Cisco CallManager Fundamentals RFC 2661 RFC 3924 BroadWorks Cisco Dial Plan DialPad Cisco CallManager MCI Systems Verizon VoiceWing Avaya Communication Manager GrandCentral Hallenstal Bondy Chang Mutikainen Longoni Haase
Teodosiu	Guedalia Buckley ’922 Brooks Kaal Valentine Ejzak Ala-Luukko Schuster Khello

Primary reference	In combination with one or more of these references
	Shankar Welenson Beech Buckley ’159 Buckley ’950 Buckley ’565 Bates Garcia Citron Aguilar Barnes ’541 Barnes ’163 ECC Report Cisco CallManager Fundamentals RFC 2661 RFC 3924 BroadWorks Cisco Dial Plan DialPad Cisco CallManager MCI Systems Verizon VoiceWing Avaya Communication Manager GrandCentral Hallenstal Bondy Chang Mutikainen Longoni Haase Fiatal
Guedalia	Buckley ’922 Brooks Kaal Valentine Ejzak Ala-Luukko Schuster Khello Shankar Welenson Beech Buckley ’159

Primary reference	In combination with one or more of these references
	Buckley ’950 Buckley ’565 Bates Garcia Citron Aguilar Barnes ’541 Barnes ’163 ECC Report Cisco CallManager Fundamentals RFC 2661 RFC 3924 BroadWorks Cisco Dial Plan DialPad Cisco CallManager MCI Systems Verizon VoiceWing Avaya Communication Manager GrandCentral Hallenstal Bondy Chang Mutikainen Longoni Haase Fiatal Teodosiu
Buckley ’922	Brooks Kaal Valentine Ejzak Ala-Luukko Schuster Khello Shankar Welenson Beech Buckley ’159 Buckley ’950 Buckley ’565 Bates Garcia

Primary reference	In combination with one or more of these references
	Citron Aguilar Barnes ’541 Barnes ’163 ECC Report Cisco CallManager Fundamentals RFC 2661 RFC 3924 BroadWorks Cisco Dial Plan DialPad Cisco CallManager MCI Systems Verizon VoiceWing Avaya Communication Manager GrandCentral Hallenstal Bondy Chang Mutikainen Longoni Haase Fiatal Teodosiu Guedalia
Brooks	Kaal Valentine Ejzak Ala-Luukko Schuster Khello Shankar Welenson Beech Buckley ’159 Buckley ’950 Buckley ’565 Bates Garcia Citron Aguilar Barnes ’541 Barnes ’163

Primary reference	In combination with one or more of these references
	ECC Report Cisco CallManager Fundamentals RFC 2661 RFC 3924 BroadWorks Cisco Dial Plan DialPad Cisco CallManager MCI Systems Verizon VoiceWing Avaya Communication Manager GrandCentral Hallenstal Bondy Chang Mutikainen Longoni Haase Fiatal Teodosiu Guedalia Buckley ’922
Kaal	Valentine Ejzak Ala-Luukko Schuster Khello Shankar Welenson Beech Buckley ’159 Buckley ’950 Buckley ’565 Bates Garcia Citron Aguilar Barnes ’541 Barnes ’163 ECC Report Cisco CallManager Fundamentals RFC 2661 RFC 3924

Primary reference	In combination with one or more of these references
	BroadWorks Cisco Dial Plan DialPad Cisco CallManager MCI Systems Verizon VoiceWing Avaya Communication Manager GrandCentral Hallenstal Bondy Chang Mutikainen Longoni Haase Fiatal Teodosiu Guedalia Buckley ’922 Brooks
Valentine	Ejzak Ala-Luukko Schuster Khello Shankar Welenson Beech Buckley ’159 Buckley ’950 Buckley ’565 Bates Garcia Citron Aguilar Barnes ’541 Barnes ’163 ECC Report Cisco CallManager Fundamentals RFC 2661 RFC 3924 BroadWorks Cisco Dial Plan DialPad Cisco CallManager

Primary reference	In combination with one or more of these references
	MCI Systems Verizon VoiceWing Avaya Communication Manager GrandCentral Hallenstal Bondy Chang Mutikainen Longoni Haase Fiatal Teodosiu Guedalia Buckley ’922 Brooks Kaal
Ejzak	Ala-Luukko Schuster Khello Shankar Welenson Beech Buckley ’159 Buckley ’950 Buckley ’565 Bates Garcia Citron Aguilar Barnes ’541 Barnes ’163 ECC Report Cisco CallManager Fundamentals RFC 2661 RFC 3924 BroadWorks Cisco Dial Plan DialPad Cisco CallManager MCI Systems Verizon VoiceWing Avaya Communication Manager GrandCentral

Primary reference	In combination with one or more of these references
	Hallenstal Bondy Chang Mutikainen Longoni Haase Fiatal Teodosiu Guedalia Buckley ’922 Brooks Kaal Valentine
Ala-Luukko	Schuster Khello Shankar Welenson Beech Buckley ’159 Buckley ’950 Buckley ’565 Bates Garcia Citron Aguilar Barnes ’541 Barnes ’163 ECC Report Cisco CallManager Fundamentals RFC 2661 RFC 3924 BroadWorks Cisco Dial Plan DialPad Cisco CallManager MCI Systems Verizon VoiceWing Avaya Communication Manager GrandCentral Hallenstal Bondy Chang Mutikainen

Primary reference	In combination with one or more of these references
	Longoni Haase Fiatal Teodosiu Guedalia Buckley ’922 Brooks Kaal Valentine Ejzak
Schuster	Khello Shankar Welenson Beech Buckley ’159 Buckley ’950 Buckley ’565 Bates Garcia Citron Aguilar Barnes ’541 Barnes ’163 ECC Report Cisco CallManager Fundamentals RFC 2661 RFC 3924 BroadWorks Cisco Dial Plan DialPad Cisco CallManager MCI Systems Verizon VoiceWing Avaya Communication Manager GrandCentral Hallenstal Bondy Chang Mutikainen Longoni Haase Fiatal Teodosiu

Primary reference	In combination with one or more of these references
	Guedalia Buckley ’922 Brooks Kaal Valentine Ejzak Ala-Luukko
Khello	Shankar Welenson Beech Buckley ’159 Buckley ’950 Buckley ’565 Bates Garcia Citron Aguilar Barnes ’541 Barnes ’163 ECC Report Cisco CallManager Fundamentals RFC 2661 RFC 3924 BroadWorks Cisco Dial Plan DialPad Cisco CallManager MCI Systems Verizon VoiceWing Avaya Communication Manager GrandCentral Hallenstal Bondy Chang Mutikainen Longoni Haase Fiatal Teodosiu Guedalia Buckley ’922 Brooks Kaal

Primary reference	In combination with one or more of these references
	Valentine Ejzak Ala-Luukko Schuster
Shankar	Welenson Beech Buckley ’159 Buckley ’950 Buckley ’565 Bates Garcia Citron Aguilar Barnes ’541 Barnes ’163 ECC Report Cisco CallManager Fundamentals RFC 2661 RFC 3924 BroadWorks Cisco Dial Plan DialPad Cisco CallManager MCI Systems Verizon VoiceWing Avaya Communication Manager GrandCentral Hallenstal Bondy Chang Mutikainen Longoni Haase Fiatal Teodosiu Guedalia Buckley ’922 Brooks Kaal Valentine Ejzak Ala-Luukko Schuster

Primary reference	In combination with one or more of these references
	Khello
Welenson	Beech Buckley ’159 Buckley ’950 Buckley ’565 Bates Garcia Citron Aguilar Barnes ’541 Barnes ’163 ECC Report Cisco CallManager Fundamentals RFC 2661 RFC 3924 BroadWorks Cisco Dial Plan DialPad Cisco CallManager MCI Systems Verizon VoiceWing Avaya Communication Manager GrandCentral Hallenstal Bondy Chang Mutikainen Longoni Haase Fiatal Teodosiu Guedalia Buckley ’922 Brooks Kaal Valentine Ejzak Ala-Luukko Schuster Khello Shankar

Primary reference	In combination with one or more of these references
Beech	Buckley ’159 Buckley ’950 Buckley ’565 Bates Garcia Citron Aguilar Barnes ’541 Barnes ’163 ECC Report Cisco CallManager Fundamentals RFC 2661 RFC 3924 BroadWorks Cisco Dial Plan DialPad Cisco CallManager MCI Systems Verizon VoiceWing Avaya Communication Manager GrandCentral Hallenstal Bondy Chang Mutikainen Longoni Haase Fiatal Teodosiu Guedalia Buckley ’922 Brooks Kaal Valentine Ejzak Ala-Luukko Schuster Khello Shankar Welenson
Buckley ’159	Buckley ’950 Buckley ’565 Bates

Primary reference	In combination with one or more of these references
	Garcia Citron Aguilar Barnes ’541 Barnes ’163 ECC Report Cisco CallManager Fundamentals RFC 2661 RFC 3924 BroadWorks Cisco Dial Plan DialPad Cisco CallManager MCI Systems Verizon VoiceWing Avaya Communication Manager GrandCentral Hallenstal Bondy Chang Mutikainen Longoni Haase Fiatal Teodosiu Guedalia Buckley ’922 Brooks Kaal Valentine Ejzak Ala-Luukko Schuster Khello Shankar Welenson Beech
Buckley ’950	Buckley ’565 Bates Garcia Citron Aguilar Barnes ’541

Primary reference	In combination with one or more of these references
	Barnes ’163 ECC Report Cisco CallManager Fundamentals RFC 2661 RFC 3924 BroadWorks Cisco Dial Plan DialPad Cisco CallManager MCI Systems Verizon VoiceWing Avaya Communication Manager GrandCentral Hallenstal Bondy Chang Mutikainen Longoni Haase Fiatal Teodosiu Guedalia Buckley ’922 Brooks Kaal Valentine Ejzak Ala-Luukko Schuster Khello Shankar Welenson Beech Buckley ’159
Buckley ’565	Bates Garcia Citron Aguilar Barnes ’541 Barnes ’163 ECC Report Cisco CallManager Fundamentals RFC 2661

Primary reference	In combination with one or more of these references
	RFC 3924 BroadWorks Cisco Dial Plan DialPad Cisco CallManager MCI Systems Verizon VoiceWing Avaya Communication Manager GrandCentral Hallenstal Bondy Chang Mutikainen Longoni Haase Fiatal Teodosiu Guedalia Buckley ’922 Brooks Kaal Valentine Ejzak Ala-Luukko Schuster Khello Shankar Welenson Beech Buckley ’159 Buckley ’950
Bates	Garcia Citron Aguilar Barnes ’541 Barnes ’163 ECC Report Cisco CallManager Fundamentals RFC 2661 RFC 3924 BroadWorks Cisco Dial Plan DialPad

Primary reference	In combination with one or more of these references
	Cisco CallManager MCI Systems Verizon VoiceWing Avaya Communication Manager GrandCentral Hallenstal Bondy Chang Mutikainen Longoni Haase Fiatal Teodosiu Guedalia Buckley ’922 Brooks Kaal Valentine Ejzak Ala-Luukko Schuster Khello Shankar Welenson Beech Buckley ’159 Buckley ’950 Buckley ’565
Garcia	Citron Aguilar Barnes ’541 Barnes ’163 ECC Report Cisco CallManager Fundamentals RFC 2661 RFC 3924 BroadWorks Cisco Dial Plan DialPad Cisco CallManager MCI Systems Verizon VoiceWing Avaya Communication Manager

Primary reference	In combination with one or more of these references
	GrandCentral Hallenstal Bondy Chang Mutikainen Longoni Haase Fiatal Teodosiu Guedalia Buckley ’922 Brooks Kaal Valentine Ejzak Ala-Luukko Schuster Khello Shankar Welenson Beech Buckley ’159 Buckley ’950 Buckley ’565 Bates
Citron	Aguilar Barnes ’541 Barnes ’163 ECC Report Cisco CallManager Fundamentals RFC 2661 RFC 3924 BroadWorks Cisco Dial Plan DialPad Cisco CallManager MCI Systems Verizon VoiceWing Avaya Communication Manager GrandCentral Hallenstal Bondy Chang

Primary reference	In combination with one or more of these references
	Mutikainen Longoni Haase Fiatal Teodosiu Guedalia Buckley ’922 Brooks Kaal Valentine Ejzak Ala-Luukko Schuster Khello Shankar Welenson Beech Buckley ’159 Buckley ’950 Buckley ’565 Bates Garcia
Aguilar	Barnes ’541 Barnes ’163 ECC Report Cisco CallManager Fundamentals RFC 2661 RFC 3924 BroadWorks Cisco Dial Plan DialPad Cisco CallManager MCI Systems Verizon VoiceWing Avaya Communication Manager GrandCentral Hallenstal Bondy Chang Mutikainen Longoni Haase Fiatal

Primary reference	In combination with one or more of these references
	Teodosiu Guedalia Buckley ’922 Brooks Kaal Valentine Ejzak Ala-Luukko Schuster Khello Shankar Welenson Beech Buckley ’159 Buckley ’950 Buckley ’565 Bates Garcia Citron
Barnes ’541	Barnes ’163 ECC Report Cisco CallManager Fundamentals RFC 2661 RFC 3924 BroadWorks Cisco Dial Plan DialPad Cisco CallManager MCI Systems Verizon VoiceWing Avaya Communication Manager GrandCentral Hallenstal Bondy Chang Mutikainen Longoni Haase Fiatal Teodosiu Guedalia Buckley ’922 Brooks

Primary reference	In combination with one or more of these references
	Kaal Valentine Ejzak Ala-Luukko Schuster Khello Shankar Welenson Beech Buckley ’159 Buckley ’950 Buckley ’565 Bates Garcia Citron Aguilar
Barnes ’163	ECC Report Cisco CallManager Fundamentals RFC 2661 RFC 3924 BroadWorks Cisco Dial Plan DialPad Cisco CallManager MCI Systems Verizon VoiceWing Avaya Communication Manager GrandCentral Hallenstal Bondy Chang Mutikainen Longoni Haase Fiatal Teodosiu Guedalia Buckley ’922 Brooks Kaal Valentine Ejzak Ala-Luukko

Primary reference	In combination with one or more of these references
	Schuster Khello Shankar Welenson Beech Buckley ’159 Buckley ’950 Buckley ’565 Bates Garcia Citron Aguilar Barnes ’541
ECC Report	Cisco CallManager Fundamentals RFC 2661 RFC 3924 BroadWorks Cisco Dial Plan DialPad Cisco CallManager MCI Systems Verizon VoiceWing Avaya Communication Manager GrandCentral Hallenstal Bondy Chang Mutikainen Longoni Haase Fiatal Teodosiu Guedalia Buckley ’922 Brooks Kaal Valentine Ejzak Ala-Luukko Schuster Khello Shankar Welenson

Primary reference	In combination with one or more of these references
	Beech Buckley ’159 Buckley ’950 Buckley ’565 Bates Garcia Citron Aguilar Barnes ’541 Barnes ’163
Cisco CallManager Fundamentals	RFC 2661 RFC 3924 BroadWorks Cisco Dial Plan DialPad Cisco CallManager MCI Systems Verizon VoiceWing Avaya Communication Manager GrandCentral Hallenstal Bondy Chang Mutikainen Longoni Haase Fiatal Teodosiu Guedalia Buckley ’922 Brooks Kaal Valentine Ejzak Ala-Luukko Schuster Khello Shankar Welenson Beech Buckley ’159 Buckley ’950 Buckley ’565

Primary reference	In combination with one or more of these references
	Bates Garcia Citron Aguilar Barnes ’541 Barnes ’163 ECC Report
RFC 2661	RFC 3924 BroadWorks Cisco Dial Plan DialPad Cisco CallManager MCI Systems Verizon VoiceWing Avaya Communication Manager GrandCentral Hallenstal Bondy Chang Mutikainen Longoni Haase Fiatal Teodosiu Guedalia Buckley ’922 Brooks Kaal Valentine Ejzak Ala-Luukko Schuster Khello Shankar Welenson Beech Buckley ’159 Buckley ’950 Buckley ’565 Bates Garcia Citron Aguilar

Primary reference	In combination with one or more of these references
	Barnes ’541 Barnes ’163 ECC Report Cisco CallManager Fundamentals
RFC 3924	BroadWorks Cisco Dial Plan DialPad Cisco CallManager MCI Systems Verizon VoiceWing Avaya Communication Manager GrandCentral Hallenstal Bondy Chang Mutikainen Longoni Haase Fiatal Teodosiu Guedalia Buckley ’922 Brooks Kaal Valentine Ejzak Ala-Luukko Schuster Khello Shankar Welenson Beech Buckley ’159 Buckley ’950 Buckley ’565 Bates Garcia Citron Aguilar Barnes ’541 Barnes ’163 ECC Report Cisco CallManager Fundamentals

Primary reference	In combination with one or more of these references
	RFC 2661
BroadWorks	Cisco Dial Plan DialPad Cisco CallManager MCI Systems Verizon VoiceWing Avaya Communication Manager GrandCentral Hallenstal Bondy Chang Mutikainen Longoni Haase Fiatal Teodosiu Guedalia Buckley ’922 Brooks Kaal Valentine Ejzak Ala-Luukko Schuster Khello Shankar Welenson Beech Buckley ’159 Buckley ’950 Buckley ’565 Bates Garcia Citron Aguilar Barnes ’541 Barnes ’163 ECC Report Cisco CallManager Fundamentals RFC 2661 RFC 3924

Primary reference	In combination with one or more of these references
Cisco Dial Plan	DialPad Cisco CallManager MCI Systems Verizon VoiceWing Avaya Communication Manager GrandCentral Hallenstal Bondy Chang Mutikainen Longoni Haase Fiatal Teodosiu Guedalia Buckley ’922 Brooks Kaal Valentine Ejzak Ala-Luukko Schuster Khello Shankar Welenson Beech Buckley ’159 Buckley ’950 Buckley ’565 Bates Garcia Citron Aguilar Barnes ’541 Barnes ’163 ECC Report Cisco CallManager Fundamentals RFC 2661 RFC 3924 BroadWorks
DialPad	Cisco CallManager MCI Systems Verizon VoiceWing

Primary reference	In combination with one or more of these references
	Avaya Communication Manager GrandCentral Hallenstal Bondy Chang Mutikainen Longoni Haase Fiatal Teodosiu Guedalia Buckley ’922 Brooks Kaal Valentine Ejzak Ala-Luukko Schuster Khello Shankar Welenson Beech Buckley ’159 Buckley ’950 Buckley ’565 Bates Garcia Citron Aguilar Barnes ’541 Barnes ’163 ECC Report Cisco CallManager Fundamentals RFC 2661 RFC 3924 BroadWorks Cisco Dial Plan
Cisco CallManager	MCI Systems Verizon VoiceWing Avaya Communication Manager GrandCentral Hallenstal Bondy

Primary reference	In combination with one or more of these references
	Chang Mutikainen Longoni Haase Fiatal Teodosiu Guedalia Buckley ’922 Brooks Kaal Valentine Ejzak Ala-Luukko Schuster Khello Shankar Welenson Beech Buckley ’159 Buckley ’950 Buckley ’565 Bates Garcia Citron Aguilar Barnes ’541 Barnes ’163 ECC Report Cisco CallManager Fundamentals RFC 2661 RFC 3924 BroadWorks Cisco Dial Plan DialPad
MCI Systems	Verizon VoiceWing Avaya Communication Manager GrandCentral Hallenstal Bondy Chang Mutikainen Longoni Haase

Primary reference	In combination with one or more of these references
	Fiatal Teodosiu Guedalia Buckley ’922 Brooks Kaal Valentine Ejzak Ala-Luukko Schuster Khello Shankar Welenson Beech Buckley ’159 Buckley ’950 Buckley ’565 Bates Garcia Citron Aguilar Barnes ’541 Barnes ’163 ECC Report Cisco CallManager Fundamentals RFC 2661 RFC 3924 BroadWorks Cisco Dial Plan DialPad Cisco CallManager
Verizon VoiceWing	Avaya Communication Manager GrandCentral Hallenstal Bondy Chang Mutikainen Longoni Haase Fiatal Teodosiu Guedalia Buckley ’922

Primary reference	In combination with one or more of these references
	Brooks Kaal Valentine Ejzak Ala-Luukko Schuster Khello Shankar Welenson Beech Buckley ’159 Buckley ’950 Buckley ’565 Bates Garcia Citron Aguilar Barnes ’541 Barnes ’163 ECC Report Cisco CallManager Fundamentals RFC 2661 RFC 3924 BroadWorks Cisco Dial Plan DialPad Cisco CallManager MCI Systems
Avaya Communication Manager	GrandCentral Hallenstal Bondy Chang Mutikainen Longoni Haase Fiatal Teodosiu Guedalia Buckley ’922 Brooks Kaal Valentine Ejzak

Primary reference	In combination with one or more of these references
	Ala-Luukko Schuster Khello Shankar Welenson Beech Buckley ’159 Buckley ’950 Buckley ’565 Bates Garcia Citron Aguilar Barnes ’541 Barnes ’163 ECC Report Cisco CallManager Fundamentals RFC 2661 RFC 3924 BroadWorks Cisco Dial Plan DialPad Cisco CallManager MCI Systems Verizon VoiceWing
GrandCentral	Hallenstal Bondy Chang Mutikainen Longoni Haase Fiatal Teodosiu Guedalia Buckley ’922 Brooks Kaal Valentine Ejzak Ala-Luukko Schuster Khello Shankar

Primary reference	In combination with one or more of these references
	Welenson Beech Buckley ’159 Buckley ’950 Buckley ’565 Bates Garcia Citron Aguilar Barnes ’541 Barnes ’163 ECC Report Cisco CallManager Fundamentals RFC 2661 RFC 3924 BroadWorks Cisco Dial Plan DialPad Cisco CallManager MCI Systems Verizon VoiceWing Avaya Communication Manager

The obviousness combinations set forth in these contentions reflect Defendants’ present understanding of the potential scope of the claims that Plaintiff appears to be advocating and should not be seen as Defendants’ acquiescence to Plaintiff’s interpretation of the patent claims.

The motivation to combine these references is described in detail below. Defendants will further specify the motivations to combine the prior art, including through reliance on expert testimony, at the appropriate later stage of this lawsuit.

A. Motivation to Combine

A person of ordinary skill in the art, at the time of the alleged inventions of the Asserted Claims would have been motivated to combine the teachings of the primary references listed in the table above. Each of these references, for example and without limitation, address the subject

of communications between mobile and wireless terminal devices across a variety of possible communications networks, including some combination of traditional telephone network service (PSTN), cellular networks such as based on 3GPP standards, WLAN networks, WiFi networks, and networks that support use of Internet-based communication protocols. Each of the references, for example and without limitation, address messaging protocols between an initiating terminal device and network servers for the purpose of setting up a communication channel between the calling terminal device and a desired callee.

The references also have in common that their inventors faced substantially similar and related problems. The references, for example and without limitation, address:

- the central problem of routing, *i.e.,* identifying a path from the caller to the callee in communication systems;
- systems in which a mobile device may roam away from a home network; and/or
- communications channels where it may be necessary to construct a communication path that bridges two different types of communication networks, often an IP-based network and a PSTN network.

A person of ordinary skill in the art at the time of the alleged inventions would recognize the common problems and challenges addressed by the references and would regard this as a further reason to treat each of the references as a possible source of relevant improvements and modifications for the others since each is directed to a similar set of problems.

Each of the references, for example and without limitation, describe a communication network composed of terminals and network nodes, each of which incorporate a processor, code, and networking interface hardware for communicating with other devices across one or multiple networks. The mobile terminals and network elements discussed in some or all of the references incorporate generic processing capabilities and are operated under the control of software. The

protocols and functions described in some or all of the references are implemented largely in software. This common design, for example and without limitation, makes the networks some of all of the references describe flexible in that new capabilities and support for new protocols and messaging can readily be added to the network terminals, network nodes, and servers simply by updating the software to add the new features. A person of ordinary skill in the art at the time of the alleged inventions would have recognized that this flexibility made it possible to extend or modify the protocols of the devices in each of these systems to add new data content to the messages exchanged between the devices, and to modify or expand the type of information considered by the network nodes in responding to messages received from terminals or making routing decisions. Because each of the reference systems relies on general purpose processing nodes to implement the network protocols that they use, a person of ordinary skill in the art would have recognized that an improvement described in one of these references could readily be applied to the operation of another by modifying the code of the devices in the latter system to incorporate the protocol feature, message content or processing method described in the source reference. Adding features this way would have had the obvious benefit of expanding the capabilities and performance of a reference system with confidence that the combination could be readily and reliably made and that it would improve the operation of the modified system as expected without any unanticipated result.

The fact that these references share a technological space, concepts, and design challenges would have led a person of ordinary skill in the art at the time of the purported invention of the Asserted Claims to regard the teachings of each of these references as being relevant to the others. This person of ordinary skill would have consulted each reference and drawn the best teachings from each when implementing a system or apparatus for communicating from one device to another in an environment that crossed network boundaries and permitted devices to roam and to

communicate between Internet protocol-based network domains and the traditional protocols used in the PSTN.

Many of these references, for example and without limitation, use similar networks (*e.g.*, GPRS, 3GPP based networks, 802.11 based WiFi networks, WLAN, PSTN), common networking and signaling protocols (*e.g.*, SS7, 3GPP protocols, SIP, TCP/IP, UDP, IETF protocols), similar addressing (*e.g.*, E.164 numbering, SIP URI schemes for addressing, MAC and IP addressing) and often common or similar network entities (*e.g.*, MSCs, DNS servers, CSCF nodes, proxy servers, gateways, routing servers) or functionally similar devices with different names or acronyms. The similar technologies, and overlapping, compatible or analogous protocols would have prompted a person of ordinary skill to treat each of these references as a useful source for ideas and design elements that could be used to improve the designs described in the other references.

In addition, the fact that some or all of these references use common protocols and these references could be incorporated into one another to achieve the benefits described therein means that it would have been obvious to persons of skill in the art that the teachings in a given source reference could be combined with one or more other references without difficulty and that this would improve the process of the modified system as expected without any unanticipated result.

B. Exemplary Combinations

The motivation to combine certain specific references above are further elaborated below. This is not intended to be an exhaustive list, and it would have been obvious for any art charted by Defendants to be combined with any primary reference to render the Asserted Claims obvious. These combinations should be considered as exemplary, and charts for these combinations or any other combinations that are possible based on the table above (even if not specifically discussed below) could be created through the ministerial act of combining any of the single-reference charts in Exhibits A1–A41 and B1–B41 with any other such charted art, and Defendants maintain that

any and all such combinations (whether illustrated below or not) demonstrate the obviousness of any alleged inventions in the Asserted Claims. Defendants reserve the right to assert any of the combinations listed above.

1. Hallenstal in view of Garcia

A person of ordinary skill in the art would have been motivated to combine Hallenstal's methods for routing ordinary telephone calls over a computer network such as the internet with Garcia's methods for identifying caller location for at least the following reasons. Both Hallenstal and Garcia are in the field of internet telephony and VoIP routing solutions. *See, e.g.*, Hallenstal at Abstract; Garcia at 1:66-2:3. Further, both Hallenstal and Garcia share many areas of subject matter, including, but not limited to: (i) generating routing information to route a call from a telephone or mobile device to the desired recipient (e.g., the local public safety access point (PSAP), or any desired callee) on the basis of location information for the telephone or mobile device; (ii) use of a network routing server; (iii) identification of a location for a telephone or mobile device on the basis of an IP address assigned to the mobile device; (iv) use of manually provided and client-provided location information as part of the routing decision; and (v) methods for addressing the problem of routing a call between a roaming user and the user's selected destination. Because of the related subject matter and the overlapping and related problems that these references were attempting to solve, a person of ordinary skill would have been motivated to treat Garcia as a useful source for ideas and design elements that could be used to overcome the problems faced in design of the systems described in Hallenstal.

Hallenstal requires IP addresses for both local exchanges in order to correctly route calls over the internet. It would have been obvious to use Garcia's method of determining the location of mobile devices for emergency call routing to apply Hallenstal's methods of routing calls over IP networks to roaming mobile devices. And because Garcia's methods and systems for

determining location information all involved conventional networking and data processing techniques, the combination of Garcia's methods and systems with those of Hallenstal would have been within the technical capacity of a person of ordinary skill in the art.

2. Mutikainen in view of Ejzak

A person of ordinary skill in the art would have been motivated to combine Mutikainen's methods and apparatuses for connecting calls originating in a packet-based IMS network to a destination in a circuit-switched network with Ejzak's methods for routing between packet-switched and circuit-switched domains for at least the following reasons. Both Mutikainen and Ejzak are in the field of packet-switched telephony and routing using SIP protocols in an IMS network. See, e.g., Mutikainen at Abstract, ¶ 75; Ejzak at Abstract. Further, both Mutikainen and Ejzak share many areas of subject matter, including, but not limited to: (i) generating routing information for calls originating from devices using packet-based IMS networks; (ii) use of a network routing server; (iii) use of SIP as a signaling protocol and UDP as a transport layer protocol to implement calls; and (iv) methods for addressing the problem of routing a call between a packet-based originating device and a circuit-based terminating device. Because of the related subject matter and the overlapping and related problems that these references were attempting to solve, a person of ordinary skill would have been motivated to treat Ejzak as a useful source for ideas and design elements that could be used to overcome the problems faced in design of the systems and methods described in Mutikainen.

Mutikainen and Ejzak both involve using SIP to initiate calls in a packet-based IMS-based communication network. Both include provision for routing to a gateway to terminate the call in a PSTN network. Mutikainen at ¶¶ 1, 34; Ejzak at 4:46-52. It would have been obvious to apply Ejzak's methods for selecting a terminating gateway to the PSTN based on factors including the location of the originating mobile, the location of the terminating PSTN address and the desire for

a least-cost path to Mutikainen's routing algorithms. This would have produced the benefit identified in Ejzak of lowering the cost of the communication. Because both references' methods and systems involved conventional and overlapping networking and data processing techniques and rely on the same network protocols, the combination of Mutikainen and Ejzak's methods and systems would have been within the technical capacity of a person of ordinary skill in the art and would have produced the expected results and operated in the manner described within each reference.

3. Teodosiu in view of Guedalia

A person of ordinary skill in the art would have been motivated to combine Teodosiu's mobile device that transmits a request to a network server to seek a VoIP phone number with Guedalia's methods for providing local access codes. Teodosiu and Guedalia are in the field of telephony and call routing solutions. *See, e.g.*, Teodosiu at [0006]; Guedalia at Abstract. Further, Teodosiu and Guedalia share many areas of subject matter, including, but not limited to: (i) providing a local access number to a user based on their location; (ii) routing calls based on the local access number; (iii) identification of low cost call routing paths; (iv) use of client-provided location information as part of the routing decision; and (v) methods for addressing the problem of routing a call between a roaming user and the user's selected destination. At least because of the related subject matter and the overlapping and related problems that these references were attempting to solve, a person of ordinary skill would have been motivated to treat Guedalia as a useful source for ideas and design elements that could be used to overcome the problems faced in design of the systems described in Teodosiu. As an example, combining Teodosiu and Guedalia would have been a combination of prior art elements according to known methods to yield predictable results. As a further example, combining Teodosiu and Guedalia represents a simple substitution of one known element for another to obtain predictable results.

Teodosiu, for example, describes one method of selecting a VoIP phone number based on it being in close geographic vicinity to a requesting mobile device in order to reduce costs associated with a call between the mobile device and a selected phone number. It would have been obvious to combine Teodosiu with Guedalia's teachings on allowing a user to specify a location or area associated with the mobile device. Because Guedalia's methods for allowing a user to specify location information all involved conventional telephony and call routing techniques, the combination of Guedalia's methods with the systems and methods of Teodosiu would have been within the technical capacity of a person of ordinary skill in the art. Moreover, a person of ordinary skill in the art would have been motivated to make such a combination because it would have allowed the network server in Teodosiu to more accurately select a VoIP phone number in close geographic vicinity to the mobile device.

4. Teodosiu in view of Kaal

A person of ordinary skill in the art would have been motivated to combine Teodosiu's network-connected device that transmits a request to a server for a VoIP phone number with Kaal's methods for determining the location of a device from its IP address. Teodosiu and Kaal are in the field of telephony and call routing solutions. *See, e.g.*, Teodosiu at [0006]; Kaal at [0027]. Further, Teodosiu and Kaal share many areas of subject matter, including, but not limited to: (i) providing a local access number to a user based on their location; (ii) routing calls based on the local access number; (iii) identification of low cost call routing paths; (iv) use of client-provided location information as part of the routing decision; and (v) methods for addressing the problem of routing a call between a roaming user and the user's selected destination. At least because of the related subject matter and the overlapping and related problems that these references were attempting to solve, a person of ordinary skill would have been motivated to treat Kaal as a useful source for ideas and design elements that could be used to overcome the problems faced in design of the

systems described in Kaal. As an example, combining Teodosiu and Kaal would have been a combination of prior art elements according to known methods to yield predictable results. As a further example, combining Teodosiu and Kaal represents a simple substitution of one known element for another to obtain predictable results.

Teodosiu, for example, describes one method of selecting a VoIP phone number based on it being in close geographic vicinity to a requesting mobile device in order to reduce costs associated with a call between the mobile device and a selected phone number. It would have been obvious to combine Teodosiu with Kaal's teachings on providing an IP address of the mobile device to allow the server to determine the mobile device's location. Because Kaal's methods for determining device location from an IP address all involved conventional telephony and call routing techniques, the combination of Kaal's methods with the systems and methods of Teodosiu would have been within the technical capacity of a person of ordinary skill in the art. Moreover, a person of ordinary skill in the art would have been motivated to make such a combination because it would have allowed the network server in Teodosiu to more accurately select a VoIP phone number in close geographic vicinity to the mobile device because a mobile device's IP address can be narrowed down to a city level.

5. Guedalia in view of Ala-Luukko

A person of ordinary skill in the art would have been motivated to combine Guedalia's methods for providing local access codes with Ala-Luukko's teachings on routing calls for at least the following reasons. Guedalia and Ala-Luukko are in the field of telephony and call routing solutions. *See, e.g.*, Guedalia at Abstract; Ala-Luukko at Abstract Further, Guedalia and Ala-Luukko share many areas of subject matter, including, but not limited to: (i) providing a local access number to a user based on their location; (ii) routing calls based on the local access number; (iii) identification of low cost call routing paths; (iv) use of manually provided and client-provided

location information as part of the routing decision; and (v) methods for addressing the problem of routing a call between a roaming user and the user's selected destination. At least because of the related subject matter and the overlapping and related problems that these references were attempting to solve, a person of ordinary skill would have been motivated to treat Ala-Luukko as a useful source for ideas and design elements that could be used to overcome the problems faced in design of the systems described in Guedalia. As an example, combining Guedalia and Ala-Luukko would have been a combination of prior art elements according to known methods to yield predictable results. As a further example, combining Guedalia and Ala-Luukko represents a simple substitution of one known element for another to obtain predictable results.

Guedalia, for example, describes one method of providing a local access code to a caller based on the caller's location. It would have been obvious to use Ala-Luukko's teachings on routing calls to Guedalia's methods of providing local access codes. And at least because Ala-Luukko methods and systems for determining location information all involved conventional telephony and call routing techniques, the combination of Ala-Luukko methods and systems with those of Guedalia's would have been within the technical capacity of a person of ordinary skill in the art.

6. Guedalia in view of Ala-Luukko further in view of Valentine

A person of ordinary skill in the art would have been motivated to combine Guedalia's methods for providing local access codes with Ala-Luukko's teachings on routing calls and with Valentine's teachings on accessing a particular long distance carrier for at least the following reasons. Guedalia, Ala-Luukko, and Valentine are in the field of telephony and call routing solutions. *See, e.g.*, Guedalia at Abstract; Ala-Luukko at Abstract; Valentine at Abstract. Further, Guedalia, Ala-Luukko, and Valentine share many areas of subject matter, including, but not limited to: (i) providing a local access number to a user based on their location; (ii) routing calls

based on the local access number; (iii) identification of low cost call routing paths; (iv) use of manually provided and client-provided location information as part of the routing decision; and (v) methods for addressing the problem of routing a call between a roaming user and the user's selected destination. At least because of the related subject matter and the overlapping and related problems that these references were attempting to solve, a person of ordinary skill would have been motivated to treat Ala-Luukko and Valentine as useful sources for ideas and design elements that could be used to overcome the problems faced in design of the systems described in Guedalia. As an example, combining Guedalia, Ala-Luukko, and Valentine would have been a combination of prior art elements according to known methods to yield predictable results. As a further example, combining Guedalia, Ala-Luukko, and Valentine represents a simple substitution of one known element for another to obtain predictable results.

Guedalia, for example, describes one method of providing a local access code to a caller based on the caller's location. It would have been obvious to use Ala-Luukko's teachings on routing calls and Valentine's teachings on accessing particular long distance carriers to Guedalia's methods of providing local access codes. And at least because both Ala-Luukko and Valentine's methods and systems for determining location information all involved conventional telephony and call routing techniques, the combination of Ala-Luukko and Valentine's methods and systems with those of Guedalia's would have been within the technical capacity of a person of ordinary skill in the art.

7. Buckley '922 in view of Buckley '159

A person of ordinary skill in the art would have been motivated to combine Buckley '922's methods and apparatuses for using SIP to initiate mobile calls in a packet-switched network with Buckley '159's methods and devices for using SIP to form connections between an originating device in a packet-switched IMS network and a terminating device in the circuit-switched PSTN

for at least the following reasons. Both Buckley patents concern methods for routing calls originating from mobile devices operating in a packet-switched network and both use SIP to do call initiation. See, e.g., Buckley '922 at Abstract, ¶ 16; Buckley '159 at Abstract. Further, both patents share many areas of subject matter, including, but not limited to: (i) generating routing information to route a call from a telephone or mobile device to the desired recipient on the basis of location information for the telephone or mobile device; (ii) use of a network routing server; (iii) identification of a location for a telephone or mobile device on the basis of an IP address assigned to the mobile device; (iv) use of SIP as a signaling protocol and UDP as a transport layer protocol to implement VoIP calls; and (v) methods for addressing the problem of routing a call between a roaming user and the user's selected destination. Because of the related subject matter and the overlapping and related problems that these references were attempting to solve, a person of ordinary skill would have been motivated to treat Buckley '159 as a useful source for ideas and design elements that could be used to overcome the problems faced in design of the systems and methods described in Buckley '922.

Buckley '922 involves setting up and routing SIP calls in a packet-based communication network. Buckley '159 also describes setting up and routing SIP calls in a packet-based network. Both use the SIP protocol to communicate routing information to the originating call. Because both patents support mobile devices, the routing information supplied can quickly become stale and Buckley '159 accounts for this by associating this data with expiration times that are supplied to the mobile device requesting call setup. It would have been obvious to apply this feature of Buckley '159's methods to the SIP signaling protocols used in Buckley '922 to achieve the benefit of ensuring that the mobile device does not use out-of-date routing information and limiting the duration of time during which the network must hold open resources for a possible call. Because both references' methods and systems involved conventional networking and data processing

techniques and rely on the same network protocols, the combination of these patent's methods and systems would have been within the technical capacity of a person of ordinary skill in the art and would have produced the expected results and operated in the manner described within each reference.

8. Kaal in view of ECC Report

A person of ordinary skill in the art would have been motivated to combine Kaal's methods for initiating mobile calls by acquiring access numbers from a network node with ECC Report's broad teachings of VoIP access to emergency call systems for at least the following reasons. Both Kaal and ECC Report are in the field of internet telephony and VoIP routing solutions. *See, e.g.*, Kaal at Abstract, [0004]; ECC Report at 2. Further, both Kaal and ECC Report share many areas of subject matter, including, but not limited to: (i) generating routing information to route a call from a telephone or mobile device to the desired recipient (e.g., the local public safety access point (PSAP), or any desired callee) on the basis of location information for the telephone or mobile device; (ii) use of a network routing server; (iii) identification of a location for a telephone or mobile device on the basis of an IP address assigned to the mobile device; (iv) use of manually provided and client-provided location information as part of the routing decision; and (v) methods for addressing the problem of routing a call between a roaming user and the user's selected destination. Because of the related subject matter and the overlapping and related problems that these references were attempting to solve, a person of ordinary skill would have been motivated to treat ECC Report as a useful source for ideas and design elements that could be used to overcome the problems faced in design of the systems described in Kaal.

Kaal describes one method of initiating mobile calls via an access network that brokers information about caller and callee. It would have been obvious to use ECC's broadly applicable methods for routing emergency calls of VoIP systems to Kaal's more general methods of routing

calls over IP networks to roaming mobile devices. And because ECC Report's methods and systems for determining location information all involved conventional networking and data processing techniques, the combination of ECC Report's methods and systems with those of Kaal would have been within the technical capacity of a person of ordinary skill in the art.

9. Beech in view of Buckley '159

A person of ordinary skill in the art would have been motivated to combine Beech's methods and apparatuses for using SIP to initiate calls from a circuit-switched network with Buckley '159's methods for performing the same task for at least the following reasons. Both Beech and Buckley '159 are in the field of internet telephony and VoIP routing solutions. See, e.g., Beech at Abstract; Buckley '159 at Abstract. Further, both Beech and Buckley '159 share many areas of subject matter, including, but not limited to: (i) generating routing information to route a call from a telephone or mobile device to the desired recipient on the basis of location information for the telephone or mobile device; (ii) use of a network routing server; (iii) identification of a location for a telephone or mobile device on the basis of an IP address assigned to the mobile device; (iv) use of SIP as a signaling protocol and UDP as a transport layer protocol to implement VoIP calls; and (v) methods for addressing the problem of routing a call between a roaming user and the user's selected destination. Because of the related subject matter and the overlapping and related problems that these references were attempting to solve, a person of ordinary skill would have been motivated to treat Buckley '159 as a useful source for ideas and design elements that could be used to overcome the problems faced in design of the systems and methods described in Beech.

Beech involves setting up and routing SIP calls in a packet-based communication network. Buckley '159 also describes setting up and routing SIP calls in a packet-based network. Beech is also concerned with routing in the specific context of identifying an appropriate PSAP for receipt

of an emergency call based on the location of the mobile device. It would have been obvious to apply Buckley '159's methods for using SIP signaling to route traffic to a network resource and reserve access on a circuit switched connection to that resource identified by an IMRN with Beech's use of SIP signaling to set up an emergency call based on the user's location.

Because both references' methods and systems involved conventional networking and data processing techniques and rely on the same network protocols, the combination of Beech and Buckley '159's methods and systems would have been within the technical capacity of a person of ordinary skill in the art and would have produced the expected results and operated in the manner described within each reference.

10. Buckley '159 in view of Buckley '565

A person of ordinary skill in the art would have been motivated to combine Buckley 159's methods and apparatuses for initiating mobile SIP calls in a network environment with Buckley '565's methods and devices for managing call continuity when a VoIP user moves between different networks for at least the following reasons. Both Buckley '159 and Buckley '565 are in the field of internet telephony and VoIP routing solutions. *See, e.g.*, Buckley '159 at Abstract; Buckley '565 at Abstract. Further, both Buckley '159 and Buckley '565 share many areas of subject matter, including, but not limited to: (i) generating routing information to route a call from a telephone or mobile device to the desired recipient on the basis of location information for the telephone or mobile device; (ii) use of a network routing server; (iii) identification of a location for a telephone or mobile device on the basis of an IP address assigned to the mobile device; (iv) use of SIP as a signaling protocol and UDP as a transport layer protocol to implement VoIP calls; and (v) methods for addressing the problem of routing a call between a roaming user and the user's selected destination. Because of the related subject matter and the overlapping and related problems that these references were attempting to solve, a person of ordinary skill would have

been motivated to treat Buckley ’565 as a useful source for ideas and design elements that could be used to overcome the problems faced in design of the systems and methods described in Buckley ’159.

Buckley ’159 involves initiating SIP calls using standard internet techniques such as the UDP transport layer and E.164 numbers. It would have been obvious to apply Buckley ’565’s methods of call continuity over network switching events to the VoIP calls initiated by the methods and apparatuses of Buckley ’159. This is doubly so because both references share more than one author, and a person of ordinary skill in the art would have recognized that the two references share related and complementary subject matter. And because both references’ methods and systems involved conventional networking and data processing techniques, the combination of Buckley ’565’s methods and systems with those of Buckley ’159 would have been within the technical capacity of a person of ordinary skill in the art.

Combination of the SIP specification (RFC 3261) with any of the Buckley references would be obvious to a person of ordinary skill for at least the following reasons. The Buckley references explicitly rely on the use of SIP as a signaling protocol for communication between the mobile devices and network elements and in the network between network elements. SIP messages and protocols are referenced throughout the Buckley specifications and figures. The SIP protocol was very well known to persons of ordinary skill in the art from more than one year prior to the filing date of the patents in suit, and it would have been obvious to a person of ordinary skill in the art to reference the SIP specification to obtain more detail about the format of the various SIP messages used by Buckley references and to use those message formats in any implementation of a system using the Buckley protocols.

Combination of the UDP specification (IETF RFC 768) with the Buckley references and SIP specifications would also have been obvious to a person of ordinary skill in the art for at least

the following reasons. The UDP specification defines one of the basic mechanisms for transport of data using the Internet Protocol (IP). Persons of ordinary skill in the art more than one year prior to the filing date of the patents in suit would have been universally familiar with the UDP specification. The SIP specification is designed to use UDP as one of the possible mechanisms for transport of SIP data, and the SIP specification makes frequent and repeated reference to UDP transport. The SIP specification explicitly requires that SIP implementations must also implement the UDP specification. *See* RFC 3261 at Section 18. As a result, it would be obvious to a person of ordinary skill in the art that discussions in Buckley about messages passed between the various network elements would employ the UDP transport mechanisms.

It would be obvious to a person of ordinary skill in the art to implement the Buckley systems using SIP and UDP protocols because the Buckley patents rely on these specifications as the mechanism for implementation of the higher-level protocols that they describe. Combining support for SIP and UDP with the protocols described in Buckley would have the obvious benefit of allowing a working implementation of the Buckley systems. Use in this manner would permit network communications in the manner prescribed in Buckley, the SIP and UDP specifications and expected by persons of ordinary skill without requiring any additional undue development or experimentation.

Both SIP and UDP are published by the Internet Engineering Task Force ("IETF"), which is well known to any person of ordinary skill in the art as the premier open standards organization for development of the engineering standards on which Internet communications are based. All IETF specifications are freely available from its website (www.ietf.org) and have been since more than one year before the filing date of the patents in suit. Persons of ordinary skill in the art would be very familiar with the IETF and know how to obtain IETF specifications.

11. Bates in view of Buckley '922

A person of ordinary skill in the art would have been motivated to combine Bates' methods for identifying a caller location with Buckley '922's teachings on connecting emergency calls over packet-switched networks for at least the following reasons. Bates and Buckley '922 are in the field of internet telephony and VoIP routing solutions. *See, e.g.*, Bates at Abstract, 1; Buckley '922 at Abstract, [0016]. Further, Bates and Buckley '922, share many areas of subject matter, including, but not limited to: (i) generating routing information to route a call from a telephone or mobile device to the desired recipient (e.g., the local public safety access point (PSAP), or any desired callee) on the basis of location information for the telephone or mobile device; (ii) use of a network routing server; (iii) identification of a location for a telephone or mobile device on the basis of an IP address assigned to the mobile device; (iv) use of manually provided and client-provided location information as part of the routing decision; and (v) methods for addressing the problem of routing a call between a roaming user and the user's selected destination. At least because of the related subject matter and the overlapping and related problems that these references were attempting to solve, a person of ordinary skill would have been motivated to treat Buckley '922 as a useful source for ideas and design elements that could be used to overcome the problems faced in design of the systems described in Bates. As an example, combining Bates and Buckley '922 would have been a combination of prior art elements according to known methods to yield predictable results. As a further example, combining Bates and Buckley '922 represents a simple substitution of one known element for another to obtain predictable results.

Bates, for example, describes one method of assigning temporary identifiers to roaming callers based on the caller's location. It would have been obvious to use Buckley '922's teachings on connecting emergency calls over packet-switched networks to Bates methods of identifying

caller location. And at least because Buckley '922's methods for determining location information all involved conventional networking and data processing techniques, the combination of Buckley '922 methods with those of Bates would have been within the technical capacity of a person of ordinary skill in the art.

12. Bates in view of Buckley '922 in further view of ECC Report

A person of ordinary skill in the art would have been motivated to combine Bates' methods for identifying a caller location, with Buckley '922's teachings on connecting emergency calls over packet-switched networks, and with the ECC Report's broad teachings of VoIP access to emergency call systems for at least the following reasons. Bates, Buckley '922, and the ECC report are in the field of internet telephony and VoIP routing solutions. *See, e.g.*, Bates at Abstract, 1; Buckley '922 at Abstract, [0016]; ECC Report at 2. Further, Bates, Buckley '922, and the ECC Report share many areas of subject matter, including, but not limited to: (i) generating routing information to route a call from a telephone or mobile device to the desired recipient (e.g., the local public safety access point (PSAP), or any desired callee) on the basis of location information for the telephone or mobile device; (ii) use of a network routing server; (iii) identification of a location for a telephone or mobile device on the basis of an IP address assigned to the mobile device; (iv) use of manually provided and client-provided location information as part of the routing decision; and (v) methods for addressing the problem of routing a call between a roaming user and the user's selected destination. At least because of the related subject matter and the overlapping and related problems that these references were attempting to solve, a person of ordinary skill would have been motivated to treat Buckley '922 and the ECC Report as useful sources for ideas and design elements that could be used to overcome the problems faced in design of the systems described in Bates. As an example, combining Bates, Buckley '922, and the ECC report would have been a combination of prior art elements according to known methods to yield

predictable results. As a further example, combining Bates, Buckley '922 and the ECC Report represents a simple substitution of one known element for another to obtain predictable results.

Bates, for example, describes one method of assigning temporary identifiers to roaming callers based on the caller's location. It would have been obvious to use Buckley '922's teachings on connecting emergency calls over packet-switched networks and ECC's broadly applicable methods for routing emergency calls of VoIP systems to Bates methods of identifying caller location. And at least because both Buckley '922 and the ECC Report's methods and systems for determining location information all involved conventional networking and data processing techniques, the combination of Buckley '922 and the ECC Report's methods and systems with those of Bates would have been within the technical capacity of a person of ordinary skill in the art.

13. Garcia in view of ECC Report

A person of ordinary skill in the art would have been motivated to combine Garcia's methods for identifying caller location with ECC Report's broad teachings of VoIP access to emergency call systems for at least the following reasons. Both Garcia and ECC Report are in the field of internet telephony and VoIP routing solutions. *See, e.g.*, Garcia at Abstract; ECC Report at 2. Further, both Garcia and ECC Report share many areas of subject matter, including, but not limited to: (i) generating routing information to route a call from a telephone or mobile device to the desired recipient (e.g., the local public safety access point (PSAP), or any desired callee) on the basis of location information for the telephone or mobile device; (ii) use of a network routing server; (iii) identification of a location for a telephone or mobile device on the basis of an IP address assigned to the mobile device; (iv) use of manually provided and client-provided location information as part of the routing decision; and (v) methods for addressing the problem of routing a call between a roaming user and the user's selected destination. Because of the related subject

matter and the overlapping and related problems that these references were attempting to solve, a person of ordinary skill would have been motivated to treat ECC Report as a useful source for ideas and design elements that could be used to overcome the problems faced in design of the systems described in Garcia.

Garcia describes one method of distributing location information in order to determine correct routing information for mobile calls, including, but not limited to, emergency calls. It would have been obvious to use ECC's broadly applicable methods for routing emergency calls of VoIP systems to Garcia's methods of routing calls over IP networks to roaming mobile devices. And because ECC Report's methods and systems for determining location information all involved conventional networking and data processing techniques, the combination of ECC Report's methods and systems with those of Garcia would have been within the technical capacity of a person of ordinary skill in the art.

14. Cisco CallManager in view of BroadWorks

A person of ordinary skill in the art would be motivated to combine the Cisco CallManager system for enterprise voice communications with the BroadWorks system for web-enabled communications applications over packet networks for at least the following reasons. Cisco CallManager and BroadWorks are both IP telephony network systems. Cisco CallManager Fundamentals at 3; CiscoVoIPPal00004872 at 9. The Cisco CallManager and BroadWorks systems were both deployed enterprise environments. The Cisco CallManager and BroadWorks systems share many areas of subject matter, including, but not limited to: (1) call routing servers, gateways, softswitches, and other components; (2) routing calls over IP telephony network between multiple independent sites; (3) SIP call routing; (4) routing calls based on the location of the calling party and called party. At least because of the related subject matter and the overlapping and related problems that these systems were attempting to solve, a person of ordinary skill would

have been motivated to treat the BroadWorks System as a useful source for ideas and design elements that could be used to overcome the problems faced in design of the systems employed in Cisco CallManager. As an example, combining the Cisco CallManager System and the BroadWorks System would have been a combination of prior art elements according to known methods to yield predictable results. As a further example, combining the Cisco CallManager System and the BroadWorks System would involve a simple substitution of one known element for another to obtain predictable results.

At least because Cisco CallManager and BroadWorks systems both involved conventional telephony and call routing techniques, the combination of Cisco CallManager and BroadWorks would have been within the technical capacity of a person of ordinary skill in the art. And as further evidence of compatibility Cisco CallManager and BroadWorks are now owned by the same company—Cisco.

https://newsroom.cisco.com/press-release-content?type=webcontent&articleId=1908621.

15. MCI Systems in view of BroadWorks

A person of ordinary skill in the art would be motivated to combine the MCI Systems commercial SIP-based voice service with the BroadWorks system for web-enabled communications applications over packet networks for at least the following reasons. The MCI System and BroadWorks system are both IP telephony network systems. SIP Beyond VoIP at 50; CiscoVoIPPal00004872 at 9. The MCI Systems and the BroadWorks system were both deployed in enterprise environments. The MCI Systems and BroadWorks system share many areas of subject matter, including, but not limited to: (1) use of network servers, routing servers, gateways, and other components; (2) use of SIP-based voice services and call routing; (3) routing calls based on the location of the calling party and called party; (4) identification of low cost call routing paths; (5) use of manually provided and client-provided location information as part of the routing

decision; and (6) methods for addressing the problem of routing a call between a roaming user and the user's selected destination. At least because of the related subject matter and the overlapping and related problems that these references were attempting to solve, a person of ordinary skill would have been motivated to treat the BroadWorks system as a useful source for ideas and design elements that could be used to overcome the problems faced in design of the systems employed in the MCI Systems or vice versa. As an example, combining the MCI Systems and BroadWorks System would have been a combination of prior art elements according to known methods to yield predictable results. As a further example, combining the MCI Systems and BroadWorks System would involve a simple substitution of one known element for another to obtain predictable results.

At least because the MCI Systems and BroadWorks System both involved conventional telephony and call routing techniques, the combination of the MCI Systems and BroadWorks would have been within the technical capacity of a person of ordinary skill in the art.

16. MCI Systems in view of Cisco CallManager

A person of ordinary skill in the art would be motivated to combine the MCI Systems commercial SIP-based voice service with the Cisco CallManager system for enterprise voice communications for at least the following reasons. The MCI Systems and Cisco CallManager are both IP telephony network systems. Cisco CallManager Fundamentals at 3; SIP Beyond VoIP at 50. The MCI Systems and Cisco CallManager systems were both deployed in enterprise environments. The MCI Systems and Cisco CallManager systems share many areas of subject matter, including, but not limited to: (1) use of network servers, routing servers, gateways, and other components; (2) use of SIP-based voice services and call routing; (3) routing calls based on the location of the calling party and called party; (4) identification of low cost call routing paths; (5) use of manually provided and client-provided location information as part of the routing decision; and (6) methods for addressing the problem of routing a call between a roaming user and

the user's selected destination. At least because of the related subject matter and the overlapping and related problems that these references were attempting to solve, a person of ordinary skill would have been motivated to treat the Cisco CallManager system as a useful source for ideas and design elements that could be used to overcome the problems faced in design of the systems employed the MCI Systems or vice versa. As an example, combining the MCI Systems and Cisco CallManager System would have been a combination of prior art elements according to known methods to yield predictable results. As a further example, combining the MCI Systems and Cisco CallManager System would involve a simple substitution of one known element for another to obtain predictable results.

At least because the MCI Systems and Cisco CallManager System both involved conventional VoIP telephony and call routing techniques, the combination of the MCI Systems and Cisco CallManager System would have been within the technical capacity of a person of ordinary skill in the art.

17. VoiceWing in view of BroadWorks

A person of ordinary skill in the art would be motivated to combine the VoiceWing system for Internet-based calling with the BroadWorks system for web-enabled communications applications over packet networks for at least the following reasons. The VoiceWing System and BroadWorks system are both IP telephony network systems. VoiceWing Specification at 9; CiscoVoIPPal00004872 at 9. The VoiceWing System used BroadWorks network servers, media servers, and other infrastructure. VoiceWing Specification at 13, 42, 47-48. So the two systems were actually combined. The VoiceWing and BroadWorks systems also shared many areas of subject matter, including, but not limited to: (1) use of network servers, routing servers, gateways, and other components; (2) use of SIP-based voice services and call routing; (3) routing calls based on the location of the calling party and called party; (4) identification of low cost call routing paths;

(5) use of manually provided and client-provided location information as part of the routing decision; and (6) methods for addressing the problem of routing a call between a roaming user and the user's selected destination. At least because of the related subject matter and the overlapping and related problems that these references were attempting to solve, a person of ordinary skill would have been motivated to treat the BroadWorks system as a useful source for ideas and design elements that could be used to overcome the problems faced in design of the systems employed in the VoiceWing system or vice versa. As an example, combining the VoiceWing system and BroadWorks System would have been a combination of prior art elements according to known methods to yield predictable results. As a further example, combining the VoiceWing System and BroadWorks System would involve a simple substitution of one known element for another to obtain predictable results.

At least because the VoiceWing System and BroadWorks System both involved conventional telephony and call routing techniques, the combination of the VoiceWing System and BroadWorks System would have been within the technical capacity of a person of ordinary skill in the art.

V. INVALIDITY UNDER 35 U.S.C. § 112

In addition to the other grounds of invalidity presented, Defendants contend that the Asserted Claims are invalid under 35 U.S.C. § 112 for at least the following reasons.[4]

[4] Defendants further contend that, under Plaintiff's apparent claim constructions as reflected in its infringement contentions, all elements of the Asserted Claims are unreasonably uncertain, vague, and ambiguous in scope, and not enabled or supported by sufficient written description. Plaintiff is attempting to construe the Asserted Claim in a manner that is fundamentally inconsistent with the claims, specification, prosecution histories, understanding of one of ordinary skill in the art, and other extrinsic evidence, in order to accuse products of infringing technology that was not invented by Plaintiff and is not actually claimed in the Asserted Patents.

A. Indefiniteness

The Asserted Claims are invalid because they fail to meet the definiteness requirement of 35 U.S.C. § 112, which states that the claims must "particularly point[] out and distinctly claim[] the subject matter which the inventor or a joint inventor regards as the invention." In particular, the Asserted Claims are indefinite because of at least the following terms or phrases.

Phrase	Patent/Claim
"transmitting an access code request message to an access server to seek an access code from a pool of access codes wherein each access code in said pool of access codes identifies a respective telephone number or Internet Protocol (IP) network address that enables a local call to be made to call the callee identified by the callee identifier, said access code request message including said callee identifier and a location identifier separate and distinctive from said callee identifier, said location identifier identifying a location of the mobile telephone"	'234 patent, claim 1
"receiving an access code reply message from the access server in response to said access code request message, said access code reply message including an access code different from said callee identifier and associated with said location identifier and/or associated with a location pre-associated with the mobile telephone and wherein said access code expires after a period of time"	'234 patent, claim 1
"communicating with a routing controller to obtain from the routing controller said access code wherein said access code identifies a communications channel associated with said location identifier and wherein said access code is useable by the mobile telephone to cause the routing controller to establish a call to the callee using the channel"	'234 patent, claim 10
"means for receiving, from a user of the mobile telephone, a callee identifier associated with the callee"	'234 patent, claim 11
"transmitting means for transmitting an access code request message to an access server to seek an access code from a pool of access codes wherein each access code in said pool of access codes identifies a respective telephone number or Internet Protocol (IP) network address that enables a local call to be made to call the callee identified by the callee identifier, said access code request message including said callee identifier and a location identifier separate and distinctive from said callee identifier, said location identifier identifying a location of the mobile telephone"	'234 patent, claim 11
"means for receiving an access code reply message from the access server in response to said access code request message, said access code reply	'234 patent, claim 11

Phrase	Patent/Claim
message including an access code different from said callee identifier and associated with said location identifier and/or associated with a location pre-associated with the mobile telephone and wherein said access code expires after a period of time"	
"means for initiating a call using said access code to identify the callee"	'234 patent, claim 11
"routing controller"	'234 patent, claims 19, 28 '721 patent, claims 34, 49, 108
"access server"	'234 patent, claim 19
"means for receiving from the mobile telephone said access code request message"	'234 patent, claim 19
"means for communicating with said routing controller to obtain from said routing controller said access code wherein said access code identifies a channel associated with said location identifier and wherein said access code is useable by the mobile telephone to cause the routing controller to establish a call to the callee using the channel"	'234 patent, claim 19
"means for transmitting said access code reply message including said access code to the mobile telephone"	'234 patent, claim 19
"cause an access code request message to be transmitted to an access server to seek an access code from a pool of access codes wherein each access code in said pool of access codes identifies a respective telephone number or Internet Protocol (IP) network address that enables a local call to be made to call the callee identified by the callee identifier, said access code request message including said callee identifier and a location identifier separate and distinctive from said callee identifier, said location identifier identifying a location of the mobile telephone"	'234 patent, claim 20
"receive an access code reply message from the access server in response to said access code request message, said access code reply message including an access code different from said callee identifier and associated with said location identifier and/or associated with a location pre-associated with the mobile telephone and wherein said access code expires after a period of time"	'234 patent, claim 20
"wherein said location identifier comprises a user-configured identifier of a location associated with the mobile telephone"	'234 patent, claims 24, 37

Phrase	Patent/Claim
"communicate with said routing controller to obtain from said routing controller said access code wherein said access code identifies a channel associated with said location identifier and wherein said access code is useable by the mobile telephone to cause the routing controller to establish a call to the callee using the channel"	'234 patent, claim 28
"receiving from the mobile telephone an access code request message including a callee identifier associated with the callee and a location identifier separate and distinctive from said callee identifier, identifying a location of the mobile telephone"	'234 patent, claim 30
"producing an access code identifying a communication channel based on said location identifier and/or based on a location pre-associated with the mobile telephone, said access code being different from the callee identifier and useable by the mobile telephone to initiate a call to the callee using the channel, and wherein said access code expires after a period of time and wherein producing said access code comprises selecting said access code from a pool of access codes, wherein each access code in said pool of access codes identifies a respective telephone number or Internet Protocol (IP) network address"	'234 patent, claim 30
"wherein receiving comprises receiving said access code request message on a non-voice network"	'234 patent, claim 31
"wherein producing said access code comprises causing a routing controller operably configured to route a call between said caller and said callee to produce said access code"	'234 patent, claim 32
"determining from said location identifier a local calling area associated with the mobile telephone and selecting an access code associated with a calling area matching said local calling area associated with the mobile telephone"	'234 patent, claim 33
"wherein at least one of said access codes in said pool of access codes identifies an IP network address as a possible channel through which said call can be conducted"	'234 patent, claims 38, 54, 70
"wherein said access code request message includes a caller identifier and wherein the method further comprises associating said caller identifier included in said access code request message with the selected access code"	'234 patent, claim 40
"wherein transmitting comprises transmitting said access code reply message on a non-voice network"	'234 patent, claim 45
"means for receiving from the mobile telephone an access code request message including a callee identifier associated with the callee and a	'234 patent, claim 46

Phrase	Patent/Claim
location identifier separate and distinctive from said callee identifier, identifying a location of the mobile telephone”	
“means for producing an access code identifying a communication channel based on said location identifier and/or based on a location pre-associated with the mobile telephone, said access code being different from the callee identifier and useable by the mobile telephone to initiate a call to the callee using the channel and wherein said access code expires after a period of time and wherein said means for producing said access code comprises means for selecting said access code from a pool of access codes wherein each access code in said pool of access codes identifies a respective telephone number or Internet Protocol (IP) network address”	’234 patent, claim 46
“means for transmitting an access code reply message including said access code to the mobile telephone”	’234 patent, claim 46
“wherein said means for receiving comprises a non-voice network interface for receiving said access code request message on a non-voice network”	’234 patent, claim 47
“wherein said means for producing said access code comprises a routing controller operably configured to route a call between said caller and said callee”	’234 patent, claim 48
“wherein said location identifier includes a user-configured identifier of a location associated with the mobile telephone”	’234 patent, claim 53
“wherein said means for transmitting comprises a non-voice network interface for transmitting said access code reply message on a non-voice network”	’234 patent, claim 61
“receive from the mobile telephone an access code request message including a callee identifier associated with the callee and a location identifier separate and distinctive from said callee identifier, identifying a location of the mobile telephone”	’234 patent, claim 62
“communicate with a routing controller to obtain from said routing controller an access code identifying a communication channel, said access code being determined from said location identifier and/or based on a location pre-associated with the mobile telephone and said access code being different from the callee identifier and useable by the mobile telephone to initiate a call to the callee using the channel, and wherein said access code expires after a period of time and wherein said access code is selected from a pool of access codes and wherein each access code	’234 patent, claim 62

Phrase	Patent/Claim
in said pool of access codes identifies a respective telephone number or Internet Protocol (IP) network address"	
"wherein said codes for directing said processor circuit include codes for directing said processor circuit to cause a routing controller to produce said access code"	'234 patent, claim 64
"wherein said codes for directing said processor circuit include codes for directing said processor circuit to determine from said location identifier a local calling area associated with the mobile telephone and to select an access code associated with a calling area matching said local calling area associated with the mobile telephone"	'234 patent, claim 65
"wherein said access code request message includes a caller identifier and wherein said codes for directing said processor circuit include codes for directing said processor circuit to associate said caller identifier included in said access code request message with the selected access code"	'234 patent, claim 72
"wherein said codes for directing said processor circuit include codes for directing said processor circuit to associate a timestamp with said access code, for use in determining when the usability of said access code to initiate a call to the callee will expire, and to cause said timestamp to be included in said access code reply message"	'234 patent, claim 75
"transmitting an access code request message to an access server, the access code request message including the destination node identifier and a location identifier identifying a geographical location of the wireless device"	'721 patent, claim 1
"receiving an access code reply message from the access server in response to the access code request message, the access code reply message including an access code based on the location identifier in the access code request message, the access code identifying a communications channel on a gateway through which communications between the wireless device and the destination node can be conducted, the access code being distinct from the destination node identifier"	'721 patent, claim 1
"in response to receiving the access code reply message, causing the wireless device to use the access code received in the access code reply message to initiate communications from the wireless device to the destination node through the channel identified by the access code, wherein the access code is based on the location identifier transmitted in the access code request message and enables the communications to be established from the wireless device to the destination node through the channel on the gateway identified by the access code"	'721 patent, claim 1

Phrase	Patent/Claim
"wherein establishing communications between the wireless device and the destination node comprises engaging a routing controller to route the call on a public switched telephone network (PSTN) or an IP network to the destination node"	'721 patent, claim 15
"causing the access server to communicate with a routing controller to obtain from the routing controller the access code, wherein the access code identifies a communications channel associated with the location identifier and wherein the access code is useable by the wireless device in a subsequent communication to cause the routing controller to establish a call to the destination node using the communications channel"	'721 patent, claim 16
"means for receiving from a user of the wireless apparatus a destination node identifier associated with a destination node with which the user wishes to communicate"	'721 patent, claim 20
"means for transmitting an access code request message to an access server, the access code request message including the destination node identifier and a location identifier identifying a geographical location of the wireless apparatus"	'721 patent, claim 20
"means for receiving an access code reply message from the access server in response to the access code request message, the access code reply message including an access code based on the location identifier in the access code request message, the access code identifying a communications channel on a gateway through which communications between the wireless apparatus and the destination node can be conducted, the access code being distinct from the destination node identifier"	'721 patent, claim 20
"means for causing the wireless apparatus to establish communications with the destination node through the communications channel identified by the access code in the access code reply message, the access code being based on the location identifier transmitted in the access code request message"	'721 patent, claim 20
"access server, wherein the access server comprises"	'721 patent, claim 34
"means for receiving from the wireless apparatus the access code request message"	'721 patent, claim 34
"means for communicating with the routing controller to obtain from the routing controller the access code wherein the access code identifies a communications channel associated with the location identifier and wherein the access code is useable by the wireless apparatus to cause the	'721 patent, claim 34

Phrase	Patent/Claim
routing controller to establish a call to the destination node using the communications channel”	
“means for transmitting the access code reply message including the access code to the wireless apparatus”	’721 patent, claim 34
“network interface in communication with the processor circuit”	’721 patent, claims 38, 103
“transmit an access code request message to an access server, the access code request message including the destination node identifier and a location identifier identifying a geographical location of the wireless apparatus”	’721 patent, claim 38
“receive an access code reply message from the access server in response to the access code request message, the access code reply message including an access code based on the location identifier in the access code request message, the access code identifying a communications channel on a gateway through which communications between the wireless apparatus and the destination node can be conducted, the access code being distinct from the destination node identifier”	’721 patent, claim 38
“initiate communications from the wireless apparatus, via the network interface, using the access code based on the location identifier, to establish communications between the wireless apparatus and the destination node through the communications channel identified by the access code”	’721 patent, claim 38
“wherein the network interface comprises a non-voice network interface, and wherein the codes for directing the processor circuit to cause the access code request message to be transmitted include codes for directing the processor circuit to cause the access code request message to be transmitted to the access server using the non-voice network interface on a non-voice network”	’721 patent, claim 39
“wherein the location identifier comprises a user-configured identifier of a location associated with the wireless apparatus”	’721 patent, claim 45
“wherein the network interface comprises a non-voice network interface, and wherein the codes for directing the processor circuit to receive an access code reply message include codes for directing the processor circuit to cause the access code reply message to be received from the access server using the non-voice network interface on a non-voice network”	’721 patent, claim 46
“communicate with the routing controller to obtain from the routing controller the access code wherein the access code identifies a	’721 patent, claim 49

Phrase	Patent/Claim
communications channel associated with the location identifier and wherein the access code is useable by the wireless apparatus to cause the routing controller to establish a call to the destination node using the communications channel"	
"cause the wireless device to transmit an access code request message to an access server, the access code request message including the destination node identifier and a location identifier identifying a geographical location of the wireless device"	'721 patent, claim 50
"cause the wireless device to receive an access code reply message comprising an access code identifying an Internet Protocol (IP) address based on the location identifier in the access code request message, the access code representing a communications channel of a network element in the network through which communications between the wireless device and the destination node can be conducted, the communications channel being associated with the geographical location of the wireless device, the access code being distinct from the destination node identifier"	'721 patent, claim 50
"cause the wireless device to use the access code comprising the Internet Protocol (IP) address based on the location identifier to establish communications between the wireless device and the destination node through the communications channel of the network element identified by the access code"	'721 patent, claim 50
"receiving from the wireless device an access code request message including a destination node identifier associated with the destination node and a location identifier identifying a geographical location of the wireless device"	'721 patent, claim 51
"in response to receiving the access code request message, causing a routing controller to produce an access code identifying a communications channel on a gateway through which communications between the wireless device and the destination node can be conducted, the access code being based on the location identifier of the access code request message received from the wireless device, wherein the access code is useable by the wireless device to initiate communications with the destination node through the communications channel"	'721 patent, claim 51
"transmitting, to the wireless device, an access code reply message including the access code based on the location identifier, to cause the wireless device to use the access code to initiate communications with the destination node through the communications channel"	'721 patent, claim 51

Phrase	Patent/Claim
"wherein causing the routing controller to produce the access code comprises causing the access code to be selected from a pool of access codes"	'721 patent, claim 57
"wherein the access code request message includes a caller identifier and wherein the method further comprises associating the caller identifier included in the access code request message with the access code produced by the routing controller"	'721 patent, claim 67
"means for receiving from the wireless device an access code request message including a destination node identifier associated with the destination node and a location identifier identifying a geographical location of the wireless device"	'721 patent, claim 77
"means for causing a routing controller to produce an access code identifying a communications channel on a gateway through which communications between the wireless device and the destination node can be conducted, in response to receiving the access code request message, such that the access code is produced based on the location identifier of the access code request message received from the wireless device and such that the access code is useable by the wireless device to initiate communications with the destination node through the communications channel"	'721 patent, claim 77
"means for transmitting an access code reply message including the access code to the wireless device, wherein the access code in the access code reply message is based on the location identifier and is used by the wireless device to initiate communications with the destination node through the communications channel on the gateway"	'721 patent, claim 77
"receive from the wireless device an access code request message including a destination node identifier associated with the destination node and a location identifier identifying a geographical location of the wireless device"	'721 patent, claim 103
"cause a routing controller to produce an access code identifying a communications channel on a gateway through which communications between the wireless device and the destination node can be conducted, in response to receiving the access code request message, such that the access code is produced based on the location identifier of the access code request message received from the wireless device and such that the access code is useable by the wireless device to initiate communications with the destination node through the communications channel"	'721 patent, claim 103
"wherein the network interface comprises a non-voice network interface, and wherein the codes for directing the processor circuit to receive	'721 patent, claim 104

Phrase	Patent/Claim
include codes for directing the processor circuit to cause the access code request message to be received using the non-voice network interface on a non-voice network"	
"wherein the routing controller is operably configured to cause the access code to be selected from a pool of access codes, wherein none of the access codes in the pool of access codes identifies a respective telephone number"	'721 patent, claim 109
"wherein the routing controller is operably configured to determine from the location identifier a local calling area associated with the wireless device and to select an access code associated with a calling area matching the local calling area associated with the wireless device"	'721 patent, claim 110
"wherein the routing controller is operably configured to enable communications to be established between the wireless device and the destination node when the wireless device seeks to establish a call to the destination node using the access code transmitted in the access code reply message when a timestamp associated with the access code indicates that usability of the access code has not expired and to prevent the communications from being established when the timestamp indicates that the usability of the access code has expired"	'721 patent, claim 124
"in response to receiving the request message, producing an access code identifying a second Internet Protocol (IP) address associated with an IP network communication device through which communications between the wireless device and the destination node can be conducted, wherein the access code is produced based on the location identifier received from the wireless device, wherein the access code is useable by the wireless device to initiate communications with the destination node through the IP network communication device"	'721 patent, claim 130
"transmitting a reply message including the access code to the wireless device, wherein the second Internet Protocol (IP) address is based on the location identifier and is used by the wireless device to initiate communications with the destination node through a communication channel on the IP network communication device"	'721 patent, claim 130
"if the destination node is a PSTN telephone on the public switched telephone network (PSTN), establishing communications from the wireless device to a communications supplier gateway operable to connect to the PSTN telephone via the public switched telephone network (PSTN)"	'721 patent, claim 133
"wherein the access code reply message identifies an Internet Protocol (IP) network address of the communications channel through which the	'721 patent, claim 138

Phrase	Patent/Claim
communications can be conducted, wherein the access code is useable by the wireless device to initiate the communications with the destination node through the communications channel"	
"wherein the access code reply message identifies an Internet Protocol (IP) network address associated with the communications channel through which the communications can be conducted, wherein the Internet Protocol (IP) network address is useable by the wireless device to initiate the communications with the destination node through the communications channel"	'721 patent, claim 139

To the extent that other Asserted Claims contain one or more of these terms or phrases or similar phrases, either directly or by being dependent on a claim that does, those Asserted Claims are invalid under 35 U.S.C. § 112.

Defendants further contend that, under Plaintiff's apparent claim constructions as reflected in its infringement contentions, all of the Asserted Claims are unreasonably uncertain, vague, and ambiguous in scope. Plaintiff is attempting to construe the Asserted Patents in a manner that is inconsistent with the claims themselves, written specification, prosecution histories, understanding of one of ordinary skill in the art, and other extrinsic evidence.

B. Lack of Written Description and Enablement

The Asserted Claims are invalid because they fail to meet the enablement requirement of 35 U.S.C. § 112. Defendants contend that Plaintiff's apparent claim constructions as reflected in its infringement contentions render all of the asserted claims overly broad in scope. Plaintiff is attempting to construe the Asserted Patents in a manner that is inconsistent with the claims themselves, written specification, prosecution histories, understanding of one of ordinary skill in the art, and other extrinsic evidence.

The Asserted Patents do not disclose sufficient information to enable or teach one of ordinary skill in the art at the time of the alleged invention to make and use the full scope of the

alleged invention without undue experimentation for at least the following terms or phrases. The Asserted Patents also fail to satisfy the written description requirement of 35 U.S.C. § 112 for these same claim elements because, especially under Plaintiff's apparent claim constructions as reflected in its infringement contentions, the patents do not adequately describe the patented technology and do not demonstrate that the inventors were in possession of the claimed inventions at the time of filing.

Phrase	Patent/Claim
"transmitting an access code request message to an access server to seek an access code from a pool of access codes wherein each access code in said pool of access codes identifies a respective telephone number or Internet Protocol (IP) network address that enables a local call to be made to call the callee identified by the callee identifier, said access code request message including said callee identifier and a location identifier separate and distinctive from said callee identifier, said location identifier identifying a location of the mobile telephone"	'234 patent, claim 1
"receiving an access code reply message from the access server in response to said access code request message, said access code reply message including an access code different from said callee identifier and associated with said location identifier and/or associated with a location pre-associated with the mobile telephone and wherein said access code expires after a period of time"	'234 patent, claim 1
"communicating with a routing controller to obtain from the routing controller said access code wherein said access code identifies a communications channel associated with said location identifier and wherein said access code is useable by the mobile telephone to cause the routing controller to establish a call to the callee using the channel"	'234 patent, claim 10
"means for receiving, from a user of the mobile telephone, a callee identifier associated with the callee"	'234 patent, claim 11
"transmitting means for transmitting an access code request message to an access server to seek an access code from a pool of access codes wherein each access code in said pool of access codes identifies a respective telephone number or Internet Protocol (IP) network address that enables a local call to be made to call the callee identified by the callee identifier, said access code request message including said callee identifier and a location identifier separate and distinctive from said callee identifier, said location identifier identifying a location of the mobile telephone"	'234 patent, claim 11

Phrase	Patent/Claim
"means for receiving an access code reply message from the access server in response to said access code request message, said access code reply message including an access code different from said callee identifier and associated with said location identifier and/or associated with a location pre-associated with the mobile telephone and wherein said access code expires after a period of time"	'234 patent, claim 11
"means for initiating a call using said access code to identify the callee"	'234 patent, claim 11
"routing controller"	'234 patent, claims 19, 28 '721 patent, claims 34, 49, 108
"access server"	'234 patent, claim 19
"means for receiving from the mobile telephone said access code request message"	'234 patent, claim 19
"means for communicating with said routing controller to obtain from said routing controller said access code wherein said access code identifies a channel associated with said location identifier and wherein said access code is useable by the mobile telephone to cause the routing controller to establish a call to the callee using the channel"	'234 patent, claim 19
"means for transmitting said access code reply message including said access code to the mobile telephone"	'234 patent, claim 19
"cause an access code request message to be transmitted to an access server to seek an access code from a pool of access codes wherein each access code in said pool of access codes identifies a respective telephone number or Internet Protocol (IP) network address that enables a local call to be made to call the callee identified by the callee identifier, said access code request message including said callee identifier and a location identifier separate and distinctive from said callee identifier, said location identifier identifying a location of the mobile telephone"	'234 patent, claim 20
"receive an access code reply message from the access server in response to said access code request message, said access code reply message including an access code different from said callee identifier and associated with said location identifier and/or associated with a location pre-associated with the mobile telephone and wherein said access code expires after a period of time"	'234 patent, claim 20

Phrase	Patent/Claim
"wherein said location identifier comprises a user-configured identifier of a location associated with the mobile telephone"	'234 patent, claims 24, 37
"communicate with said routing controller to obtain from said routing controller said access code wherein said access code identifies a channel associated with said location identifier and wherein said access code is useable by the mobile telephone to cause the routing controller to establish a call to the callee using the channel"	'234 patent, claim 28
"receiving from the mobile telephone an access code request message including a callee identifier associated with the callee and a location identifier separate and distinctive from said callee identifier, identifying a location of the mobile telephone"	'234 patent, claim 30
"producing an access code identifying a communication channel based on said location identifier and/or based on a location pre-associated with the mobile telephone, said access code being different from the callee identifier and useable by the mobile telephone to initiate a call to the callee using the channel, and wherein said access code expires after a period of time and wherein producing said access code comprises selecting said access code from a pool of access codes, wherein each access code in said pool of access codes identifies a respective telephone number or Internet Protocol (IP) network address"	'234 patent, claim 30
"wherein receiving comprises receiving said access code request message on a non-voice network"	'234 patent, claim 31
"wherein producing said access code comprises causing a routing controller operably configured to route a call between said caller and said callee to produce said access code"	'234 patent, claim 32
"determining from said location identifier a local calling area associated with the mobile telephone and selecting an access code associated with a calling area matching said local calling area associated with the mobile telephone"	'234 patent, claim 33
"wherein at least one of said access codes in said pool of access codes identifies an IP network address as a possible channel through which said call can be conducted"	'234 patent, claims 38, 54, 70
"wherein said access code request message includes a caller identifier and wherein the method further comprises associating said caller identifier included in said access code request message with the selected access code"	'234 patent, claim 40
"wherein transmitting comprises transmitting said access code reply message on a non-voice network"	'234 patent, claim 45

Phrase	Patent/Claim
“means for receiving from the mobile telephone an access code request message including a callee identifier associated with the callee and a location identifier separate and distinctive from said callee identifier, identifying a location of the mobile telephone”	’234 patent, claim 46
“means for producing an access code identifying a communication channel based on said location identifier and/or based on a location pre-associated with the mobile telephone, said access code being different from the callee identifier and useable by the mobile telephone to initiate a call to the callee using the channel and wherein said access code expires after a period of time and wherein said means for producing said access code comprises means for selecting said access code from a pool of access codes wherein each access code in said pool of access codes identifies a respective telephone number or Internet Protocol (IP) network address”	’234 patent, claim 46
“means for transmitting an access code reply message including said access code to the mobile telephone”	’234 patent, claim 46
“wherein said means for receiving comprises a non-voice network interface for receiving said access code request message on a non-voice network”	’234 patent, claim 47
“wherein said means for producing said access code comprises a routing controller operably configured to route a call between said caller and said callee”	’234 patent, claim 48
“wherein said location identifier includes a user-configured identifier of a location associated with the mobile telephone”	’234 patent, claim 53
“wherein said means for transmitting comprises a non-voice network interface for transmitting said access code reply message on a non-voice network”	’234 patent, claim 61
“receive from the mobile telephone an access code request message including a callee identifier associated with the callee and a location identifier separate and distinctive from said callee identifier, identifying a location of the mobile telephone”	’234 patent, claim 62
“communicate with a routing controller to obtain from said routing controller an access code identifying a communication channel, said access code being determined from said location identifier and/or based on a location pre-associated with the mobile telephone and said access code being different from the callee identifier and useable by the mobile telephone to initiate a call to the callee using the channel, and wherein said access code expires after a period of time and wherein said access	’234 patent, claim 62

Phrase	Patent/Claim
code is selected from a pool of access codes and wherein each access code in said pool of access codes identifies a respective telephone number or Internet Protocol (IP) network address”	
“wherein said codes for directing said processor circuit include codes for directing said processor circuit to cause a routing controller to produce said access code”	’234 patent, claim 64
“wherein said codes for directing said processor circuit include codes for directing said processor circuit to determine from said location identifier a local calling area associated with the mobile telephone and to select an access code associated with a calling area matching said local calling area associated with the mobile telephone”	’234 patent, claim 65
“wherein said access code request message includes a caller identifier and wherein said codes for directing said processor circuit include codes for directing said processor circuit to associate said caller identifier included in said access code request message with the selected access code”	’234 patent, claim 72
“wherein said codes for directing said processor circuit include codes for directing said processor circuit to associate a timestamp with said access code, for use in determining when the usability of said access code to initiate a call to the callee will expire, and to cause said timestamp to be included in said access code reply message”	’234 patent, claim 75
“transmitting an access code request message to an access server, the access code request message including the destination node identifier and a location identifier identifying a geographical location of the wireless device”	’721 patent, claim 1
“receiving an access code reply message from the access server in response to the access code request message, the access code reply message including an access code based on the location identifier in the access code request message, the access code identifying a communications channel on a gateway through which communications between the wireless device and the destination node can be conducted, the access code being distinct from the destination node identifier”	’721 patent, claim 1
“in response to receiving the access code reply message, causing the wireless device to use the access code received in the access code reply message to initiate communications from the wireless device to the destination node through the channel identified by the access code, wherein the access code is based on the location identifier transmitted in the access code request message and enables the communications to be established from the wireless device to the destination node through the channel on the gateway identified by the access code”	’721 patent, claim 1

Phrase	Patent/Claim
"wherein establishing communications between the wireless device and the destination node comprises engaging a routing controller to route the call on a public switched telephone network (PSTN) or an IP network to the destination node"	'721 patent, claim 15
"causing the access server to communicate with a routing controller to obtain from the routing controller the access code, wherein the access code identifies a communications channel associated with the location identifier and wherein the access code is useable by the wireless device in a subsequent communication to cause the routing controller to establish a call to the destination node using the communications channel"	'721 patent, claim 16
"means for receiving from a user of the wireless apparatus a destination node identifier associated with a destination node with which the user wishes to communicate"	'721 patent, claim 20
"means for transmitting an access code request message to an access server, the access code request message including the destination node identifier and a location identifier identifying a geographical location of the wireless apparatus"	'721 patent, claim 20
"means for receiving an access code reply message from the access server in response to the access code request message, the access code reply message including an access code based on the location identifier in the access code request message, the access code identifying a communications channel on a gateway through which communications between the wireless apparatus and the destination node can be conducted, the access code being distinct from the destination node identifier"	'721 patent, claim 20
"means for causing the wireless apparatus to establish communications with the destination node through the communications channel identified by the access code in the access code reply message, the access code being based on the location identifier transmitted in the access code request message"	'721 patent, claim 20
"access server, wherein the access server comprises"	'721 patent, claim 34
"means for receiving from the wireless apparatus the access code request message"	'721 patent, claim 34
"means for communicating with the routing controller to obtain from the routing controller the access code wherein the access code identifies a communications channel associated with the location identifier and wherein the access code is useable by the wireless apparatus to cause the	'721 patent, claim 34

Phrase	Patent/Claim
routing controller to establish a call to the destination node using the communications channel”	
“means for transmitting the access code reply message including the access code to the wireless apparatus”	’721 patent, claim 34
“network interface in communication with the processor circuit”	’721 patent, claims 38, 103
“transmit an access code request message to an access server, the access code request message including the destination node identifier and a location identifier identifying a geographical location of the wireless apparatus”	’721 patent, claim 38
“receive an access code reply message from the access server in response to the access code request message, the access code reply message including an access code based on the location identifier in the access code request message, the access code identifying a communications channel on a gateway through which communications between the wireless apparatus and the destination node can be conducted, the access code being distinct from the destination node identifier”	’721 patent, claim 38
“initiate communications from the wireless apparatus, via the network interface, using the access code based on the location identifier, to establish communications between the wireless apparatus and the destination node through the communications channel identified by the access code”	’721 patent, claim 38
“wherein the network interface comprises a non-voice network interface, and wherein the codes for directing the processor circuit to cause the access code request message to be transmitted include codes for directing the processor circuit to cause the access code request message to be transmitted to the access server using the non-voice network interface on a non-voice network”	’721 patent, claim 39
“wherein the location identifier comprises a user-configured identifier of a location associated with the wireless apparatus”	’721 patent, claim 45
“wherein the network interface comprises a non-voice network interface, and wherein the codes for directing the processor circuit to receive an access code reply message include codes for directing the processor circuit to cause the access code reply message to be received from the access server using the non-voice network interface on a non-voice network”	’721 patent, claim 46
“communicate with the routing controller to obtain from the routing controller the access code wherein the access code identifies a	’721 patent, claim 49

Phrase	Patent/Claim
communications channel associated with the location identifier and wherein the access code is useable by the wireless apparatus to cause the routing controller to establish a call to the destination node using the communications channel"	
"cause the wireless device to transmit an access code request message to an access server, the access code request message including the destination node identifier and a location identifier identifying a geographical location of the wireless device"	'721 patent, claim 50
"cause the wireless device to receive an access code reply message comprising an access code identifying an Internet Protocol (IP) address based on the location identifier in the access code request message, the access code representing a communications channel of a network element in the network through which communications between the wireless device and the destination node can be conducted, the communications channel being associated with the geographical location of the wireless device, the access code being distinct from the destination node identifier"	'721 patent, claim 50
"cause the wireless device to use the access code comprising the Internet Protocol (IP) address based on the location identifier to establish communications between the wireless device and the destination node through the communications channel of the network element identified by the access code"	'721 patent, claim 50
"receiving from the wireless device an access code request message including a destination node identifier associated with the destination node and a location identifier identifying a geographical location of the wireless device"	'721 patent, claim 51
"in response to receiving the access code request message, causing a routing controller to produce an access code identifying a communications channel on a gateway through which communications between the wireless device and the destination node can be conducted, the access code being based on the location identifier of the access code request message received from the wireless device, wherein the access code is useable by the wireless device to initiate communications with the destination node through the communications channel"	'721 patent, claim 51
"transmitting, to the wireless device, an access code reply message including the access code based on the location identifier, to cause the wireless device to use the access code to initiate communications with the destination node through the communications channel"	'721 patent, claim 51

Phrase	Patent/Claim
“wherein causing the routing controller to produce the access code comprises causing the access code to be selected from a pool of access codes”	’721 patent, claim 57
“wherein the access code request message includes a caller identifier and wherein the method further comprises associating the caller identifier included in the access code request message with the access code produced by the routing controller”	’721 patent, claim 67
“means for receiving from the wireless device an access code request message including a destination node identifier associated with the destination node and a location identifier identifying a geographical location of the wireless device”	’721 patent, claim 77
“means for causing a routing controller to produce an access code identifying a communications channel on a gateway through which communications between the wireless device and the destination node can be conducted, in response to receiving the access code request message, such that the access code is produced based on the location identifier of the access code request message received from the wireless device and such that the access code is useable by the wireless device to initiate communications with the destination node through the communications channel”	’721 patent, claim 77
“means for transmitting an access code reply message including the access code to the wireless device, wherein the access code in the access code reply message is based on the location identifier and is used by the wireless device to initiate communications with the destination node through the communications channel on the gateway”	’721 patent, claim 77
“receive from the wireless device an access code request message including a destination node identifier associated with the destination node and a location identifier identifying a geographical location of the wireless device”	’721 patent, claim 103
“cause a routing controller to produce an access code identifying a communications channel on a gateway through which communications between the wireless device and the destination node can be conducted, in response to receiving the access code request message, such that the access code is produced based on the location identifier of the access code request message received from the wireless device and such that the access code is useable by the wireless device to initiate communications with the destination node through the communications channel”	’721 patent, claim 103
“wherein the network interface comprises a non-voice network interface, and wherein the codes for directing the processor circuit to receive	’721 patent, claim 104

Phrase	Patent/Claim
include codes for directing the processor circuit to cause the access code request message to be received using the non-voice network interface on a non-voice network"	
"wherein the routing controller is operably configured to cause the access code to be selected from a pool of access codes, wherein none of the access codes in the pool of access codes identifies a respective telephone number"	'721 patent, claim 109
"wherein the routing controller is operably configured to determine from the location identifier a local calling area associated with the wireless device and to select an access code associated with a calling area matching the local calling area associated with the wireless device"	'721 patent, claim 110
"wherein the routing controller is operably configured to enable communications to be established between the wireless device and the destination node when the wireless device seeks to establish a call to the destination node using the access code transmitted in the access code reply message when a timestamp associated with the access code indicates that usability of the access code has not expired and to prevent the communications from being established when the timestamp indicates that the usability of the access code has expired"	'721 patent, claim 124
"in response to receiving the request message, producing an access code identifying a second Internet Protocol (IP) address associated with an IP network communication device through which communications between the wireless device and the destination node can be conducted, wherein the access code is produced based on the location identifier received from the wireless device, wherein the access code is useable by the wireless device to initiate communications with the destination node through the IP network communication device"	'721 patent, claim 130
"transmitting a reply message including the access code to the wireless device, wherein the second Internet Protocol (IP) address is based on the location identifier and is used by the wireless device to initiate communications with the destination node through a communication channel on the IP network communication device"	'721 patent, claim 130
"if the destination node is a PSTN telephone on the public switched telephone network (PSTN), establishing communications from the wireless device to a communications supplier gateway operable to connect to the PSTN telephone via the public switched telephone network (PSTN)"	'721 patent, claim 133
"wherein the destination node identifier and the location identifier are transmitted at the same time"	'721 patent, claim 136

Phrase	Patent/Claim
"wherein the access code reply message identifies an Internet Protocol (IP) network address of the communications channel through which the communications can be conducted, wherein the access code is useable by the wireless device to initiate the communications with the destination node through the communications channel"	'721 patent, claim 138
"wherein the access code reply message identifies an Internet Protocol (IP) network address associated with the communications channel through which the communications can be conducted, wherein the Internet Protocol (IP) network address is useable by the wireless device to initiate the communications with the destination node through the communications channel"	'721 patent, claim 139

To the extent other Asserted Claims contain one or more of these terms or phrases or similar phrases, either directly or by being dependent on a claim that does, those Asserted Claims are invalid under 35 U.S.C. § 112.

VI. PATENT-INELIGIBLE SUBJECT MATTER

All the Asserted Claims of the '234 and '721 patents are invalid under 35 U.S.C. § 101 for claiming ineligible subject matter. The OGP only requires Defendants to identify the claims that they contend are directed to ineligible subject matter at this stage. To satisfy this requirement, Defendants identify all of the Asserted Claims, including claims 1, 10, 11, 19, 20-22, 24-25, 28, 30-33, 35, 37-40, 43, 45-48, 51, 53, 54, 61, 62, 64, 65, 70, 72, and 75 of the '234 patent and claims 1, 6, 15, 16, 20, 25, 34, 38, 39, 43, 45, 46, 49-51, 63, 77, 103, 104, 109, 110, 124, 130, 133, 135, 136, 138, 139, and 140 of the '721 patent, as being directed to ineligible subject matter under Section 101.

Defendants will provide a full accounting of the bases for this conclusion at a later stage, consistent with the Court's OGP. Defendants nevertheless provide the following brief overview of some of the reasons that the Asserted Claims do not encompass eligible subject matter.

Defendants reserve the right to present additional or different reasons for asserting patent invalidity under Section 101 at a later date.

Abstract ideas are not patentable. *Alice Corp. v. CLS Bank Int'l*, 573 U.S. 208, 216 (2014). In *Alice*, the Supreme Court set out the two-step process for analyzing patent eligibility. *Id*. at 217–18. At *Alice* step one, a court determines whether a claim's character, considered as a whole, is directed to an abstract idea. *Elec. Power Grp., LLC v. Alstom S.A*., 830 F.3d 1350, 1353 (Fed. Cir. 2016). At *Alice* step two, a court "consider[s] the elements of the claim—both individually and as an ordered combination—to assess whether the additional elements transform the nature of the claim into a patent-eligible application of the abstract idea." *Content Extraction & Transmission LLC v. Wells Fargo Bank,* 776 F.3d 1343, 1347 (Fed. Cir. 2014) (citing *Alice*, 573 U.S. at 217–18).

The claims of the '234 and '721 patents are directed to abstract ideas concerning gathering and processing information. They are written in a form free of specific tangible implementation. Both the processing devices and the information that they process are claimed in the broadest, most generic, and functional terms. Indeed, the functions that the claims recite could be performed in the human mind or with pen and paper: they refer to passing call setup information between processing devices, comparing data in the messages with data or tables stored at one of the devices, and supplying and using code values drawn from pools of stored access codes. All of this activity is non-transformative and the sort of generic data-processing and communication functions that have been found in prior decisions of the federal courts to be outside the scope of patent protection. The claims are not directed to improving the functioning of a computer itself.

Furthermore, the functional steps that are identified in the claims are described generically and expansively and reflect longstanding practices in the domain of network call setup and traffic routing. Determining how to route communications based on the identity of the caller and callee

and the location of either of them is a fundamental practice of long-standing use in network communication. Routing decisions are often made based on information about the identity of the sender or recipient, the location of these parties and the characteristics of the various possible paths that may connect them, system capacity, and even the content of the traffic between the entities. The exchange of messages and routing decision making within the network are described in the Asserted Patents at such a high level of generality that they introduce nothing novel to processes that are already commonplace in the network communications domain. Similarly, the mobile device or wireless terminal and network servers that communicate the messages and perform the processing functions that the claims recite are described in completely functional terms as devices capable of performing processing and executing code. There is nothing inventive about them.

The claims of the ’234 and ’721 patents are directed to a functional result. The “caller identifier,” “callee identifier,” “location identifier,” “access codes,” “access server,” “gateway,” and “routing controller” referenced in the claims are all identified as performing the generic and standard functions of such elements in ordinary networking use. The “mobile telephone” or “wireless device” of the claims is described generically as a processing device that executes code and interfaces with a wireless network. The “access server” is described generically as a structure that includes a processor and code to perform various message passing and receiving functions. The Asserted Claims recite the function of passing messages containing certain data between these components and considering pieces of that data in making routing decisions. They recite that the outcome of the processing done by the mobile telephone, wireless device, access server, routing server, and gateway is that data is exchanged between these various components and communications are established between the caller and callee. The Asserted Claims attribute to each of the recited devices, functions, or characteristics that are already well-known to be associated with each of them so that they add nothing new to the operation of the devices.

Considered individually the elements of the claims lack an inventive concept. The patentees did not invent the concepts described in the claims. They did not invent any of: Internet telephony or VoIP communications; routing a communication channel; the use of a gateway for bridging between two different communication domains; the use of an access code or temporary telephone number or IP address for identifying a communication channel or port through a gateway; call setup messaging; the use of an access server as a counterpart for call setup communications; receiving a destination node identification or a callee identifier from a user; transmitting a call setup message to a network server; a call setup message that identifies the caller, callee and other information such as the IP address or location of the sender; a server that determines routing based on location information and other information about the parties, reserves channel resources accordingly and provides an access code or other channel identifier to the requesting device; network servers that access other network resources or servers, such as a routing server, to make routing decisions; network servers that assign channel resources or select access codes from a pool of such resources or codes; use of the assigned channel or access code in call initiation; association of expiration times and timestamps with routing information or access codes assigned to a particular call; or storage of call information at a network node or server for the purpose of call initiation and routing of call traffic.

When these conventional elements are assembled together in the Asserted Claims, they do not take on any transformative property that, considered as a whole, reflects an inventive concept. Instead, the conventional elements of the claim are used in an entirely conventional manner. The claims describe ordinary message passing and data-processing functions within a communications network. The data that is passed between these components, *e.g.*, the identification of the caller and callee, IP addresses, telephone numbers, location information, routing information, and access codes that identify a channel or route to a terminating device are all conventional pieces of data

used in many communication systems. None of the message passing or the pieces of data that the claims require to be placed in the messages are used in a novel manner or to solve a specific new problem. Using the recited message data elements at a network device to perform data comparisons and table lookups is not an inventive concept. Affixing an expiration time and timestamp with the routing information or access code is also conventional. Similarly, the devices described in the claims are strictly conventional mobile telephones or wireless devices, access servers, gateways and routing servers. The patent and claims describe these devices almost entirely with reference to the functions that they perform, reflecting the fact that the details of their construction are not important to the patent.

Moreover, the prior art cited throughout Defendants' contentions (including the charts attached hereto), as well as the patents themselves and the prior art cited or admitted to therein, demonstrate that the claim elements are directed to well-understood, routine, and conventional techniques and components.

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that a true and correct copy of the above and foregoing document has been served on January 25, 2022 to all counsel of record who are deemed to have consented to electronic service via email.

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