

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MOTOROLA SOLUTIONS, INC.

Petitioner

v.

STA GROUP LLC

Patent Owner

Inter Partes Review No.: IPR2024-00511

U.S. Patent No. 9,319,852

**PETITION FOR INTER PARTES REVIEW OF U.S. PATENT NO.
9,319,852 UNDER 35 U.S.C. §§311-319 AND 37 C.F.R. §§42.1-100, ET SEQ**

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[8d] receiving a first determination from the IS that the endpoint is not in adherence with capabilities of the predefined floor control mechanism and that a proxy is to be dynamically inserted to connect the endpoint to a virtual talk group, wherein the capabilities comprise quality of service, rules of transmission and trusted endpoint identity.

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1009	U.S. Patent No. 7,359,731	
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1015	U.S. Patent No. 8,892,149	“the ’149 patent”
1016	U.S. Patent Application Publication No. 2009/0298525	“Shaffer”
1017	U.S. Patent Application No. 12/127,397	“the ’397 Application”
1018	HARRY NEWTON, NEWTON’S TELECOM DICTIONARY (22nd Ed. 2006)	
1019	H.248.1 (2005.09)	
1020	B. Campbell <i>et al.</i> , <i>Session Initiation Protocol (SIP) Extension for Instant Messaging</i> , RFC 3428 (Dec. 2002)	

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1021	RFC 3428 Approved as Proposed Standard (2002)	
1022	DANIEL COLLINS, CARRIER GRADE VOICE OVER IP (2nd ed. 2003)	
1023	N. Greene, et al., <i>Media Gateway Control Protocol Architecture and Requirements</i> , RFC 2805 (Apr. 2000)	
1024	U.S. Patent Application Publication No. 2004/0133683	“Keller”
1025	U.S. Patent Application Publication No.2010/0004014	“Coulombe”
1026	U.S. Patent Application Publication No.2010/0004014	
1027	U.S. Patent App. Pub. No. 2003/0231639	
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1029	<i>OMA Push to Talk over Cellular (PoC) – Architecture V2.0</i> (OMA-AD-PoC-V2_0) (Feb. 26, 2008)	“PoC Architecture”
1030	<i>OMA Push to Talk over Cellular 2 Requirements V2.0</i> (OMA-RD-PoC-V2_0) (April 21, 2008)	“PoC Requirements”
1031	<i>OMA PoC System Description V2.0</i> (OMA-TS-PoC_System_Description-V2_0) (Feb. 26, 2008)	“PoC System Description”
1032	<i>OMA PoC Interworking Service V2.0</i> (OMA-TS-PoC_Interworking_Service-V2_0) (Feb. 26, 2008)	“PoC Interworking Service”
1033	<i>3GPP enablers for Open Mobile Alliance (OMA) Push-to-talk over Cellular (PoC) services</i> (3GPP TR23.979) V7.0.0 (June 2007)	“TR23.979”
1034	<i>3GPP General Packet Radio Service (GPRS) Description</i> (3GPP TS23.060) V8.0.0 (March 2008)	“TS23.060”
1035	U.S. Patent No 7,774,012	“Chowdhury”

Exhibit No.	Description	Short-Hand
1036	U.S. Patent Application Publication No. 2006/0003781	“Jin”
1037	Push to Talk over Cellular (PoC) - Architecture V2.0 (OMA-AD-PoC-V2_0) (February 26, 2008)	
1038	OMA Push to Talk over Cellular 2 Requirements V2.0 (OMA-RD-PoC-V2_0) (April 21, 2008)	
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1040	OMA PoC Interworking Service V2.0 (OMA-TS-PoC_Interworking_Service-V2_0) (February 26, 2008)	
1041	2008.09.05 - Push to talk over Cellular V2.0	
1042	OMA FTP PoC Public Documents (July 11, 2007), available at https://web.archive.org/web/20070711185720/http://member.openmobilealliance.org/ftp/public_documents/POC/Permanent_documents/	
1043	OMA Release Program and Specifications (October 26, 2007), available at https://web.archive.org/web/20071026121236/http://www.openmobilealliance.org/release_program/index.html	
1044	OMA Push to talk over Cellular Working Group (February 20, 2008), available at https://web.archive.org/web/20080220172844/http://www.openmobilealliance.org/Technical/poc.aspx	
1045	OMA Technical Section - Publicly Available Documents (February 23, 2008), available at https://web.archive.org/web/20080223000148/http://www.	

Exhibit No.	Description	Short-Hand
	openmobilealliance.org/tech/publicmaterial.html	
1046	OMA Publicly Available Documents (March 8, 2008), available at https://web.archive.org/web/20080308082514/http://www.openmobilealliance.org/Technical/PublicMaterial.aspx	
1047	3GPP Specifications Home Page (July 2, 2007), available at https://web.archive.org/web/20070702234758/http://www.3gpp.org/specs/specs.htm	
1048	3GPP specification Release version matrix (July 4, 2007), available at https://web.archive.org/web/20070704004228/http://www.3gpp.org/ftp/Specs/html-info/SpecReleaseMatrix.htm	
1049	3GPP Specification 23.979 (August 3, 2007), available at https://web.archive.org/web/20070803213451/http://www.3gpp.org/ftp/Specs/html-info/23979.htm	
1050	3GPP specification status report (September 17, 2007), available at https://web.archive.org/web/20070917060533/http://www.3gpp.org/ftp/Specs/html-info/status-report.htm	
1051	3GPP Specifications Releases (and phases and stages) (October 20, 2007), available at https://web.archive.org/web/20071020044252/http://www.3gpp.org/specs/releases.htm	
1052	3GPP Specifications Releases (and phases and stages) (March 31, 2008), available at https://web.archive.org/web/20080331005358/http://www.3gpp.org/specs/releases.htm	

Exhibit No.	Description	Short-Hand
1053	3GPP Specification 23.060 (April 21, 2008), available at https://web.archive.org/web/20080421203604/http://www.3gpp.org/FTP/Specs/html-info/23060.htm	
1054	3GPP specification Release version matrix (April 25, 2008), available at https://web.archive.org/web/20080425220025/http://www.3gpp.org/ftp/Specs/html-info/SpecReleaseMatrix.htm	
1055	3GPP specification status report (April 30, 2008), available at https://web.archive.org/web/20080430174910/http://www.3gpp.org:80/ftp/Specs/html-info/status-report.htm	
1056	3GPP Home Page (March 31, 2008), available at https://web.archive.org/web/20080331113619/http://www.3gpp.org/	
1057	2006.01.11 - Motorola Push-To-Talk Over Cellular	
1058	2006.02.22 - PoC Consortium Phase 2 Specifications and Documentation	
1059	2007.12.13 - Motorola Push-To-Talk Over Cellular	
1060	Motorla PoC Solution Brochure (2004)	
1061	Declaration of Madhu Pai	

9,319,852 Claims

[1pre] An apparatus comprising a processor, wherein the processor is configured to:

[1a] identify information related to an endpoint to obtain identified information; and

[1b] negotiate a communication session with an interoperability server (IS) based in part on at least one of the identified information or a predefined floor control mechanism associated with the IS; and

[1c] receive a first determination from the IS that the endpoint is not in adherence with capabilities of the predefined floor control mechanism and that a proxy is to be dynamically inserted to connect the endpoint to a virtual talk group, wherein the capabilities comprise quality of service, rules of transmission and trusted endpoint identity.

[2] The apparatus of claim 1, wherein the processor is further configured to identify media capabilities associated with the endpoint, the media capabilities employed by the IS to dynamically determine if the endpoint should be connected to the virtual talk group via the proxy.

[3] The apparatus of claim 2, further comprising a transmitter, wherein the transmitter transmits data to the virtual talk group if it is determined that the proxy is not employed to connect the endpoint to the virtual talk group.

[4] The apparatus of claim 2, further comprising a transmitter, wherein the transmitter transmits data to the proxy over a private channel if it is determined that the proxy is employed to connect the endpoint to the virtual talk group.

[5] The apparatus of claim 1, wherein the processor is further configured to determine an identity associated with the endpoint, the identity employed by the IS to dynamically determine if the endpoint should be connected to the virtual talk group via the proxy.

[7] The apparatus of claim 1, wherein the processor is further configured to monitor endpoints directly connected to the virtual talk group and determines that a directly connected endpoint is not conforming with a floor control policy of the virtual talk group.

[8pre] A method comprising:

[8a] initiating communication with a non-compatible communication device;

[8b] identifying information associated with an initiating device; and

[8c] negotiating a communication session with an interoperability server (IS) based in part on at least one of the identified information or a predefined floor control mechanism associated with the IS; and
[8d] receiving a first determination from the IS that the initiating device is not in adherence with capabilities of the predefined floor control mechanism and that a proxy is to be dynamically inserted to connect the initiating device to a virtual talk group, wherein the capabilities comprise quality of service, rules of transmission and trusted endpoint identity.
[9] The method of claim 8, wherein the information associated with the initiating device includes at least one of media capability information associated with the initiating device or an identity of the initiating device.
[10] The method of claim 8, further comprising transmitting media to the proxy over a private network through custom messages if it is evaluated that the proxy is employed.
[11] The method of claim 8, further comprising, attaching the initiating device directly to the virtual talk group and transmitting media directly to the virtual talk group if the proxy is not employed to attach the initiating device to the virtual talk group.
[12pre] An endpoint comprising:
[12a] a transmitter and a receiver;
[12b] a user interface;
[12c] a processor coupled to the user interface, wherein the processor:
[12d] identifies information related to the endpoint; and
[12e] negotiates a communication session with an interoperability server based in part on at least one of the identified information or a predefined floor control mechanism associated with the interoperability server; and
[12f] receive a first determination from the interoperability server that the endpoint is not in adherence with capabilities of the predefined floor control mechanism and that a proxy is to be dynamically inserted to connect the endpoint to a virtual talk group, wherein the capabilities comprise quality of service, rules of transmission and trusted endpoint identity
[13] The endpoint of claim 12, wherein the processor identifies media capabilities associated with the endpoint, the media capabilities employed by the interoperability server to dynamically determine if the endpoint should be connected to the virtual talk group via the proxy.

[14] The endpoint of claim 12, wherein the processor determines an identity associated with the endpoint, the identity employed by the interoperability server to dynamically determine if the endpoint should be connected to a virtual talk group via the proxy.

[15] The endpoint of claim 12, wherein the processor causes the transmitter to transmit data to the virtual talk group if it is determined that the proxy is not employed to connect the endpoint to the virtual talk group.

[16] The endpoint of claim 12, wherein the processor causes the transmitter to transmit data to the proxy over a private channel if it is determined that the proxy is employed to connect the endpoint to the virtual talk group.

I. INTRODUCTION

Motorola Solutions, Inc. (“Petitioner”) requests *inter partes* review of claims 1–5 and 7–16 (“the Challenged Claims”) of U.S. Patent No. 9,319,852 (“the ’852 patent,” EX1001), purportedly owned by STA Group LLC (“PO”), pursuant to 35 U.S.C. §§311–19 and 37 C.F.R. §42.100.

II. STATEMENT OF PRECISE RELIEF REQUESTED

In accordance with 35 U.S.C. §311, Petitioner requests cancelation of claims 1–5 and 7–16 of the ’852 patent in view of the following grounds:

Ground	Claims	Stat. Basis	Prior Art
1	Reserved	Reserved	Reserved
2	1–5, 7–16	35 U.S.C. §103	Shaffer and Keller
3	1–2, 9–13	35 U.S.C. §103	Chowdhury, PoC Interworking Service, PoC System Description, TR23.979, and Jin
4	4, 5, 14, 16	35 U.S.C. §103	Chowdhury, PoC Interworking Service, PoC System Description, PoC Architecture, TR23.979, Jin and TS23.060

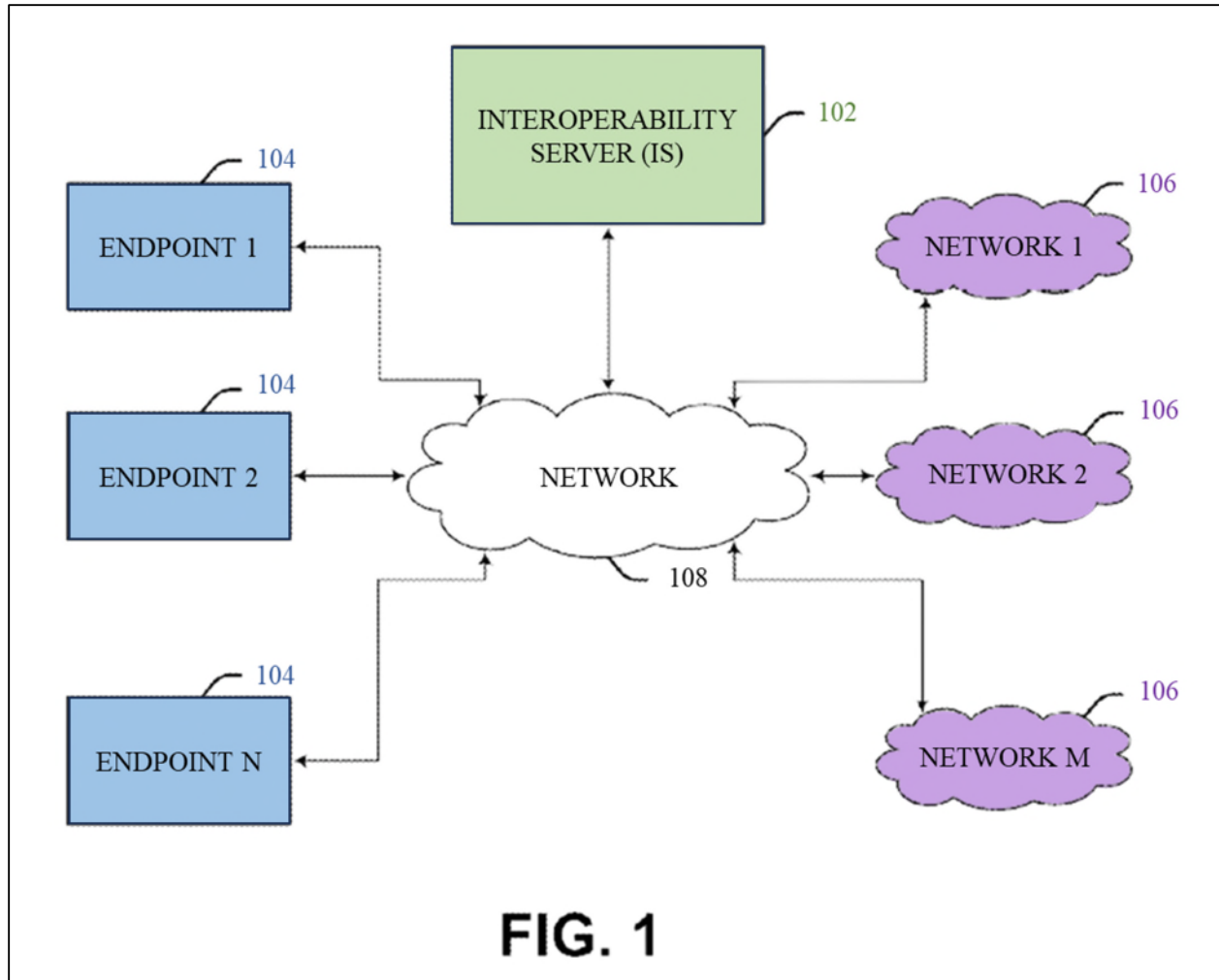
III. THE ’852 PATENT

A. Overview of the ’852 Patent

The ’852 patent was filed on October 24, 2014, as a divisional of, and incorrectly claims priority to, U.S. Patent No. 8,892,149 (“the ’149 patent”), which was filed on May 27, 2008. EX1001, Cover; *infra* §III.B (priority analysis).

The '852 patent is directed to “[a] system and methodology to facilitate communication between non-compatible communication devices by utilization of a dynamic media proxy.” EX1001, Abstract. The '852 discloses that public and private groups, such as police and firefighters, often employ communications systems (*e.g.*, land mobile radios (“LMR”) and two-way radios communicating through push-to-talk (“PTT”) technology). *Id.* 1:1–13. The endpoints on these communication systems often employed different technologies and/or standards, making it difficult for the endpoints of the different systems to communicate. *Id.* 1:13–16. Prior art interoperability systems existed that allowed endpoints (*e.g.*, two-way radios) to communicate with different types of endpoints (*e.g.*, IP phones) using “an internet protocol (IP) network collaboration platform.” EX1001, 1:19–24. These “interoperability system[s] expect[ed] certain behavioral conformance from the endpoints in the system,” which was not an issue for “[e]ndpoints developed and controlled by the interoperability system software.” *Id.* 1:27–34. “However, endpoints based on platforms external to the interoperability system cannot automatically conform to the expected characteristics.” *Id.* 1:34–36. The '852 claims to have overcome the alleged shortcomings of prior art interoperability systems by inserting a “proxy” when the endpoint lacked the necessary characteristics expected by the interoperability system. EX1001, 2:33–42.

As shown in Figure 1, below, an embodiment of the system disclosed by the '852 patent includes “an interoperability server (IS) 102, endpoints 104 and communication networks 106 that can be connected through a network 108.” EX1001, 4:53–55. “Endpoints 104 can include, but are not limited to, non-compatible communication devices that can participate in a communication session, such as, PTT radios, IP phones, personal digital assistants (PDAs), personal computers, lang mobile radios (LMR), and the like.” *Id.* 5:29–33; *see also id.* 5:59–64. “The networks 106 can include, but are not limited to, IP, non-IP, wireless or wireline networks and can be distributed locally or across multiple geographic locations.” *Id.* 5:48–50. Although not illustrated in Figure 1, the endpoints 104 can be endpoints of the networks 106. *Id.* 5:11–15.



EX1001, Fig. 1.¹

In operation, the capabilities of an originating endpoint 104 are analyzed by the Interoperability Server (IS) 102. EX1001, 2:43–46, 2:52–57, 6:14–16, 7:14–21. If the originating endpoint is unable to connect to the network 108, or if it is determined that the originating endpoint lacks certain capabilities, the interoperability server can “proxy for” the endpoint (EX1001, 6:62–63) or “can

¹ All emphasis, color, and annotations are added, unless otherwise indicated.

connect the [endpoint] to the [target endpoint] via a proxy.” *Id.* 6:66–7:3; *see also id.* Fig. 7.

B. Priority Date of the Challenged Claims

The Challenged Claims of the ’852 patent are entitled to a priority date no earlier than October 24, 2014, the date the application for the ’852 patent was filed. As shown in the chart below, the ’852 patent was filed as a divisional of the ’149 patent. However, as explained below, the patentee added new matter to the Challenged Claims during prosecution. As a result, the ’852 patent is a continuation-in-part—rather than a divisional—and the Challenged Claim are not entitled to priority to the application from which the ’149 patent issued—U.S. Patent Application No. 12/127,397 (“the ’397 Application” (EX1017)).

U.S Patent No. 8,892,149	
Application No. 12/127,397	Publication No. 2009/0298525
Filed: May 27, 2008	(“the ’525 publication”)
Issued: November 18, 2014	Published: December 3, 2009



~~Divisional~~
Continuation-in-Part

U.S Patent No. 9,319,852
Application No. 14/523,299
Filed: October 24, 2014

For context, the '397 Application originally included claims directed to both an interoperability server, such as the one shown in Figure 3 of the '852 patent (claims 1–22), and to an endpoint, such as the one shown in Figure 2 of the '852 patent (claims 23–27). EX1017 ('397 Application), 24–28. The examiner issued a restriction requirement between these two sets of claims, and the PO chose to prosecute the claims directed toward the interoperability server. EX1028 ('149 Patent Prosecution History), 298–94 (restriction requirement), 277 (election). The claims to the interoperability server were allowed and issued as the '149 patent, but only after a requirement for the interoperability server to make a determination to dynamically insert a proxy based upon certain conditions was added to all pending claims. EX1028 ('149 Patent Prosecution History), 75–81 (notice of allowance with an examiner's amendment).

When PO prosecuted the divisional application for the claims directed toward the endpoint, PO was faced with a classic prosecution dilemma in the context of two or more interoperable components: the only subject matter that the examiner was willing to allow pertained to only one component—the determination made by the interoperability server—but the claims being prosecuted in the divisional were directed toward the other component, the endpoint. PO's solution to this dilemma was to concoct a limitation requiring the endpoint to *receive* the determination made by the interoperability server. The fatal

flaw in PO's scheme is that there is no written description support for that limitation as explained in detail below.

“[F]or a patent's claims to be entitled to an earlier priority date, the patentee must demonstrate that the claims meet the requirements of 35 U.S.C. §120,” which include satisfying the written description requirement of §112. *In re NTP, Inc.*, 654 F.3d 1268, 1276–77 (Fed. Cir. 2011) (citations omitted). That means “the disclosure of the application relied upon must reasonably convey[] to those skilled in the art that the inventor had possession of the [later-claimed] subject matter as of the filing date.” *Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010) (en banc). A disclosure “that merely renders the invention obvious does not satisfy the [written description] requirement.” *Id.* at 1352.

The Challenged Claims are not entitled to priority to the '397 Application because that application lacks written description support for the following claim limitation, which appears in each independent Challenged Claim of the '852 patent: “receiv[e/ing] a first determination from the [IS/interoperability server] that the [endpoint/initiating device] is not in adherence with capabilities of the predefined floor control mechanism and that a proxy is to be dynamically inserted

to connect the [endpoint/initiating device] to a virtual talk group....” (the “First Determination Limitation”).² EX1002, ¶¶63–65.

The First Determination Limitation was added by the patentee during the prosecution of the ’852 patent. Specifically, on November 30, 2015—more than one year after the ’149 patent issued and almost six years after ’397 Application was published as U.S. Patent Application Publication No. 2009/0298525 (EX1015 (“the ’525 publication” or “Shaffer”))—the patentee added the First Determination Limitation as dependent claim 40, which depended from then-pending claim 20, which eventually issued as claim 1:

20. (Currently Amended) An apparatus comprising:

an information determination component that identifies
information related to an endpoint to obtain identified information;
and

a negotiation component that negotiates a communication
session with an interoperability server (IS) to dynamically determine
if the endpoint should be connected to a virtual talk group via a proxy
or directly connected to the virtual talk group based in part on at least
one of the identified information or a predefined floor control
mechanism associated with the IS.

² Petitioner also contends that the ’852 patent lacks written description support for the First Determination Limitation.

...

40. (New) The apparatus of claim 20, wherein the negotiation component is configured to:

receive a first determination from the IS that the endpoint is not in adherence with capabilities of the predefined floor control mechanism and that the proxy is to be dynamically inserted to connect the endpoint to the virtual talk group, wherein the capabilities comprise quality of service, rules of transmission and trusted endpoint identity;

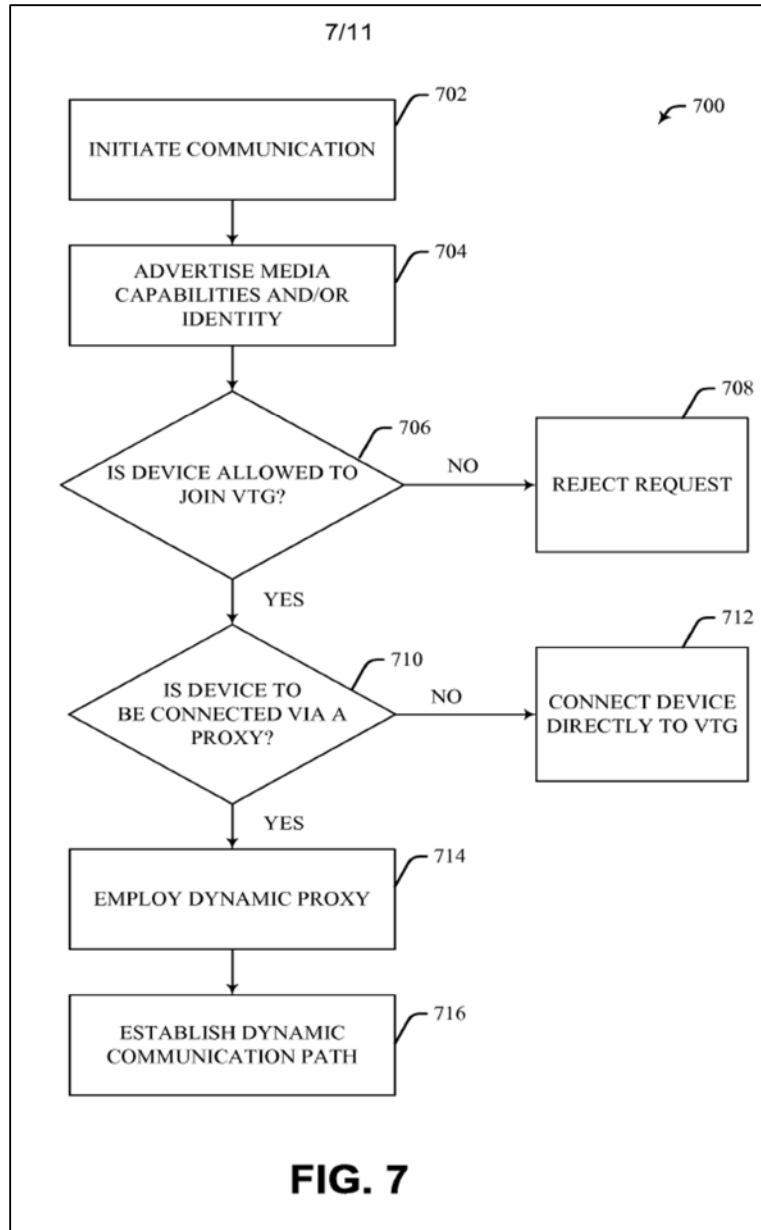
receive a second determination from the IS to connect the endpoint directly to the virtual talk group without the proxy when the endpoint is conforming with the capabilities, and

connect the endpoint to the virtual talk group in response to receiving one of the first determination or the second determination.

EX1003, at 42, 46 (underlining in original) (color added).

The patentee incorrectly claimed that no new matter was added by dependent claim 40, alleging that support for claim 40 “may be found in FIG. 7 and the accompanying description from the specification, as well as paragraph [0034] of the specification.” EX1003, 49; EX1002, ¶¶67–68. These sections of the specification for the application for the ’852 patent (U.S. Patent Application No. 14/523,299 (EX1004)) correspond to portions of the ’397 Application (EX1017) at 13–14 (paragraph [0034]), 21–22 (accompanying description of Figure 7 in paragraphs [0055] to [0057]), and 40 (Figure 7). *See also* EX1004 (’299

Application), 10–11 (paragraph [0034]), 18–19 (accompanying description of Figure 7 in paragraphs [0055] to [0057]), 37 (Figure 7). However, none of this material, nor anything else in the '397 Application, provides the necessary written description support for the First Determination Limitation. EX1002, ¶¶67–68. Figure 7, reproduced below, and its accompanying description, merely discloses a flow diagram for determining whether a proxy should be inserted. EX1017, at 21–22, 40. And paragraph 34 merely discloses that the IS can determine whether a proxy is necessary based on the information received from an initiating endpoint. EX1017, at 13–14. There is no disclosure in paragraph 34, Figure 7 and its accompanying description, or anywhere else in the '397 Application that any device receives the first determination specified in the First Determination Limitation. *See generally* EX1017.



For the sake of completeness, there is also no inherent disclosure of the First Determination Limitation in the '397 Application because no device necessarily receives the determination required in the First Determination Limitation. For example, it is possible that neither the initiating nor the target endpoints are aware of the insertion of a proxy. EX1002, ¶69. In fact, proxies are often inserted in

ways that are completely transparent to the endpoints. EX1002, ¶69 (citing EX1025, ¶¶9, 34, 190–93 (disclosing a transparent transcoder for use in a push-to-talk over cellular network), Fig. 13).

Challenged Claims 1 and 12 further require that a device with a processor configured to not only receive the determination specified in the First Determination Limitation, but also configured to identify information related to an endpoint and negotiate a communication session with the IS. *Salazar v. AT&T Mobility LLC*, 64 F.4th 1311, 1317 (Fed. Cir. 2023) (claim correctly construed to “require that at least one microprocessor be capable of performing each of the claimed functions.”); EX1002, ¶70. Claim 12 further requires that the device with a processor that performs each of these functions be an endpoint. EX1002, ¶70.

There is nothing in the ’397 Application that even remotely discloses these additional requirements of Challenged Claims 1 and 12. EX1002, ¶70.

Furthermore, although the scope of claim 1 is not limited to the claimed apparatus being an endpoint as in claim 12, the scope of claim 1 encompasses an apparatus that is an endpoint as in claim 12. Additionally, although the scope of method claim does not require that the device or devices that perform each of the recited steps be an endpoint as in claim 12, the scope of claim 8 encompasses the performance of the recited steps by an apparatus that is an endpoint as in claim 12. Because there is no written description of an apparatus that is an endpoint that

performs the First Determination Limitation as in claim 12, and because the scope of both claims 1 and 8 encompasses such subject matter, the '397 Application also fails to provide written description support for the full scope of claims 1 and 8. Claims 1 and 8 are therefore not entitled to priority to the '397 Application for this additional reason. EX1002, ¶71.

Moreover, the '852 patent was issued only after the patentee authorized the examiner to add the First Determination Limitation: the examiner, through an examiner amendment, incorporated the First Determination Limitation into each independent claim of the '852 patent. EX1003, 23–28. According to the examiner, adding the First Determination Limitation to the independent claims is what made the '852 patent allowable:

Allowable Subject Matter

Claims 20-24, 26-36, and 38-41 are allowed.

The following is an examiner's statement of reasons for allowance: The prior art does NOT teach:

An apparatus comprising a processor, wherein the processor is configured to:
~~an information determination component that identifies~~ identify information related to an endpoint to obtain identified information; and
~~a negotiation component that negotiates~~ negotiate a communication session with an interoperability server (IS) ~~to dynamically determine if the endpoint should be connected to a virtual talk group via a proxy or directly connected to the virtual talk group~~ based in part on at least one of the identified information or a predefined floor control mechanism associated with the IS; and
receive a first determination from the IS that the endpoint is not in adherence with capabilities of the predefined floor control mechanism and that a proxy is to be dynamically inserted to connect the endpoint to a virtual talk group, wherein the capabilities comprise quality of service, rules of transmission and trusted endpoint identity.

EX1003, 19 (underlining and strikethrough in original).

For all of the reasons discussed above, the Challenged Claims do not have any written description support for the First Determination Limitation. As a result, no Challenged Claim is entitled to priority to the '397 Application.

C. Person of Ordinary Skill in the Art

A person of ordinary skill in the art ("POSITA") at the time of the alleged invention of the '852 patent would have had at least a bachelors' degree in

electrical engineering, computer science, or a similar field, plus approximately three years of industry in networking or communication systems, in particular address interoperability between different types of networks and satellite communications. EX1002, ¶72. Additional education in the fields of electrical engineering or computer science, such as a masters or doctorate degree, could substitute for professional experience in the field. *Id.* A person with less or different education but more relevant practical experience, or vice versa, may also meet this standard. *Id.* This analysis applies irrespective of the priority date issue discussed in section III.B, above. *Id.* ¶73

D. Claim Construction Under 37 C.F.R. §42.104(b)(3)

The Challenged Claims are interpreted using the same claim construction standard that is used to construe the claim in a civil action in federal district court. 37 C.F.R. §42.100(b).

Petitioner does not contend that its proposed constructions are complete constructions of these limitations or the claims for any other purpose, including for issues that have been raised in the related litigation. Because the prior art asserted herein discloses the preferred embodiment within the indisputable scope of the claims, the Board need not construe the outer bounds of the claims as part of these proceedings. The district court may have to address other bounds of the claims in addressing infringement. *See, e.g., Nidec Motor Corp. v. Zhongshan Broad Ocean*

Motor Co., 868 F.3d 1013, 1017 (Fed. Cir. 2017) (citing *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)) (providing that only those terms that are in controversy need be construed, and only to the extent necessary to resolve the controversy).

Any claim terms not listed below should be construed according to their plain and ordinary meaning to a POSITA at the time of the ’852 patent.

1. **“receiv[e/ing] a first determination from the [IS]/[interoperability server] that the [endpoint]/[initiating device] is not in adherence with capabilities of the predefined floor control mechanism and that a proxy is to be dynamically inserted to connect the [endpoint]/[initiating device] to a virtual talk group, wherein the capabilities comprise quality of service, rules of transmission and trusted endpoint identity.”** (claims 1, 8, 12)

The plain meaning of this claim limitation requires receiving a determination from the IS: (a) “that the endpoint is not in adherence...;” and (b) “that a proxy is to be dynamically inserted...” It is possible—but not required—that the proxy be dynamically inserted because the endpoint is not in adherence with the capabilities of the predefined floor control mechanism.

The proposed construction is mandated by the plain language of the claims. The claim limitation is composed of two separate dependent clauses—“that the endpoint is not in adherence...” and “that a proxy is to be dynamically inserted...”—in parallel structure, with no recited dependence between the two. *See also* EX1002, ¶80.

Indeed, during prosecution, claim 20 (issued claim 1) was originally amended by the patentee to expressly require that the determination whether to insert a proxy be “based in part on at least one of the identified information.” EX1003, at 32. Later, however, the patentee authorized the examiner to remove this express requirement in an examiner’s amendment, after which the ’852 patent issued:

20. (Currently Amended) An apparatus comprising a processor,
wherein the processor is configured to:
~~an information determination component that identifies~~ identify
information related to an endpoint to obtain identified information;
and
~~a negotiation component that negotiates~~ negotiate a communication
session with an interoperability server (IS) ~~to dynamically determine~~
~~if the endpoint should be connected to a virtual talk group via a proxy~~
~~or directly connected to the virtual talk group~~ based in part on at least
one of the identified information or a predefined floor control
mechanism associated with the IS; and
receive a first determination from the IS that the endpoint is not in
adherence with capabilities of the predefined floor control mechanism
and that a proxy is to be dynamically inserted to connect the endpoint
to a virtual talk group, wherein the capabilities comprise quality of
service, rules of transmission and trusted endpoint identity.

EX1003, at 13–14 (underlining and strikethrough in original) (color added).

Simply put, the proxy can be dynamically inserted for reasons besides correcting for an endpoint not in adherence with the capabilities of the predefined floor control mechanism. EX1002, ¶81–82.

IV. OVERVIEW OF THE PRIOR ART REFERENCES

The challenges in this Petition are based on the knowledge of a POSITA and the prior art described below.

A. Choksi (EX1005)

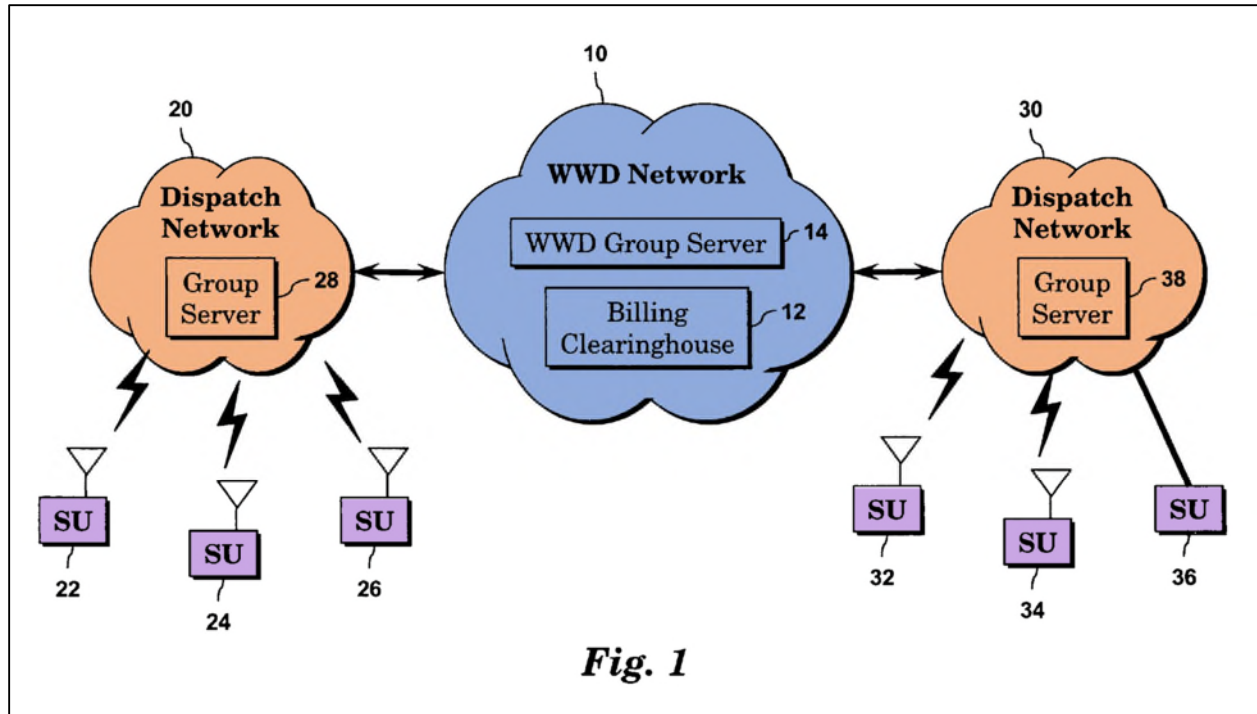
Choksi was filed on September 9, 2005, and published on March 16, 2006,³ making Choksi prior art to the '852 patent under AIA 35 U.S.C. §102(a), and, if applicable, pre-AIA §§102(a), (b), and (e).

Choksi discloses a system “for an interworking network architecture that is optimized for PTT communications among subscribers on different carrier networks, irrespective of subscriber and carrier location and underlying PTT

³ Choksi claims priority to and incorporated by reference U.S. Patent Application Nos. 11/047,897 (EX1006) (issued as U.S. Patent No. 7,359,726 (EX1007)), and 11/047,892 (EX1008) (issued as U.S. Patent No. 7,359,731 (EX1009)), as well as U.S. Provisional Patent Application Nos. 60/608,110 (EX1010), 60/608,113 (EX1011), 60/608,117 (EX1012), 60/608,126 (EX1013), and 60/608,131 (EX1014).

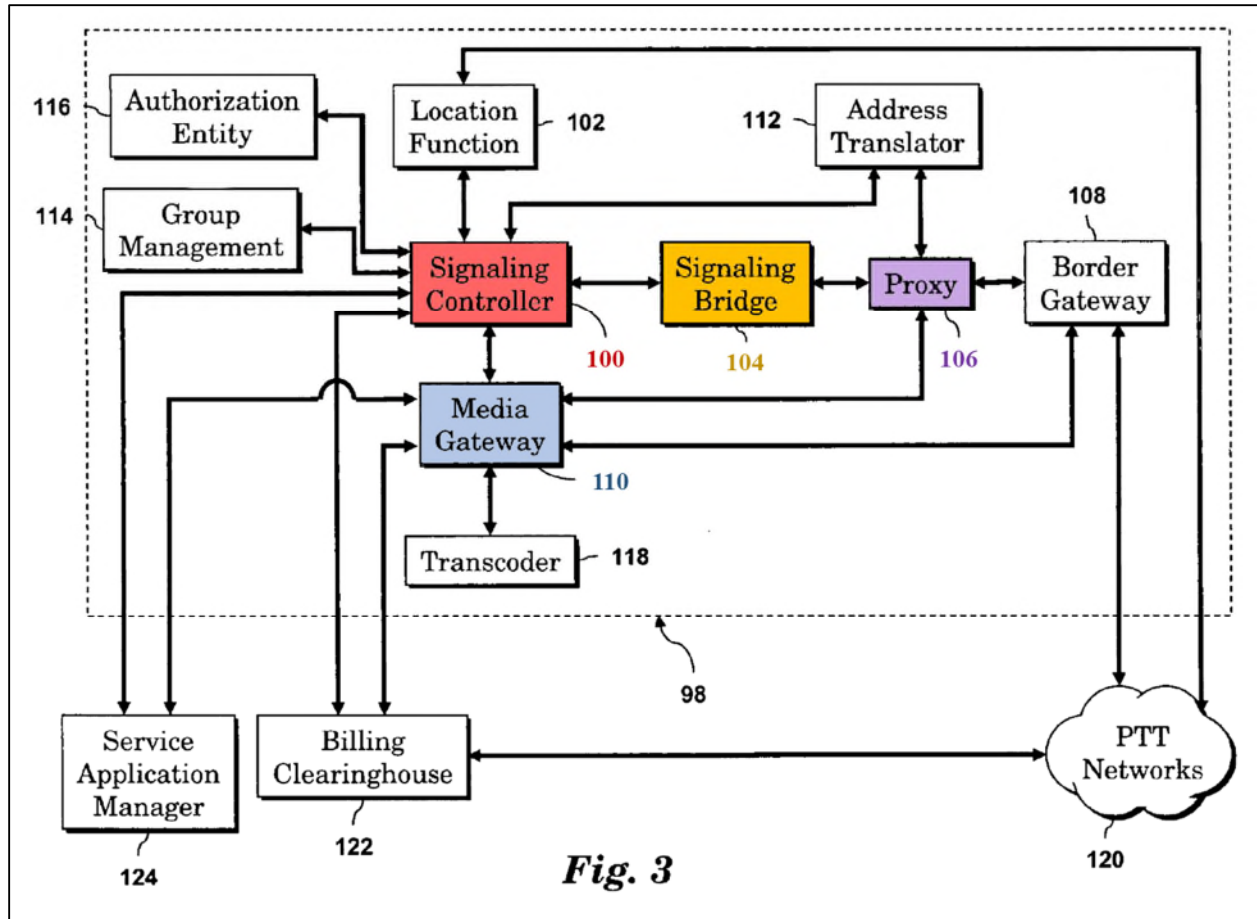
technology.” EX1005, ¶5. Choksi refers to the interworking network architecture as a “worldwide dispatch (WWD) architecture,” a “PTT inter-working architecture,” and variations thereof. For simplicity, the interworking architecture will be referred to as the “WWD architecture” throughout this Petition.

Choksi Figure 1, below, shows a high-level block diagram of the WWD architecture. EX1005, ¶9. The WWD architecture “assists in translating and managing dispatch sessions between a plurality of dispatch networks, such as **dispatch network 20** and **dispatch network 30**,” while each dispatch network “facilitates dispatch calls between a plurality of **subscriber units (SU)**.” EX1005 ¶¶30–31. “[T]he **dispatch networks 20 and 30** may be any communications systems...that facilitate dispatch communications between at least two devices,” such as “**subscriber units (SU)**” 22, 24, and 26 for **Dispatch Network 20**, and “**subscriber units (SU)**” 32, 34, and 36 for **Dispatch Network 30**. *Id.* ¶31.



EX1005, Fig. 1. Choksi’s “subscriber unit[s]” correspond to what the ’852 patent calls an “endpoint.” Compare EX1005, ¶32 (subscriber units include “mobile telephones, personal digital assistants, and portable computers.”) with EX1001, 5:29–33 (endpoints include “PTT radios, IP phones, personal digital assistants (PDAs), personal computers, land mobile radios (LMR), and the like.”).

Choksi Figure 3, below, shows a functional block diagram of the WWD architecture (everything within the dashed outline 98), including the different functional components therein:



EX1005, Fig. 3; see also *id.* ¶43 (describing the **signaling controller 100**); *id.* ¶45 (describing the **signaling bridge 104**); *id.* ¶46 (describing the **proxy 106**); *id.* ¶¶51–52 (describing the **media gateway 110**).

Choksi Figures 4 to 13 are exemplary “physical architectures” and call flow diagrams containing some or all of the components described in the functional block diagram of Figure 3. EX1005, ¶42; see also *id.* ¶¶11–21; EX1002, ¶¶86–88.

B. Shaffer (EX1016)

Shaffer was published on December 3, 2009, and is the publication of the ’397 Application, which issued as the ’149 patent. EX1015, Cover; EX1016,

Cover. As explained in Section III.B *supra*, the Challenged Claims are not entitled to priority to the '397 Application. For that reason and because the application for the '852 patent was filed on October 24, 2014, the Challenged Claims are subject to the AIA. MPEP §2159.02 (“AIA 35 U.S.C. 102 and 103 apply to any patent application that contains or contained at any time a claim to a claimed invention that has an effective filing date that is on or after March 16, 2013.”). Shaffer is prior art under AIA 35 U.S.C. §102(a)(1) because it was published more than one year prior to the October 24, 2014, effective filing date of the Challenged Claims.⁴

Moreover, even though the '852 patent was characterized as a divisional of the '149 patent, the '852 patent is not actually a divisional—it is a continuation-in-part—and, thus, the “safe harbor” provision of §121 does not prevent Shafer from being prior art to the '852 patent. The Federal Circuit has explained that an application cannot be a divisional, even if the patentee designates it as such, if “it contains new matter that was not present in the [parent] application.” *G.D. Searle LLC v. Lupin Pharms, Inc.*, 790 F.3d 1349, 1355 (Fed. Cir. 2015) (citing MPEP §201.06 (9th Ed. 2004) (“A later application for an independent or distinct

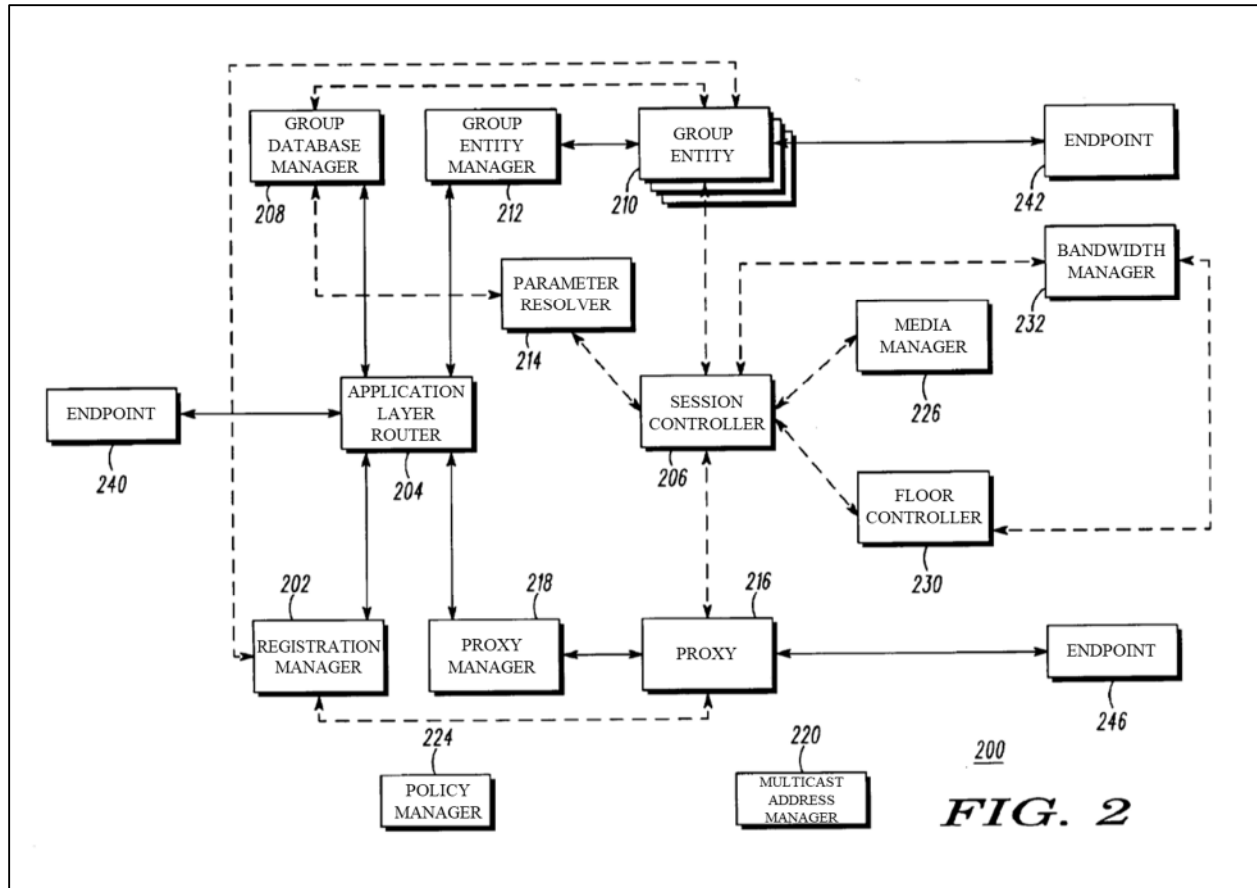
⁴ Shaffer would also qualify as prior art under pre-AIA §102(b), and the remainder of this analysis would be the same under the pre-AIA version of Title 35 of the United States Code.

invention, carved out of a pending application and disclosing and ***claiming only subject matter disclosed in the earlier or parent application***, is known as a divisional application or ‘division.’”) (emphasis added)). As explained in Section III.B *supra*, the ’852 patent claims subject matter not disclosed in the ’397 Application, meaning the ’852 patent is a continuation in part, not a divisional. Thus, the “safe harbor” of §121 does not prevent Shaffer from being prior art to the ’852 patent. *Pfizer, Inc. v. Teva Pharms USA Inc.*, 518 F.3d 1353, 1359–60 (Fed. Cir. 2008) (continuation-in-part not afforded protection of 35 U.S.C. §121).

C. Keller (EX1024)

Keller was filed on March 11, 2008, and published on July 10, 2008, rendering Keller prior art under AIA §102(a)(1) and, if applicable, pre-AIA §102(e).

Keller discloses a “call control architecture that takes advantage of the application layer routing control of SIP” for use with PTT calls. EX1024, ¶¶11, 14. “The architecture 200 is ideal for time critical communications systems such as public safety dispatch systems.” EX1024, ¶25. Figure 2, below, shows an exemplary call control architecture 200 that allows for endpoints to communicate using SIP.



EX1024, Fig. 2 (names added from ¶¶26, 34). “Entities connected with solid black lines [in Figure 2] communicate using a transactional protocol or broadcast protocol,” with “[t]he preferred transactional protocol [being] SIP.” *Id.* ¶25.

In operation, the proxy 216 inserts itself into the message path between endpoints through “the appropriate use of SIP’s RECORD-ROUTE header. This [e]nsures that any future SIP requests from either endpoint will be routed through the individual proxy 216 by use of the complementary SIP ROUTE header.” *Id.* ¶46.

D. Chowdhury (EX1035)

Chowdhury was filed July 31, 2007, and issued August 10, 2010, rendering Chowdhury prior art under AIA §102(a)(2), and, if applicable, pre-AIA 102(e).

Chowdhury discloses an apparatus and method for connecting a traditional push-to-talk (PTT) (*e.g.*, two-way radio) system with an OMA PoC system.

EX1035, Fig. 1, 3:11–26. For example, Figure 1, below, shows **OMA-PoC Based Network 20** connected to **P25 Network 30** via **Gateway 10**:

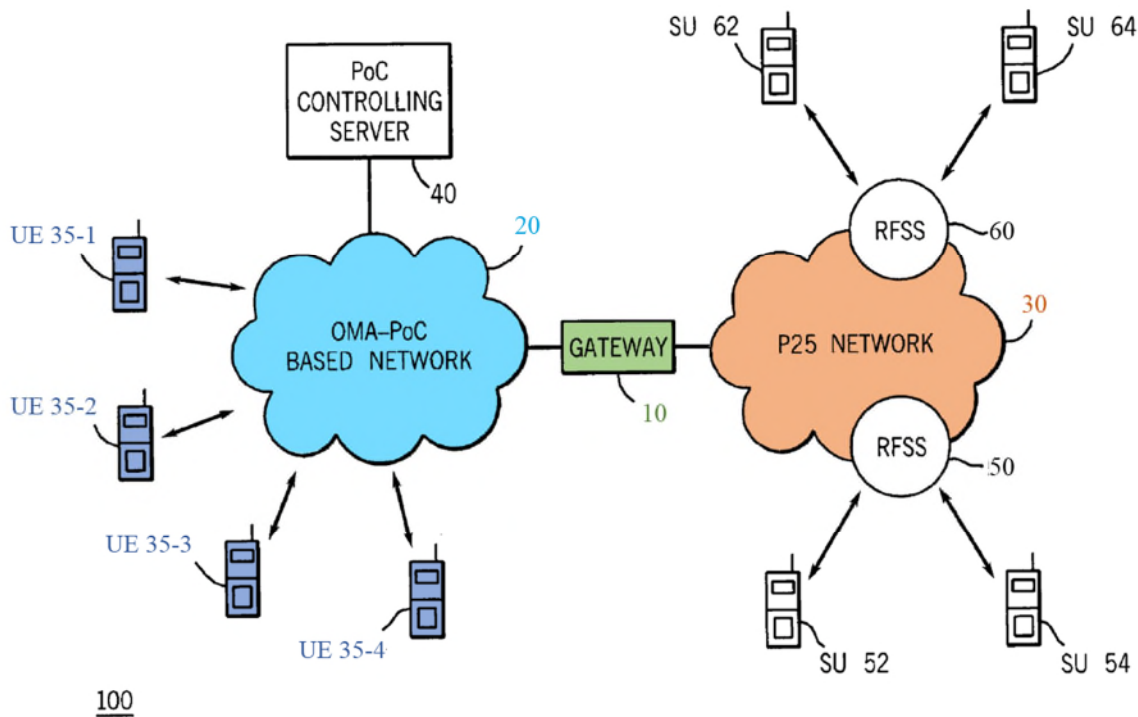
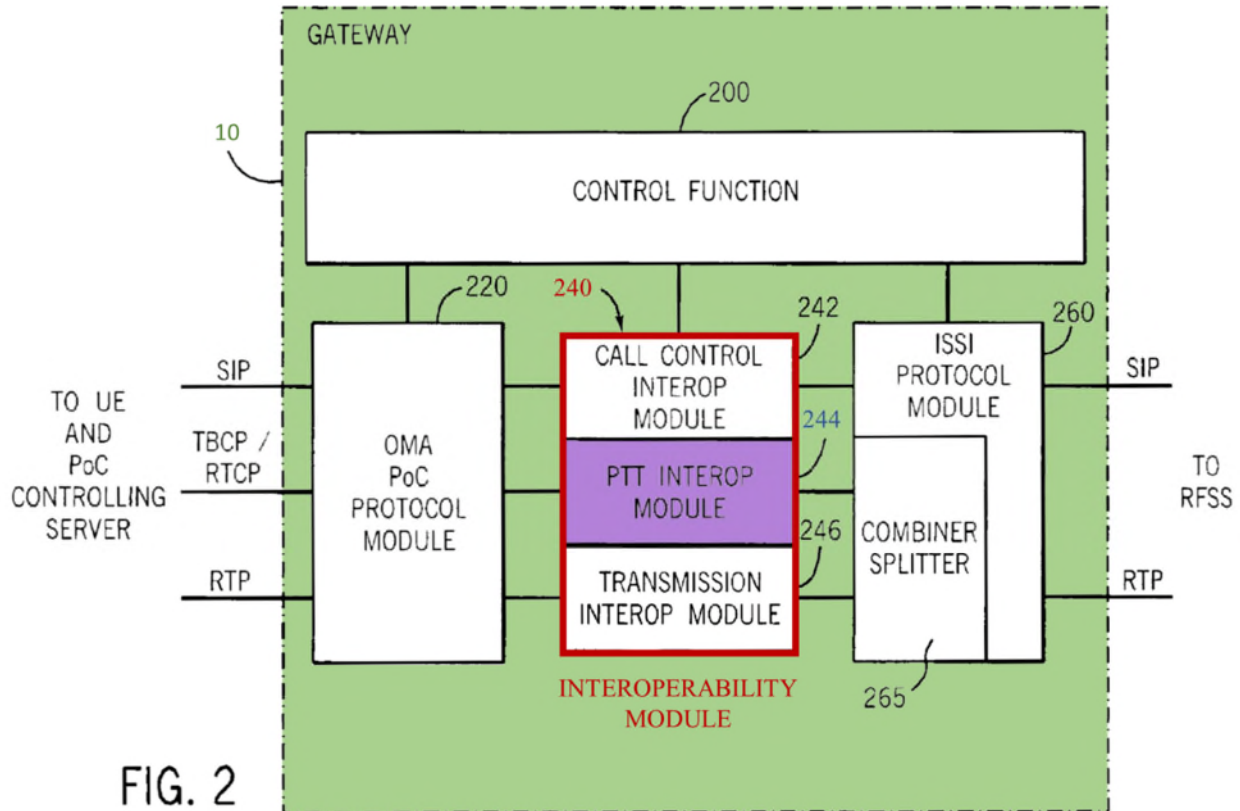


FIG. 1

Chowdhury further discloses the interworking of gateway 10, as shown below in Figure 2, as well as the different means by which communications and

signals are transmitted from OMA-PoC Based Network 20 to P25 Network 30 in

Figures 3 to 8 and their accompanying description in the specification.



E. PoC Interworking Service (EX1032)

PoC Interworking Service provides examples of how to interwork between traditional PTT/P2T (*e.g.*, two-way radios) and PoC. EX1032, 7. In particular, “PoC Interworking Service supports three different topologies based on the following basic usage scenarios: [1] P2T Users participate in the PoC Session and PoC Session control is in the PoC Network; [2] PoC Users participate in the PoC Session and PoC Session control is in the P2T Network; and [3] PoC Remote Access User(s) participates in the PoC Session. *Id.* PoC Interworking Service then

further defines the different components used within the interworking service, either directly or through reference to another OMA PoC document.

As explained by Madhusudan Pai, PoC Interworking Service was publicly available before the May 27, 2008, alleged priority date for the '852 patent. EX1032, Cover (listing October 2, 2007); EX1061, ¶¶2–9 (citing EX1042, EX1043, EX1044, EX1045, EX1046). Thus, PoC Interworking Service is prior art under at least pre-AIA §§102(a) and (b).

If the '852 patent is not entitled to the priority date of the '299 Application, the 2008 version of the PoC Interworking Service (EX1040) would also be prior art to the '852 patent under AIA §102(a)(1). The 2008 version of the PoC Interworking Service was publicly available no later than September 5, 2008, as confirmed by the Internet Archive's Wayback Machine (EX1041, 1), of which the Board may take judicial notice. *Valve Corp. v. Ironburg Inventions Ltd.*, 8 F.4th 1364, 1374–75 (Fed. Cir. 2021). The cited pages in PoC Interworking Service are the same regardless whether the 2007 or 2008 version is used (*e.g.*, EX1032 (2007 version), page 40 is the same as EX1040 (2008 version), page 40).

F. PoC System Description (EX1031)

“The scope of the Push to talk over Cellular (PoC) V2.0 System Description document is to define the system concepts and high level procedures for the PoC service enabler V2.0.” EX1031, 10.

As explained by Madhusudan Pai, PoC System Description was publicly available before the May 27, 2008, alleged priority date for the '852 patent.

EX1031, Cover (listing October 2, 2007); EX1061, ¶¶2–9 (citing EX1042, EX1043, EX1044, EX1045, EX1046). Thus, PoC System Description is prior art under at least pre-AIA §§102(a) and (b).

Should the board agree that the '852 patent is not entitled to the priority date of the '299 Application, the 2008 version of PoC System Description (EX1039) would also be AIA §102(a)(1) prior art to the '852 patent. The 2008 version of the PoC System Description was publicly available no later than September 5, 2008, as confirmed by the Internet Archive's Wayback Machine (EX1041, 1), of which the Board may take judicial notice. *Valve Corp.*, 8 F.4th at 1374–75. The cited pages in PoC System Description are the same regardless whether the 2007 or 2008 version is used (*e.g.*, EX1031 (2007 version), page 40 is the same as EX1039 (2008 version), page 40).

G. PoC Architecture (EX1029)

The PoC Architecture document provides the architecture for the PoC, based on the “requirements listed for the system in the PoC requirements document.”

EX1029, 5. The PoC Architecture document further defines the different functional entities used in the PoC architecture and further defines the protocols used to communicate between the different functional entities. EX1029, 19–22.

The goal was to allow for “interoperability among the network entities to avoid market fragmentation, by realizing the PoC service in a widely acceptable and standardized manner.” *Id.*, 14.

As explained by Madhusudan Pai, PoC Architecture was publicly available before the May 27, 2008, alleged priority date for the ’852 patent. EX1029, Cover (listing October 2, 2007); EX1061, ¶¶2–9 (citing EX1042, EX1043, EX1044, EX1045, EX1046). Thus, PoC Architecture is prior art under pre-AIA §§102(a), (b).

Should the board agree that the ’852 patent is not entitled to the priority date of the ’299 Application, the 2008 version of the PoC Architecture (EX1037) would also be prior art to the ’852 patent under AIA §102(a)(1). The 2008 version of the PoC Architecture was publicly available no later than September 5, 2008, as confirmed by the Internet Archive’s Wayback Machine (EX1041, 1), of which the Board may take judicial notice. *Valve Corp.*, 8 F.4th at 1374–75. The cited pages in PoC Architecture are the same regardless whether the 2007 or 2008 version is used (*e.g.*, EX1029 (2007 version), page 40 is the same as EX1037 (2008 version), page 40).

H. TR23.979 (EX1033)

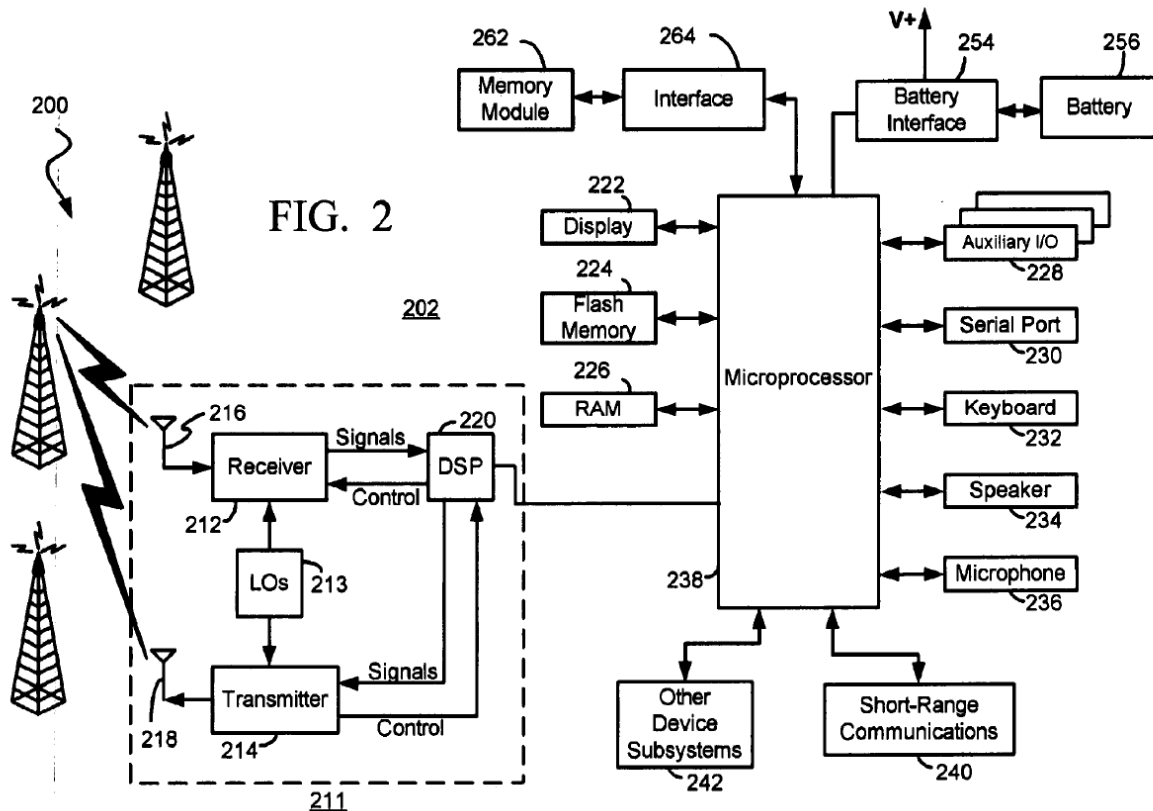
The 3rd Generation Partnership Project (“3GPP”) developed specifications (*i.e.*, standards) that cover cellular communications technologies, including radio

access, core network, and service capabilities. The 3GPP often works in collaboration with others and/or develops/modifies their standards as technology progresses. In particular, by 2003, 3GPP recognized that “[a]dvanced interactive conferencing applications like Push to talk over Cellular (PoC) service enablers [were] being developed” by the Open Mobile Alliance (“OMA”). EX1033, 5. 3GPP also recognized “that some enhancements of the 3GPP specifications will be needed in order to use IMS & its capabilities as a base for the PoC services.” EX1033, 5. The result was 3GPP specification no. 23.979 (*i.e.*, TR23.979). *Id*

As explained by Madhusudan Pai, TR23.979 was publicly available before the May 27, 2008, alleged priority date for the ’852 patent. EX1033, Cover (listing June 2007); EX1061, ¶¶2–9 (citing EX1042, EX1043, EX1044, EX1045, EX1046). Moreover, the Internet Archive’s Wayback Machine shows the public accessibility of TR23.979 on August 3, 2007 (EX1049), of which the Board may take judicial notice. *Valve Corp.*, 8 F.4th 1364, 1374–75. Thus, TR23.979 is prior art under AIA §102(a)(1) and, if applicable, pre-AIA §102(a).

I. Jin (EX1036)

Jin discloses a mobile station 202, as shown in Figure 2, below, that is designed to communicate using push-to-talk over cellular:



EX1036, ¶¶[0031]–[0038] and Fig. 2.

J. TS23.060 (EX1034)

3GPP TS23.060-800 provides the technical specifications for the general packet radio service (GPRS), including those related to maintaining security for packetized radio transmissions. EX1034, 57 (Section 6.8).

As explained by Madhusudan Pai, TS23.060 was publicly available before the May 27, 2008, alleged priority date for the '852 patent. EX1034, Cover (listing March 2008); EX1061, ¶¶2–9 (citing EX1047, EX1048, EX1049, EX1050, EX1051, EX1052, EX1053, EX1054, EX1055, EX1056). Moreover, the Internet Archive's Wayback Machine shows the public accessibility of TS23.060 on April

21, 2008 (EX1053), of which the Board may take judicial notice. *Valve Corp.*, 8 F.4th at 1374–75 (Fed. Cir. 2021). Thus, TR23.979 is prior art under AIA §102(a)(1) and, if applicable, pre-AIA §102(a).

V. LEGAL STANDARD FOR OBVIOUSNESS

A claim is unpatentable under 35 U.S.C. §103 if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious to a person having ordinary skill in the art to which said subject matter pertains. *See KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations, including (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) where in evidence, so-called secondary considerations, including commercial success, long-felt but unsolved needs, failure of others, and unexpected results. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

With respect to factor (3), the level of skill in the art at the time of the alleged invention of the ’852 patent is discussed above. With respect to factor (4), PO has not provided any evidence of secondary considerations that would weigh in favor of non-obviousness, let alone any evidence that establishes a nexus between any secondary consideration and the challenged claims. In any event, the showing of invalidity in this Petition is strong and any alleged secondary considerations are

insufficient to establish non-obviousness in light of this strong prima facie showing. *Intercontinental Great Brands (Kraft) v. Kellogg N. Am. Co.*, 869 F.3d 1336, 1347 (Fed. Cir. 2017). Factors (1) and (2) are addressed below.

VI. GROUND 1: RESERVED

This ground is the subject of IPR2024-00479.

VII. GROUND 2: SHAFFER IN VIEW OF KELLER AND THE KNOWLEDGE OF A POSITA RENDERS OBVIOUS ALL CHALLENGED CLAIMS

A. Introduction

Shaffer’s specification is identical to the disclosure of the ’852 patent, exclusive of the claims. Not surprisingly, Shaffer discloses most limitations of the Challenged Claims other than the First Determination Limitation—which is disclosed by Keller. Thus, the combination of Shaffer and Keller renders all Challenged Claims obvious as discussed in detail below.

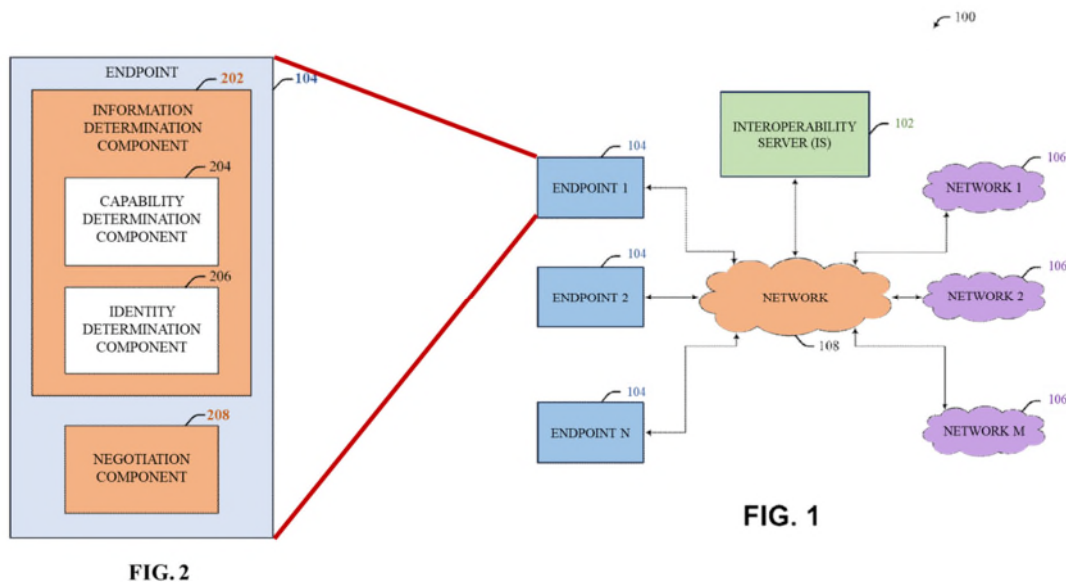
B. Motivation to Combine Shaffer and Keller

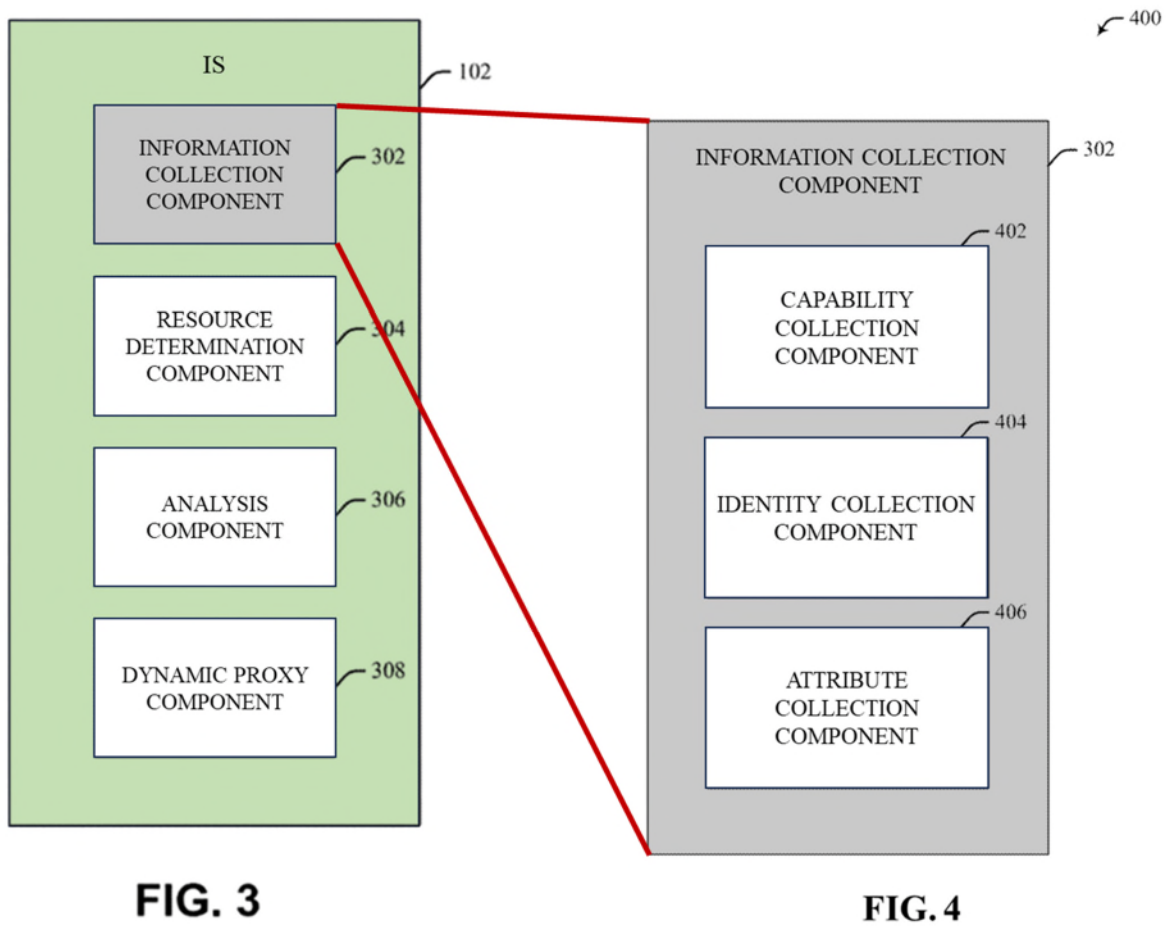
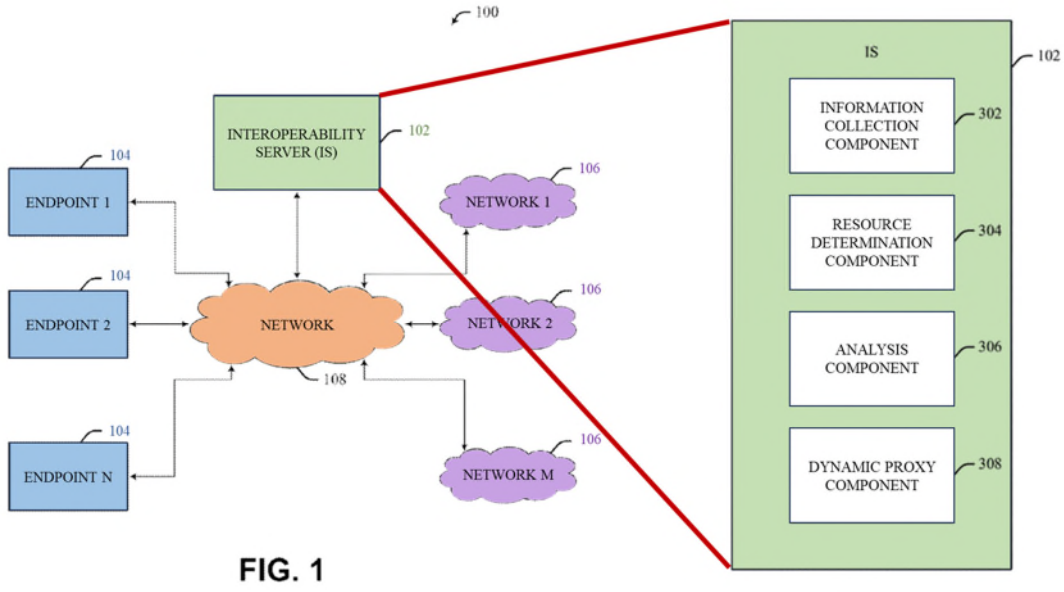
Shaffer’s goal was to provide a way for non-compatible endpoints to work with the “standards-based IP technologies” used by interoperability systems. EX1016, ¶2. However, Shaffer does not disclose a specific standards-based signaling technology. By 2008, SIP was a well-known and established “standards-based IP technolog[y]” used for signaling in PTT, and other voice and/or multimedia, communications systems. EX1002, ¶155. Thus, a POSITA would have looked for an example of such a system, like that disclosed by Keller—which

discloses an example of a standards-based signaling technology, SIP, in a PTT system. As such, a POSITA would have found it obvious to combine Keller's SIP-based PTT system with Shaffer's more general "standards-based IP" interoperability system. Doing so would have been seen by a POSITA as nothing more than a combination of known elements according to their established functions to achieve an expected result, and would be considered to constitute nothing more than a routine engineering task that was well within the skill level of a POSITA. EX1002, ¶155.

C. Motivation to Combine Embodiments of Shaffer

Figures 1 to 6 of Shaffer, and their corresponding disclosure in the specification, disclose interrelated embodiments, as shown below, with the components in each of the so-called embodiments just providing additional detail for the components presented in other figures:





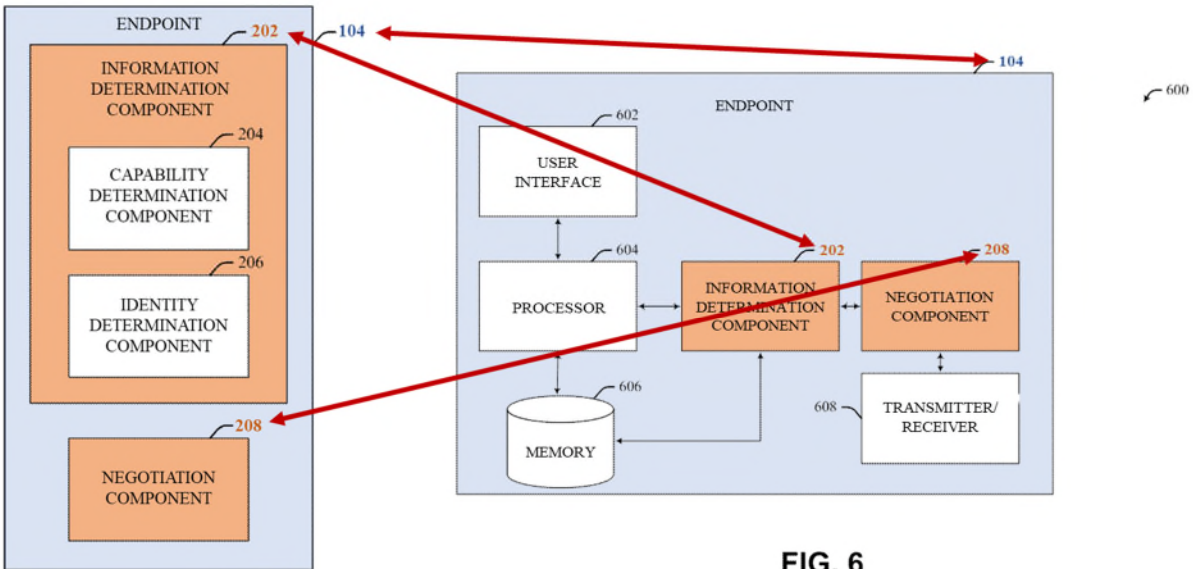


FIG. 2

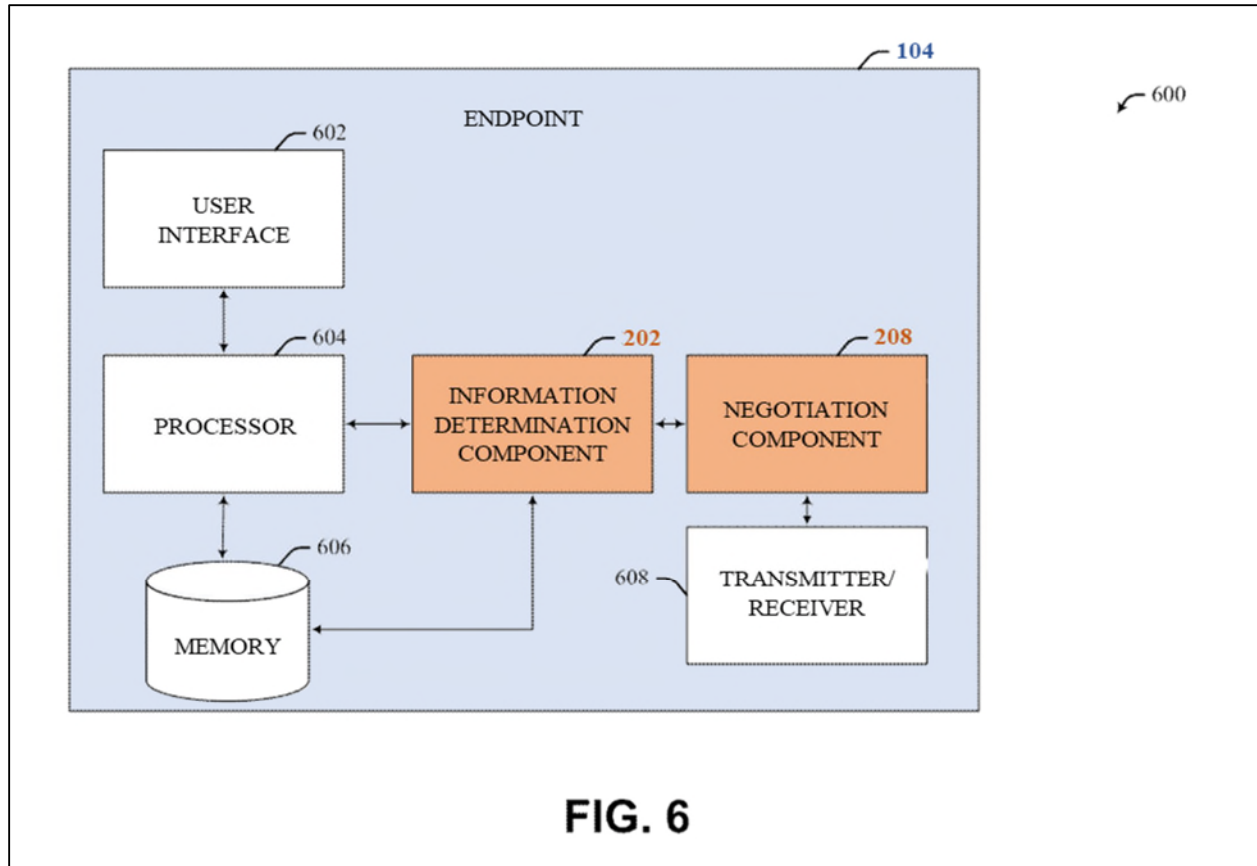
FIG. 6

As such, it would have been obvious to a POSITA to combine each of Figures 1 to 6, and their corresponding disclosure in the specification, since each so-called embodiment is merely providing additional detail of how certain components work. EX1002, ¶157; *see also Boston Scientific Scimed, Inc. v. Cordis Corp.*, 554 F.3d 982, 991 (Fed. Cir. 2009) (“Combining two embodiments disclosed adjacent to each other in a prior art patent does not require a leap of inventiveness.”).

D. Claim 1

1. [1pre] An apparatus comprising a processor, wherein the processor is configured to:

To the extent the preamble is limiting, Shaffer discloses or renders obvious an apparatus (e.g., endpoint 104) comprising a processor (e.g., information determination component 202 and negotiation component 208), as shown in Figure 6, below:

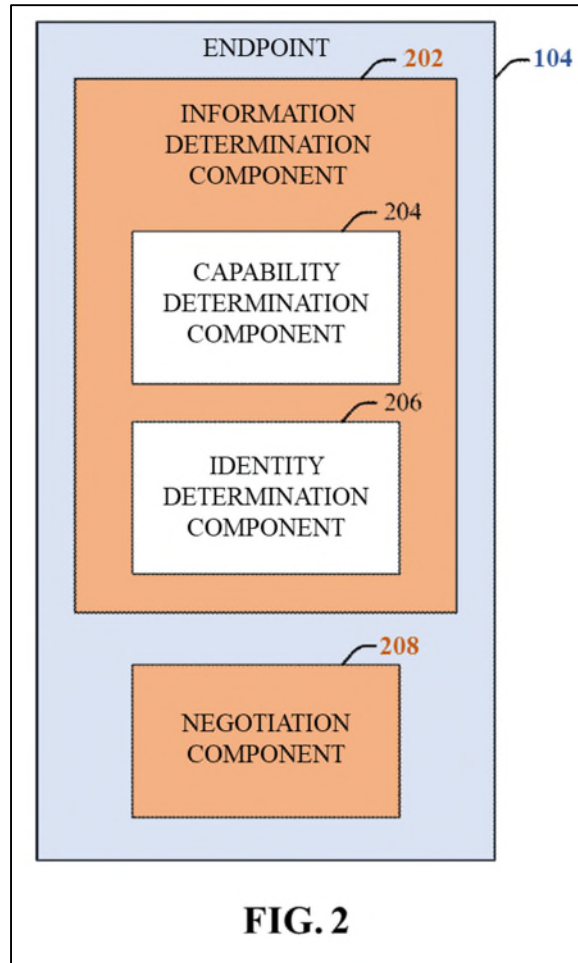


EX1016, Fig. 6. Shaffer defines “component” (such as the **information determination component 202** and **negotiation component 208**) to include processors, processes, and programs (EX1016, ¶22); thus, a POSITA would have understood and/or found it obvious for both information determination component and negotiation component to be implemented on the same processor (EX1002, ¶159). For example, a POSITA would have found it obvious to implement the **information determination component 202** and **negotiation component 208** as software components, or modules, that execute on the processor 604, or on a separate processor in the endpoint.

2. [1a] identify information related to an endpoint to obtain identified information; and

Shaffer discloses that the **information determination component 202** of the processor is configured to identify information related to an endpoint and to obtain identified information. EX1016, Fig. 6, ¶¶32 (“[T]he **endpoint 104** can include an **information determination component 202** that can be employed to determine information related to the **endpoint 104**.”), 34 (“The **negotiation component 208** can advertise media capabilities and/or the identity associated with the **endpoint 104** as determined by the **information determination component 202**.”).

See also EX1016, Figure 2 (below) and ¶33 (“[T]he **information determination component 202** can include a capability determination component 204 and/or an identity determination component 206. The capability determination component 204 can determine media capabilities associated with the **endpoint 104** ... [and] the identity determination component 206 can determine an identity associated with the **endpoint 104**....”).



3. **[1b] negotiate a communication session with an interoperability server (IS) based in part on at least one of the identified information or a predefined floor control mechanism associated with the IS; and**

Shaffer discloses that the **negotiation component 208** (which again is implemented on a processor together with the **information determination component 202**) is configured to negotiate a communication session with an interoperability server (IS) based in part on both the identified information and a predefined floor control mechanism associated with the IS. EX1016, claim 20 (“An apparatus, comprising: an information determination component that identifies

information related to an endpoint; and a negotiation component that negotiates a communication session with an interoperability server (IS) based in part on at least one of the identified information or a pre-defined floor control mechanism associated with the IS.”); *see also id.* ¶¶34 (“The negotiation component 208 can negotiate a session with an IS 102.... Further, the negotiation component 208 can present *determined and/or identified capabilities and/or identity associated with the end point 104.*”), 16, 35, 53 (emphasis added).

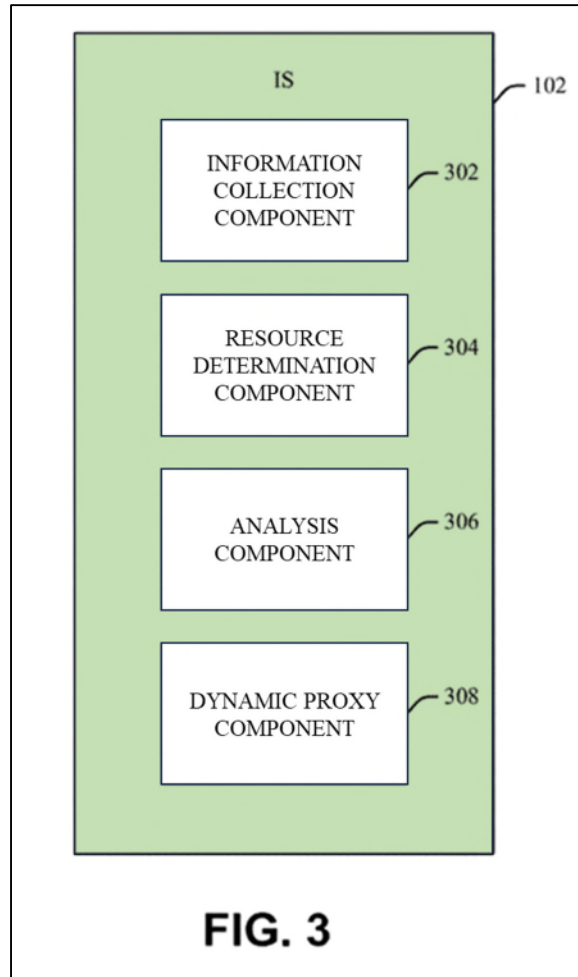
4. **[1c] receive a first determination from the IS that the endpoint is not in adherence with capabilities of the predefined floor control mechanism and that a proxy is to be dynamically inserted to connect the endpoint to a virtual talk group, wherein the capabilities comprise quality of service, rules of transmission and trusted endpoint identity.**

Claim 1c requires receiving a first determination from the IS that (a) the endpoint is not in adherence with capabilities of the predefined floor control mechanism; and (b) a proxy is to be dynamically inserted to connect the endpoint to a virtual talk group. *See supra* §III.D.1 Shaffer, in view of Keller, renders obvious both parts (a) and (b) of this limitation.

- a. **“receive a first determination from the IS that the endpoint is not in adherence with capabilities of the predefined floor control mechanism . . . wherein the capabilities comprise quality of service, rules of transmission and trusted endpoint identity”**

As an initial matter, the “the predefined floor control mechanism” part of this limitation must be associated with the IS because this part derives its

antecedent basis from the “a predefined floor control mechanism associated with the IS” limitation in [1b]. Shaffer discloses that the predefined floor control mechanism is associated with the IS, because the IS is enforcing the floor control policy of the system of which the IS is a part and to which a non-compliant endpoint is seeking to join. See EX1016, ¶¶34, 46. Moreover, the IS 102, as shown in Figure 3, below, contains a dynamic proxy component, which “can provide talk group features, such as, but not limited to, floor control.” EX1016, ¶46.



It would have been obvious to a POSITA that the processor (**information determination component 202** and **negotiation component 208**) is configured to receive a first determination from the interoperability server that the initiating endpoint is not in adherence with the following three capabilities of the predefined floor control mechanism: quality of service, rules of transmission, and trusted endpoint identity. As will be explained more below: (1) Shaffer discloses that a proxy can be dynamically inserted when the endpoint does not adhere to the capabilities of the floor control mechanism; (2) it would have been obvious to a POSITA that the interoperability server and endpoint disclosed in Shaffer used SIP to communicate for signaling (e.g., call set-up, maintenance and teardown); and (3) it would have been obvious to a POSITA to combine Shaffer's SIP-based interoperability system with Keller's disclosure of informing a SIP-enabled endpoint that it is not in compliance with the floor control mechanism via SIP-based messaging.

First, Shaffer discloses that a proxy can be dynamically inserted when an endpoint attempts to connect to a VTG but is not in adherence with the following three capabilities of the predefined floor control mechanism:

Quality of Service. Shaffer explains that “[t]he analysis component 306 [within the IS 102] can analyze the capabilities of the endpoint (determined by the information collecting component 302) to determine if the endpoint should

be connected via a proxy. If the capabilities are analyzed to be non-conforming to the IS 102, a dynamic proxy component 308 is employed to proxy the endpoint.” EX1016, ¶41, Fig. 3. One of the capabilities of the endpoint analyzed by the analysis component 306 is the quality of service that the endpoint can provide. *Id.* ¶39.

Rules of transmission. EX1016, ¶56 (“[I]f the endpoint is admitted into a VTG without proper credentials, it can be monitored for its adherence with a floor control policy, such as a specified rule of transmission. If it is identified that the monitored endpoint is non-conforming with the floor control policy, a proxy can dynamically be inserted between the endpoint and the VTG.”); *see also id.* ¶¶19, 34.

Trusted Endpoint Identity. EX1016, ¶19 (“If the identity of the endpoint cannot be validated as trusted and/or secure, the system can either reject the communication request or act as a proxy for the endpoint and join the VTG on behalf of the endpoint.”).

It would have been obvious to a POSITA that a proxy would also be inserted when an endpoint is not in adherence with all three capabilities of the predefined floor control mechanism. EX1002, ¶170.

Second, Shaffer explains that “IS 102 can connect two-way radios to other networks, for example, by employing IP (internet protocol) technology standards”

(EX1016, ¶28) and that an example of “endpoint 104 can be an IP phone” (*id.*

¶35). At the time of the ’852 patent, a well-known example of an IP technology used for push-to-talk (PTT) devices was SIP (session initiation protocol). EX1002, ¶171. Thus, it would have been obvious to a POSITA for the IS 102 and the endpoint 104 to employ SIP as the disclosed IP technology standard for signaling. EX1002, ¶171.

Third, while Shaffer does not disclose informing the endpoint that it is not in adherence with the floor control mechanism, Keller does:

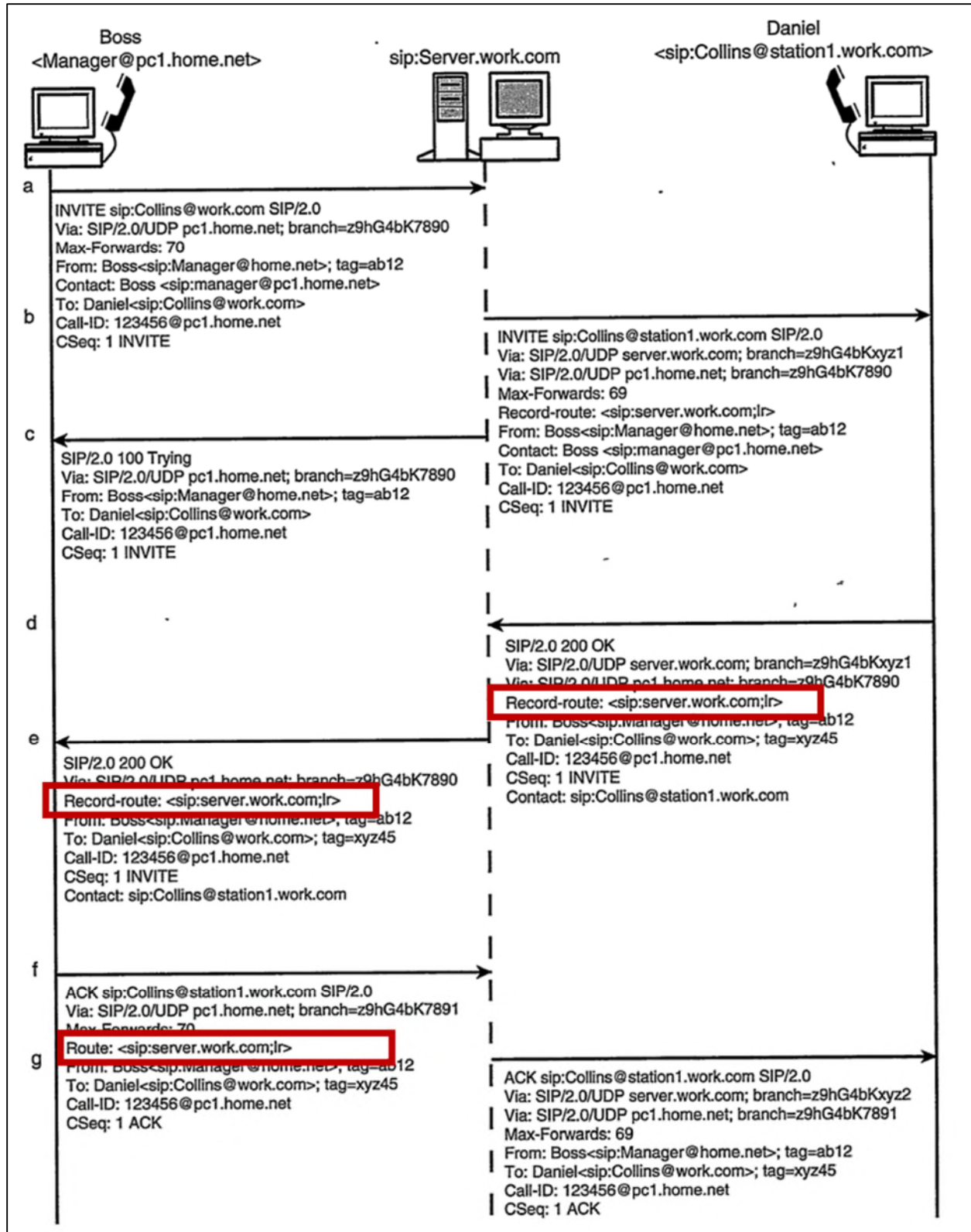
The group entity might also detect that the terminal is unable to communicate with the floor controller 230. In this case, the group entity would preferably generate signaling to the non-dispatch endpoint to cause the endpoint to direct its media to the media manager, which would preferably be configured to impose talker arbitrated floor control on a full duplex device, e.g., the non-dispatch endpoint. The media manager will preferably generate floor requests to the floor controller when voice is sourced by the non-dispatch terminal. As an option, tones or other audio information could be sent out to the user if they attempt to speak when someone else has the floor to discourage them from speaking further.

EX1024, ¶121.

b. “receive a first determination from the IS ... that a proxy is to be dynamically inserted to connect the endpoint to a virtual talk group”

While Shaffer does not expressly disclose an endpoint with a processor receiving a determination from the IS that a proxy is to be dynamically inserted to connect the endpoint to a virtual talk group, it would have been obvious to a POSITA that an endpoint with a processor—using SIP to communicate with the IS—would receive a determination that a proxy is to be dynamically inserted to connect the endpoint to a virtual talk group. EX1002, ¶173.

As explained in Section VII.D.4.a *supra*, it would have been obvious to a POSITA that the endpoint and IS use SIP to communicate signaling information for the call. A POSITA would also have known and/or it would have been obvious to a POSITA that the SIP message received by the endpoint after initiating a call to a VTG would include a “record-route” header, which lists each of the servers that the signal from the endpoint traverses when attempting to establish communication with the VTG, as shown below:



EX1002, ¶¶174 (citing and quoting EX1022 (DANIEL COLLINS, CARRIER GRADE VOICE OVER IP (2nd ed. 2003)), at 190–95). Alternatively, and/or in addition to the knowledge of a POSITA, it would have been obvious to combine Shaffer with Keller, which discloses the use of the record-route header when establishing a PTT call. *E.g.*, EX1024, ¶46 (discussing the record-route header); EX1002, ¶¶175.

The record-route header received by the endpoint would include an identification showing that the proxy server was added to the signal path. EX1002, ¶¶174–76. Thus, the processor of the endpoint would be informed that a determination was made to insert the claimed proxy.

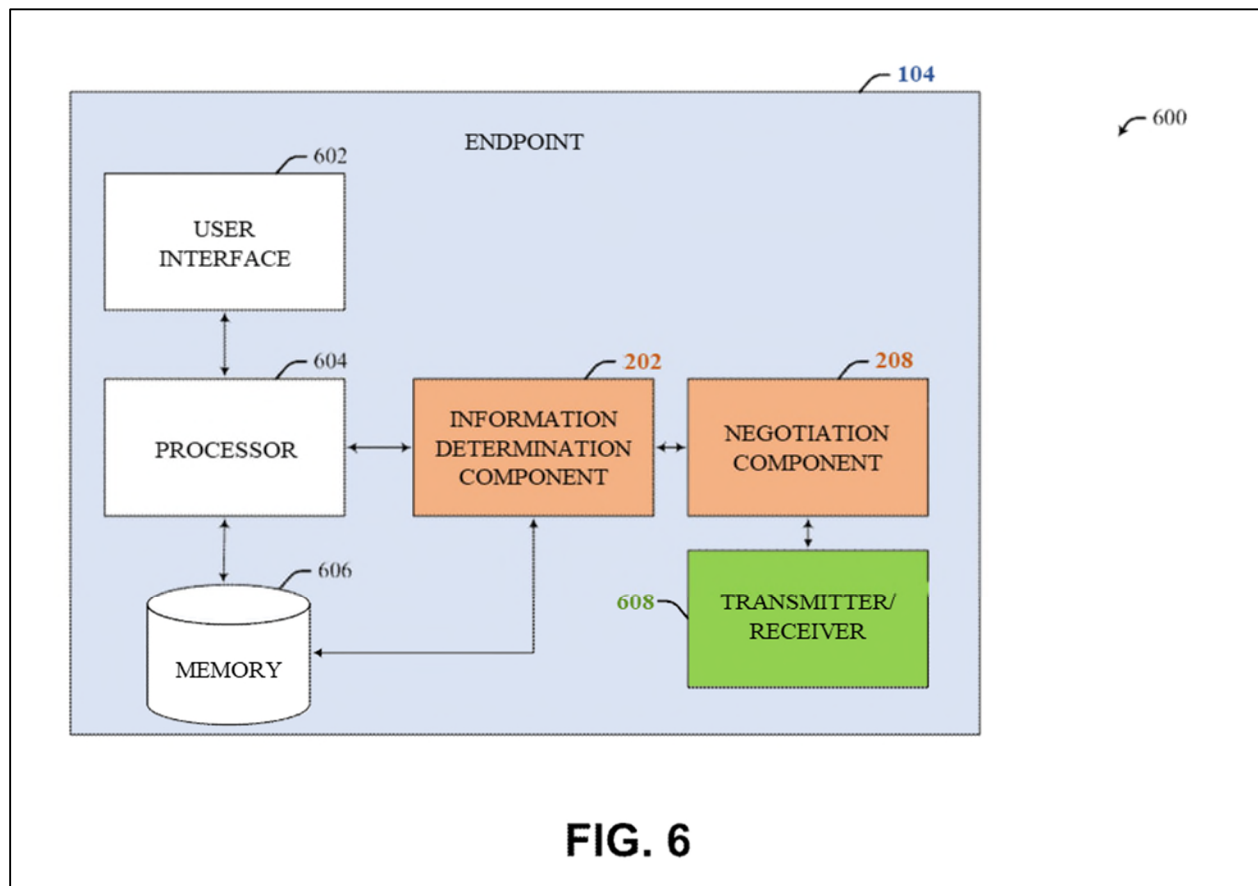
E. Claim 2. The apparatus of claim 1, wherein the processor is further configured to identify media capabilities associated with the endpoint, the media capabilities employed by the IS to dynamically determine if the endpoint should be connected to the virtual talk group via the proxy.

Shaffer discloses the apparatus of claim 1. *See supra* §VII.D (claim 1). Shaffer further discloses the remaining limitations of claim 2. EX1016, claim 21 (“The apparatus of claim 20, further comprising a capability determination component that identifies media capabilities associated with the endpoint, the media capabilities employed by the IS to dynamically determine if the endpoint should be connected to a virtual talk group (VTG) via a proxy.”); *see also id.*, Fig. 2 (showing the capability determination component 204 within the information determination component 202), ¶¶33–34.

F. Claim 3. The apparatus of claim 2, further comprising a transmitter, wherein the transmitter transmits data to the virtual talk group if it is determined that the proxy is not employed to connect the endpoint to the virtual talk group.

Shaffer discloses the apparatus of claim 2. *See supra* §VII.E (claim 2).

Shaffer discloses the apparatus of claim 2 ([endpoint 104](#)) further comprising a transmitter ([transmitter 608](#)):



EX1016, Fig. 6; *see also id.* ¶54 (“A transmitter/receiver 608 can be employed to transmit and receive data from/to the endpoint 104.”).

Shaffer further discloses that “[i]f a proxy is not employed to attach the endpoint [104] device to the given VTG, media can be transmitted directly to a

VTG at [step] 810.” EX1016, ¶58, Fig. 8. A POSITA would have understood **transmitter 608** to be the means by which **endpoint 104** transmitted directly to the virtual talk group if a proxy was not employed—nothing else in **endpoint 104**, as shown in Figure 6, appears capable of transmitting to the virtual talk group.

EX1002, ¶180.

G. Claim 4. The apparatus of claim 2, further comprising a transmitter, wherein the transmitter transmits data to the proxy over a private channel if it is determined that the proxy is employed to connect the endpoint to the virtual talk group.

Shaffer discloses the apparatus of claim 2 further comprising a transmitter.

See supra §§VII.E, VII.F.

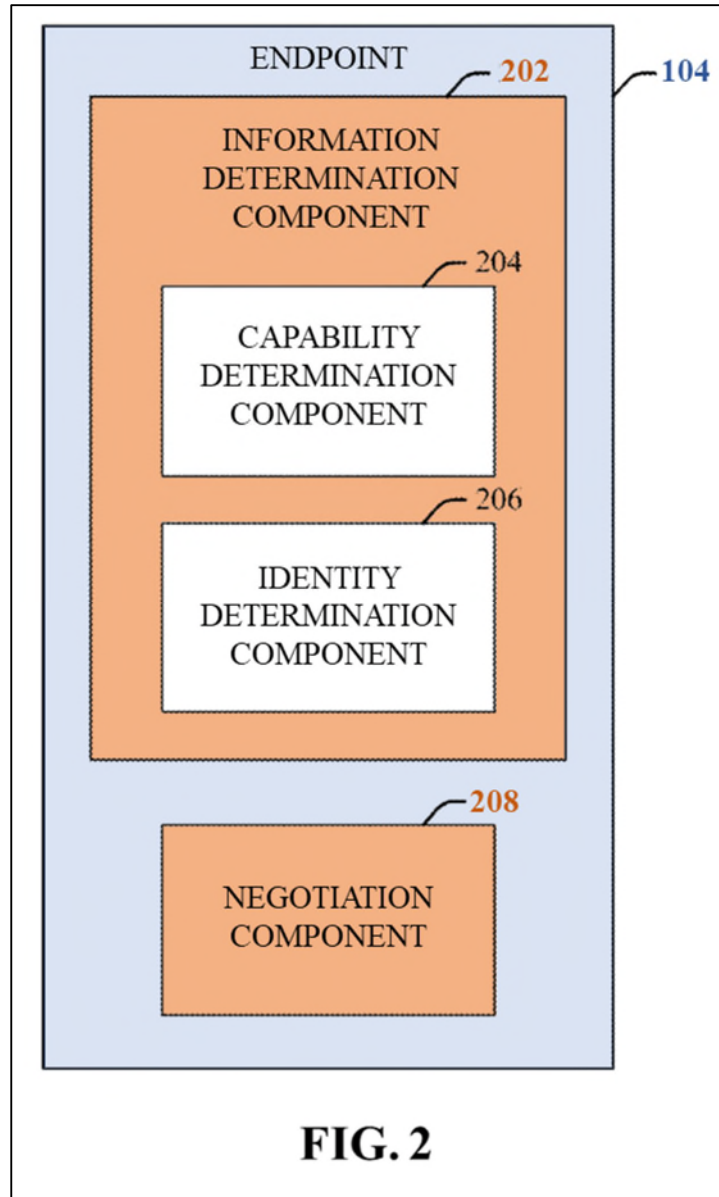
Shaffer further discloses “wherein the transmitter transmits data to the proxy over a private channel if it is determined that the proxy is employed to connect the endpoint to the virtual talk group.” Shaffer explains that the interoperability server (IS) can also be the claimed proxy and, in instances where the interoperability server is also the claimed proxy, “[t]he IP phone [endpoint/claimed apparatus] can transfer traffic over the private channel to the IS (FIG. 1), which can stream the traffic to the VTP and vice versa.” EX1016, ¶35; *see also id.* ¶47 (“The audio traffic from the IP phone can be received by the dynamic proxy component 308 over a private channel and can be streamed to the intended VTG and vice versa.”).

H. Claim 5. The apparatus of claim 1, wherein the processor is further configured to determine an identity associated with the endpoint, the identity employed by the IS to dynamically

determine if the endpoint should be connected to the virtual talk group via the proxy.

Shaffer discloses the apparatus of claim 1. *See supra* §VII.D (claim 1).

Shaffer discloses that the **endpoint 104** includes an identity determination component 204 (part of the **claimed processor**, as shown in Figure 2, below) that “can determine an identity associated with the endpoint 104, such as a talker-id, or IP address.” EX1016, ¶33. The **negotiation component 208** (part of the **claimed processor**) then discloses the identity associated with the **endpoint 104** to the IS. *Id.* ¶34. Based on the information provided by the **negotiation component 208**, the IS 102 (FIG. 1) can determine if the **endpoint 104** should be allowed to join the VTG and also determine if the endpoint should be directly connected to the VTG or should be connected via a proxy.” *Id.*



- I. **Claim 7. The apparatus of claim 1, wherein the processor is further configured to monitor endpoints directly connected to the virtual talk group and determines that a directly connected endpoint is not conforming with a floor control policy of the virtual talk group.**

Shaffer discloses the apparatus of claim 1. *See supra* §VII.D (claim 1).

Shaffer discloses the processor is further configured to monitor endpoints directly connected to the virtual talk group and determines that a directly

connected endpoint is not conforming with a floor control policy of the virtual talk group. See EX1016, ¶34 (“In an example embodiment, if the endpoint 104 is admitted into a VTG without proper credentials, it can be continuously monitored by other endpoints for its adherence with system’s floor control policy. If another endpoint identifies the monitored end point as non-conforming with the floor control policy of the system, the IS 102 (FIG. 1) can dynamically insert a proxy between the endpoint 104 and the VTG.”). It would have been obvious to a POSITA that the “other endpoints” in Shaffer paragraph 34 could also be non-compliant endpoints (*i.e.*, all endpoints in the talk group monitor each other). EX1002, ¶186.

J. Claim 8

1. [8pre] A method comprising:

To the extent the preamble is limiting, Shaffer discloses a method. EX1016, Abstract, ¶¶24, 26.

2. [8a] initiating communication with a non-compatible communication device; identifying information associated with an initiating device; and

See supra §VII.D.2.

3. [8b] negotiating a communication session with an interoperability server (IS) based in part on at least one of the identified information or a predefined floor control mechanism associated with the IS; and

See supra §VII.D.3.

4. **[8c] receiving a first determination from the IS that the initiating device is not in adherence with capabilities of the predefined floor control mechanism and that a proxy is to be dynamically inserted to connect the initiating device to a virtual talk group, wherein the capabilities comprise quality of service, rules of transmission and trusted endpoint identity.**

See supra §VII.D.4.

- K. **Claim 9. The method of claim 8, wherein the information associated with the initiating device includes at least one of media capability information associated with the initiating device or an identity of the initiating device.**

See supra §VII.J, VII.E.

- L. **Claim 10. The method of claim 8, further comprising transmitting media to the proxy over a private network through custom messages if it is evaluated that the proxy is employed.**

See supra §§VII.J, VII.G; *see also* EX1016, ¶58 (“If it is determined that the proxy is employed to attach the endpoint device to the given VTG, media can be transmitted to the proxy over a private network through custom messages at 812.”).

- M. **Claim 11. The method of claim 8, further comprising, attaching the initiating device directly to the virtual talk group and transmitting media directly to the virtual talk group if the proxy is not employed to attach the initiating device to the virtual talk group.**

See supra §§VII.J (claim 8), VII.F (claim 3).

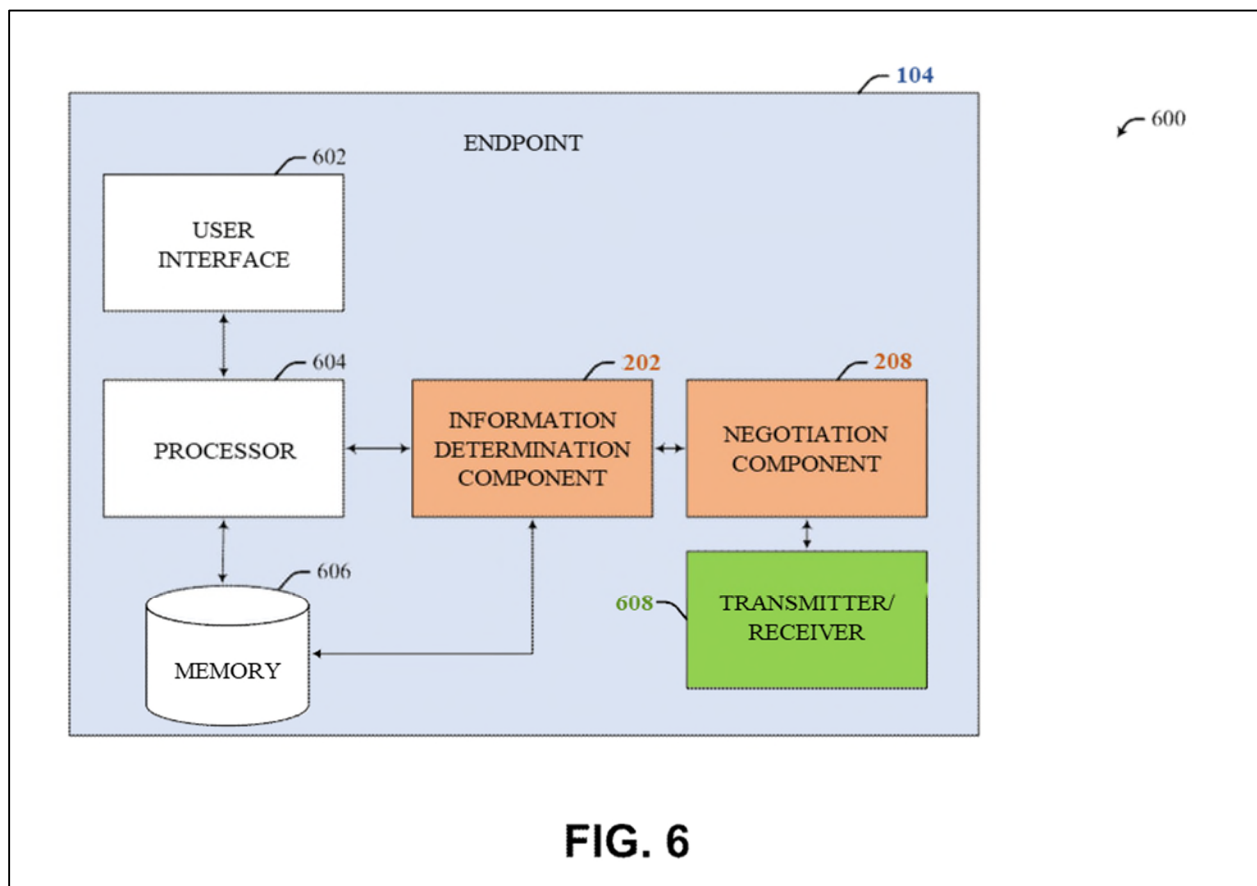
N. Claim 12

1. [12pre] An endpoint comprising:

To the extent the preamble is limiting, Shaffer discloses an endpoint. See *supra* §VII.D.1 (claim 1pre).

2. [12a] a transmitter and a receiver;

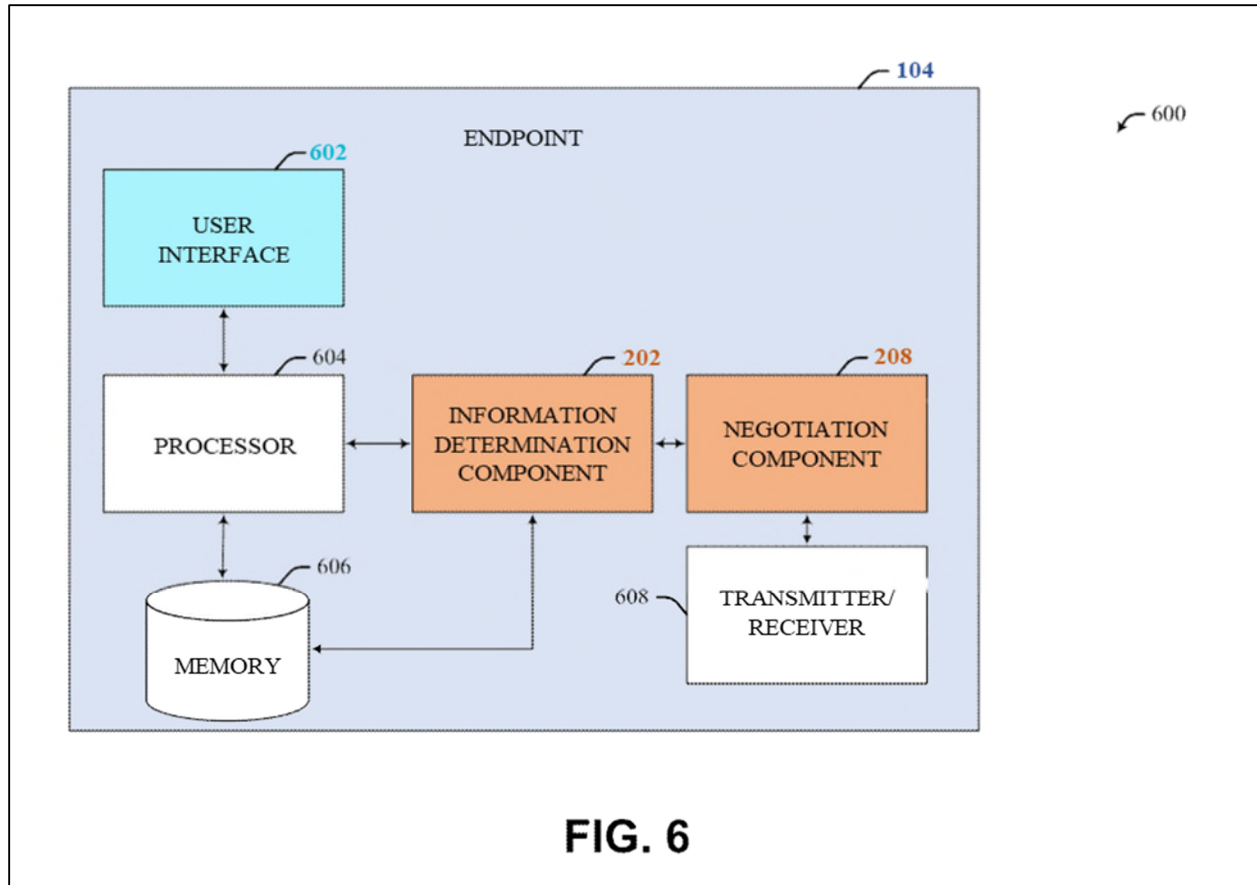
Shaffer discloses an endpoint with a transmitter and receiver (transmitter/receiver 608):



EX1016, Fig. 6; see also *id.* ¶54.

3. [12b] a user interface;

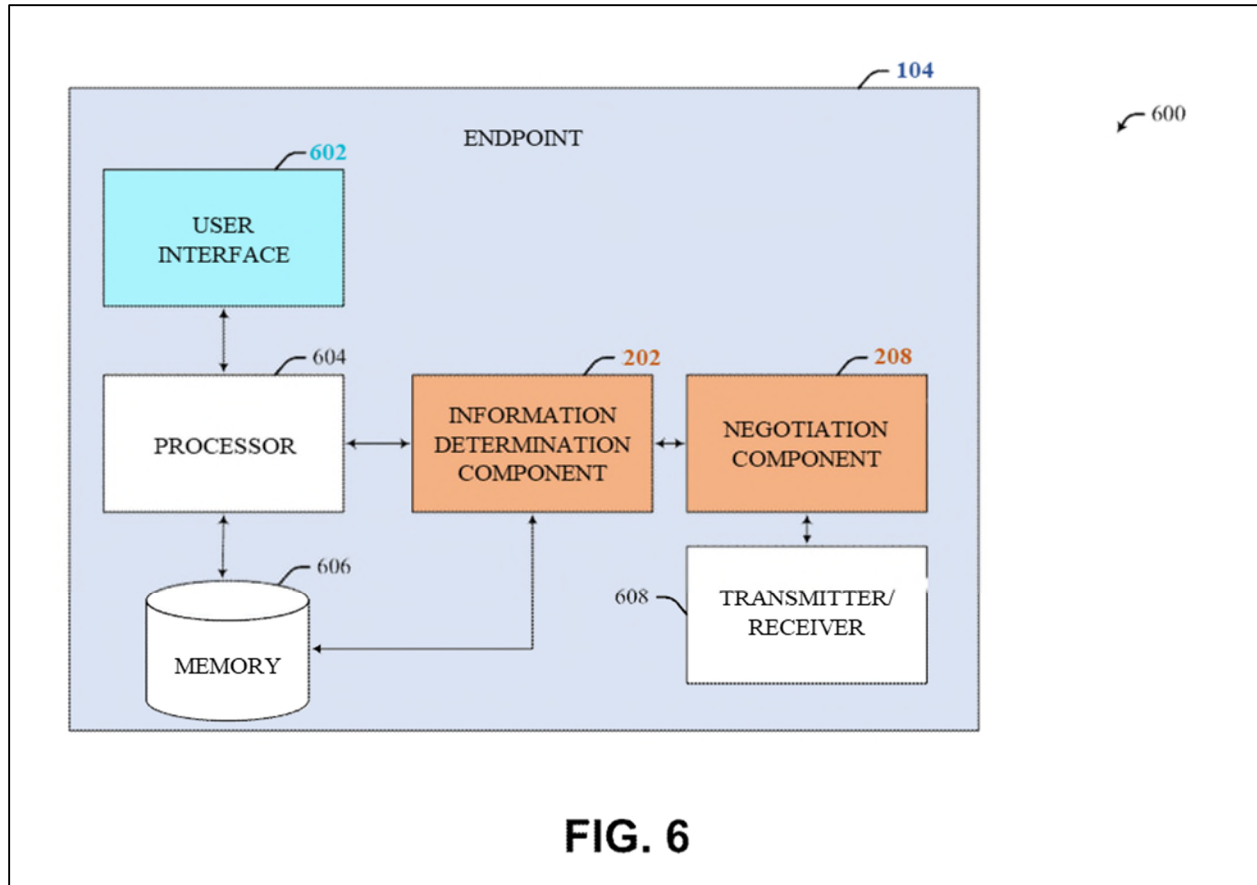
Shaffer discloses an endpoint with a user interface (user interface 602):



EX1016, Fig. 6; *see also id.* ¶53 (“The endpoint 104 can generally include a user interface 602 that can be employed by an entity, such as a user to initiate or receive communication.”).

4. [12c] a processor coupled to the user interface, wherein the processor: identifies information related to the endpoint;
and

Shaffer discloses a processor (information determination component 202 and negotiation component 208) coupled to the user interface (user interface 604):



EX1016, Fig. 6; *see also id.* ¶53.

Shaffer further discloses that the processor identifies information related to the endpoint. *See supra* §VII.D.2.

5. **[12d] negotiates a communication session with an interoperability server based in part on at least one of the identified information or a predefined floor control mechanism associated with the interoperability server; and**

See supra §VII.D.3.

6. **[12e] receive a first determination from the interoperability server that the endpoint is not in adherence with capabilities of the predefined floor control mechanism and that a proxy is to be dynamically inserted to connect the endpoint to a virtual talk group, wherein the capabilities**

**comprise quality of service, rules of transmission and
trusted endpoint identity**

See supra §VII.D.4 (claim 1c).

- O. Claim 13. The endpoint of claim 12, wherein the processor identifies media capabilities associated with the endpoint, the media capabilities employed by the interoperability server to dynamically determine if the endpoint should be connected to the virtual talk group via the proxy.**

See supra §§VII.N, VII.E.

- P. Claim 14. The endpoint of claim 12, wherein the processor determines an identity associated with the endpoint, the identity employed by the interoperability server to dynamically determine if the endpoint should be connected to a virtual talk group via the proxy.**

See supra §§VII.N, VII.H.

- Q. Claim 15. The endpoint of claim 12, wherein the processor causes the transmitter to transmit data to the virtual talk group if it is determined that the proxy is not employed to connect the endpoint to the virtual talk group.**

See supra §§VII.N, VII.F.

- R. Claim 16. The endpoint of claim 12, wherein the processor causes the transmitter to transmit data to the proxy over a private channel if it is determined that the proxy is employed to connect the endpoint to the virtual talk group.**

See supra §§VII.N, VII.G.

VIII. GROUND 3: CHOWDHURY IN VIEW OF OMA-POC DOCUMENTS, TR23.979, JIN AND THE KNOWLEDGE OF A POSITA RENDERS OBVIOUS CLAIMS 1 TO 2 AND 9 TO 13

A. Motivation to Combine Chowdhury with the OMA-PoC Documents

A POSITA would have found it obvious to combine Chowdhury with PoC Interworking Service, PoC System Description, and PoC Architecture⁵ (collectively, the “OMA-PoC Documents”). The OMA-PoC Documents each discuss different aspects of the OMA PoC standard/specification. The OMA-PoC documents also cross-reference each other, so a POSITA would have been motivated to combine their disclosures. Chowdhury is based on the “interconnecting Push to Talk over Cellular (POC) standard from the Open Mobile Alliance (OMA), *i.e.*, OMA-POC.” EX1036, 3:19–20. Thus, for information relating to implementing the systems and techniques disclosed in Chowdhury, including the media gateway, a POSITA would look to the OMA-PoC Documents, including the PoC Architecture (EX1029), PoC Requirements (EX1030), PoC

⁵ While the PoC Architecture document is not referenced in Ground 1, it is referenced Ground 2. For simplicity, PoC Architecture is discussed here in Ground 1, since the reasoning for combining it with Chowdhury is the same for all of the OMA-PoC Documents.

System Description (EX1031), and PoC Interworking Service (EX1032)

documents, among others. EX1002, ¶212.

The invention disclosed in Chowdhury is directed to a system for communication between devices in an **OMA-PoC based network** and devices in a **PTT (e.g., P25) network**, as shown in Figure 1, below (highlighting added).

EX1002, ¶213.

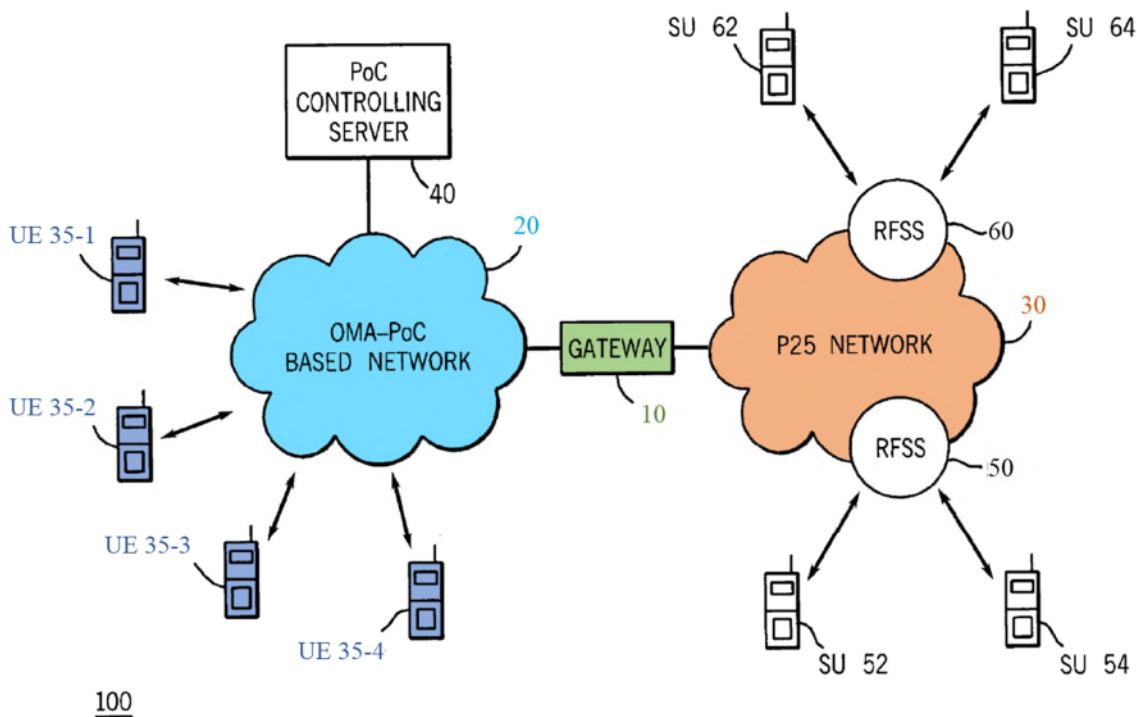


FIG. 1

A POSITA would look to PoC Interworking Service (EX1032), which explains the handling communications between PoC and PTT (P25) Networks, for further information on how to implement those communications. See EX1031 (PoC System Description), 18 (defining “PoC Interworking Service” as “[a] means

to extend the PoC User experience beyond the OMA defined PoC Service and PoC Network boundaries, accomplished by interworking with other networks and systems, while not PoC compliant, being able to provide a reasonably comparable capability, involving simplex media based conferencing.”); EX1029 (PoC Architecture), 11 (same); *see also* EX1030 (PoC Requirements), 73 (describing PoC Interworking Service). EX1002, ¶¶213–14.

B. Motivation to Combine Chowdhury and OMA-PoC Documents with TR23.979

A POSITA would have found it obvious to combine Chowdhury and the OMA-PoC Documents with TR23.979 because the “system description of the SIP/IP Core and the underlying access network for PoC is out of scope of” the PoC Documents; the OMA PoC documentation instead directs a reader to TR23.979. EX1031 (PoC System Description), 10; EX1002, ¶215. Thus, a POSITA would have been motivated to combine TR23.979 with Chowdhury and PoC Interworking, since TR23.979 provides necessary details for understanding the implementation of the functionality of Chowdhury and PoC Interworking, and in particular for additional implementation details about communications between the gateway/interworking function and the devices on the PoC and PTT networks. EX1002, ¶215.

C. Motivation to Combine Chowdhury, OMA-PoC Documents, and TR23.979 With Jin

A POSITA would have found it obvious to combine Chowdhury, the OMA-PoC Documents, and TR23.979 with Jin (EX1036). EX1002, ¶216. Neither Chowdhury, PoC Interworking Service, nor TR23.979 provide any specific details as to how to implement the endpoints/devices that could or would be used with the PoC/PTT architecture disclosed by Chowdhury, PoC Interworking Service, and TR23.979. EX1002, ¶216. Thus, a POSITA interested in a practical implementation of such endpoints/devices would have looked for a document like Jin, which discloses details of an implementation of a device for use with a PTT/PoC system. *See* EX1036, Figs. 1 and 2 and their accompanying descriptions; EX1002, ¶216.

D. Claims 1, 8 and 12

Significant portions of claims 1, 8 and 12 recite similar limitations, but the initial limitations of those claim vary somewhat. Accordingly, the initial limitations will be analyzed separately, followed by a combined analysis for the similar limitations appearing later in the claims.

1. **[1pre] An apparatus comprising a processor, wherein the processor is configured to:**

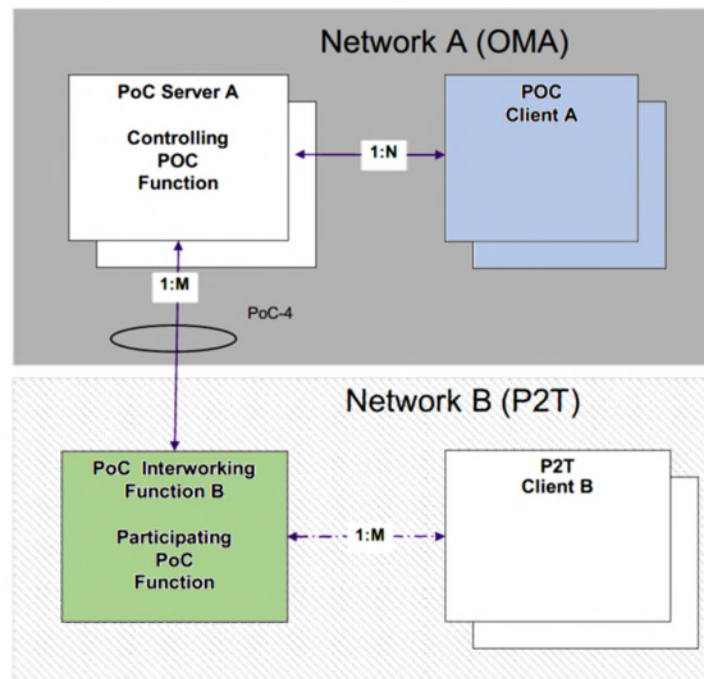
[12pre] An endpoint comprising:

[12a] a transmitter and a receiver;

[12b] a user interface;

[12c] a processor coupled to the user interface, wherein the processor:

To the extent the preambles are limiting, the combination of PoC Interworking Service, Chowdhury and Jin renders them, as well as limitations [12a], [12b] and [12c], obvious. EX1002, ¶217. PoC Interworking Service discloses a network configuration in which a “PoC Client A” in an OMA PoC Network A with a “Controlling PoC Function A” communicates with P2T client B. 1024, 7. The presence of the Controlling PoC Function A in Network A indicates that PoC Client A initiates a communication to P2T Client B. EX1002, ¶217.



PoC Interworking Service does not provide details about PoC Client A, but Chowdhury discloses a similar network configuration in which a commercial

OMA-PoC Network 20 includes a plurality of user equipment (“UE”) devices 35

(i.e., 35-1 to 35-4). EX1035, 3:27–48 and Fig. 1. A POSITA would have

understood or found obvious to employ one of Chowdhury’s UE 35 devices as PoC

Client A in PoC Interworking Services. EX1002, ¶218.

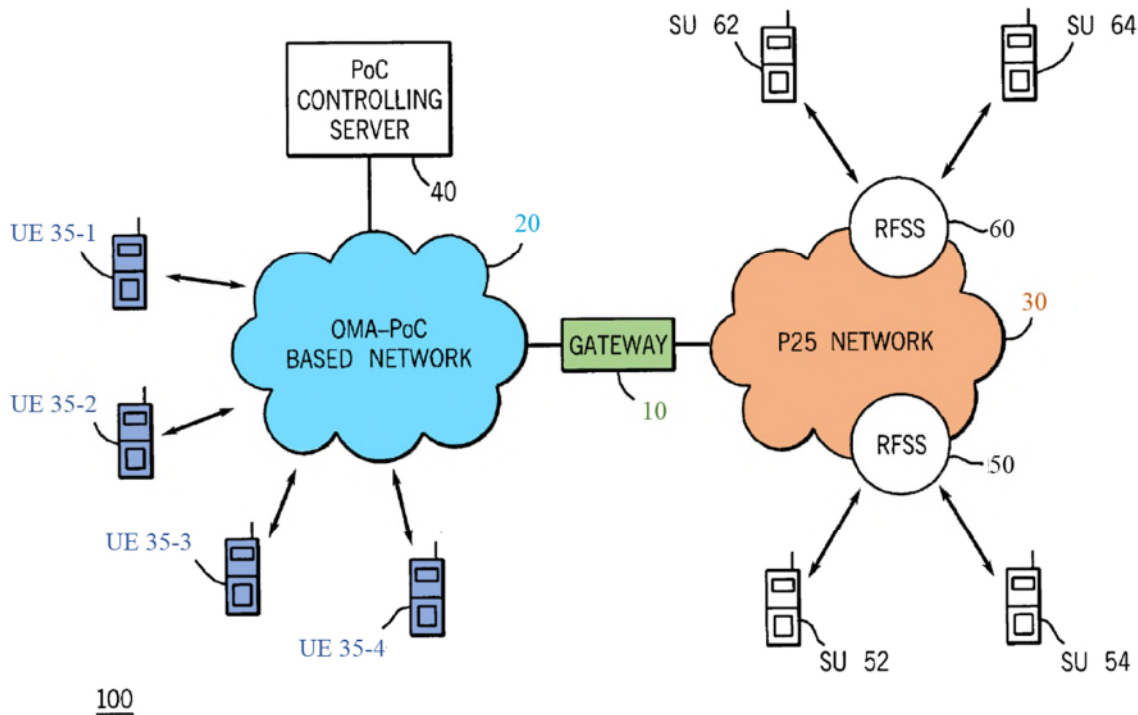
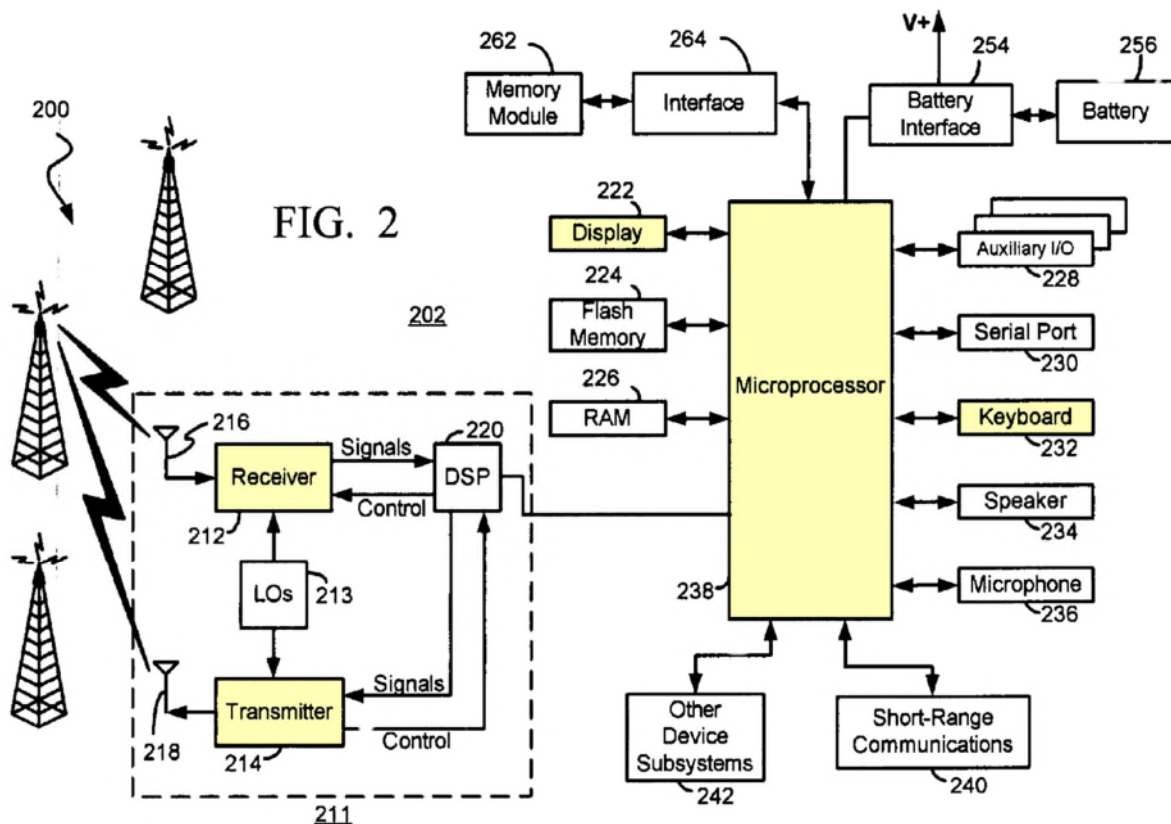


FIG. 1

Chowdhury does not disclose details about the UE 35 devices, but a POSITA would have understood or at least would have found obvious to implement those devices as cellular telephones configured for communication on a PoC network, and would have looked to a reference such as Jin for additional information on how to do so. EX1002, ¶219.

Jin discloses a mobile station 202, which is a cellular telephone in an embodiment, suitable for use in a PoC network as shown below in Figure 2. EX1036, ¶¶[0020], [0024], [0031]. The mobile station 202 includes a microprocessor 238 that is controls overall operation of the mobile station 202, as well as a receiver 212 and transmitter 214. EX1036, ¶¶[0034], [0032]. The mobile station 202 further includes a user interface including a display 222, keyboard 232, an auxiliary user interface 228, and PTT switch 450. EX1036, ¶¶[0034], [0037], [0020], [0049]. A POSITA would have found it obvious to use a mobile station (202) having a processor (238), transmitter (214), receiver (212), and user interface (222) as taught by Jin as the UE-35 in Chowdhury and the PoC Client A in PoC Interworking Services. EX1002, ¶220.



2. [8pre] A method comprising

To the extent the preamble is limiting, the combination of PoC Interworking Service, Chowdhury and Jin renders it obvious. For example, PoC Interworking Service describes methods for facilitating communications between PoC Client A in an OMA PoC Network A with P2T client B. EX1032, 7. Chowdhury discloses a “method of coordinating real-time protocol setup when interconnecting public safety wireless networks and commercial wireless networks to support push-to-talk group calls.” EX1035, 1:9–13. These methods taught in PoC Interworking and Chowdhury render obvious the remaining limitations as discussed below.

3. [8a] initiating communication with a non-compatible communication device

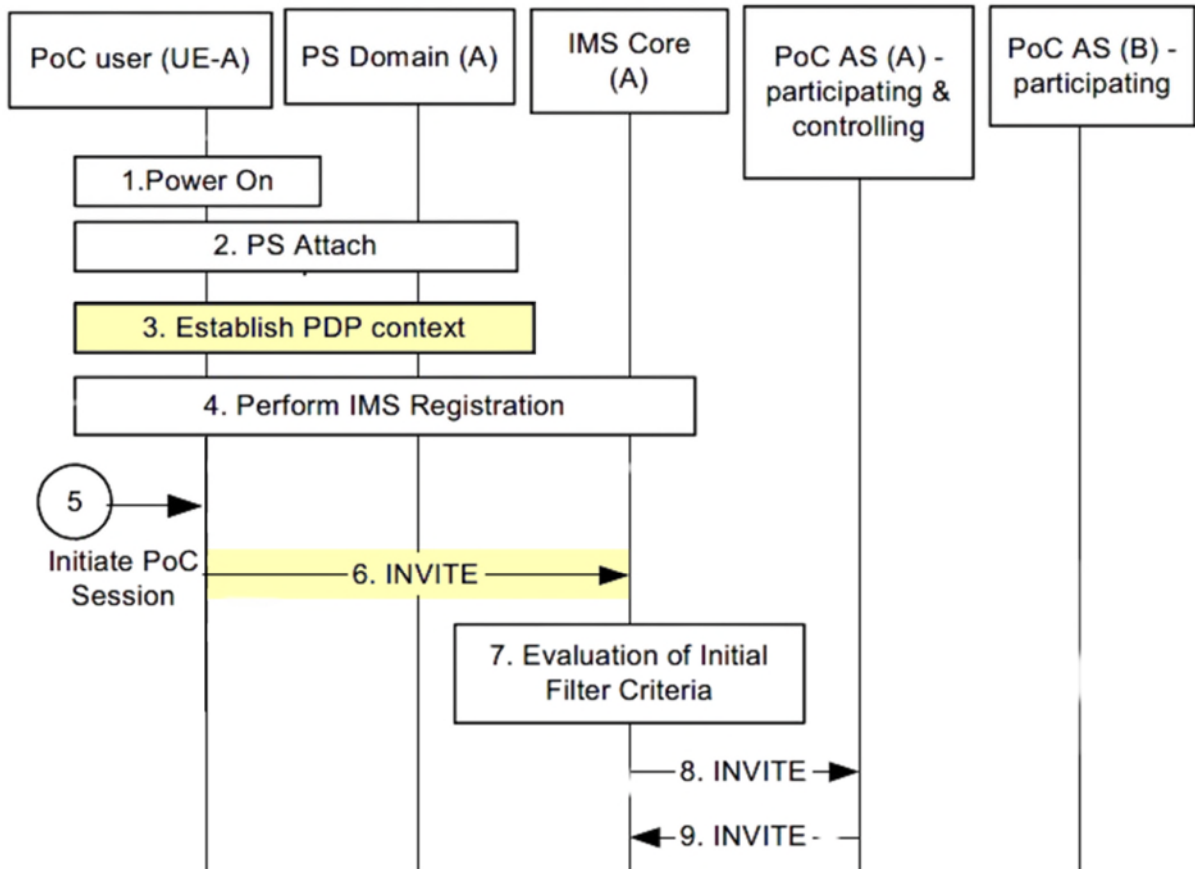
As discussed above, PoC Client A initiates a communication to P2T client B. P2T client B is non-compatible with PoC Client A because they use different communications standards and protocols. For example, because PoC client A is configured for cellular communications on a PoC network whereas P2T Client B is configured for communications on a P2T network such as a P25 network. EX1035, 3:26–42.

4. [1a] identify information related to an endpoint to obtain identified information; and

[8b] identifying information associated with an initiating device;

[12d] identifies information relating to an endpoint

The combination of PoC Interworking Service, Chowdhury and Jin renders these limitations obvious. TR23.979 discloses identifying information relating to an initiating endpoint to obtain identified information for that initiating endpoint. In particular, TR23.979 discloses that the initiating endpoint PoC Client A obtains an IP address for itself during the process of establishing a PDP (packet data protocol) context. EX1033, 12 (Fig. 5.3.1, annotated excerpt shown below) and 13 (referring to inclusion of an IP address obtained in step 3 (“Establish PDP context”) in a SIP invite header in step 6).



The process performed by PoC Client A discussed in TR23.979 is also performed when establishing a communication to P2T Client B as discussed in PoC Interworking Service. EX1032, 10 (discussing replacement of PoC server performing participating PoC function with PoC Interworking Function server performing the participating PoC function in usage scenario 1). EX1002, ¶223.

5. **[1b] negotiate a communication session with an interoperability server (IS) based in part on at least one of the identified information or a predefined floor control mechanism associated with the IS; and**

[8c] negotiating a communication session with an interoperability server (IS) based in part on at least one of the identified information or a predefined floor control

mechanism associated with the IS; and

[12e] negotiates a communication session with an interoperability server based in part on at least one of the identified information or a predefined floor control mechanism associated with the interoperability server; and

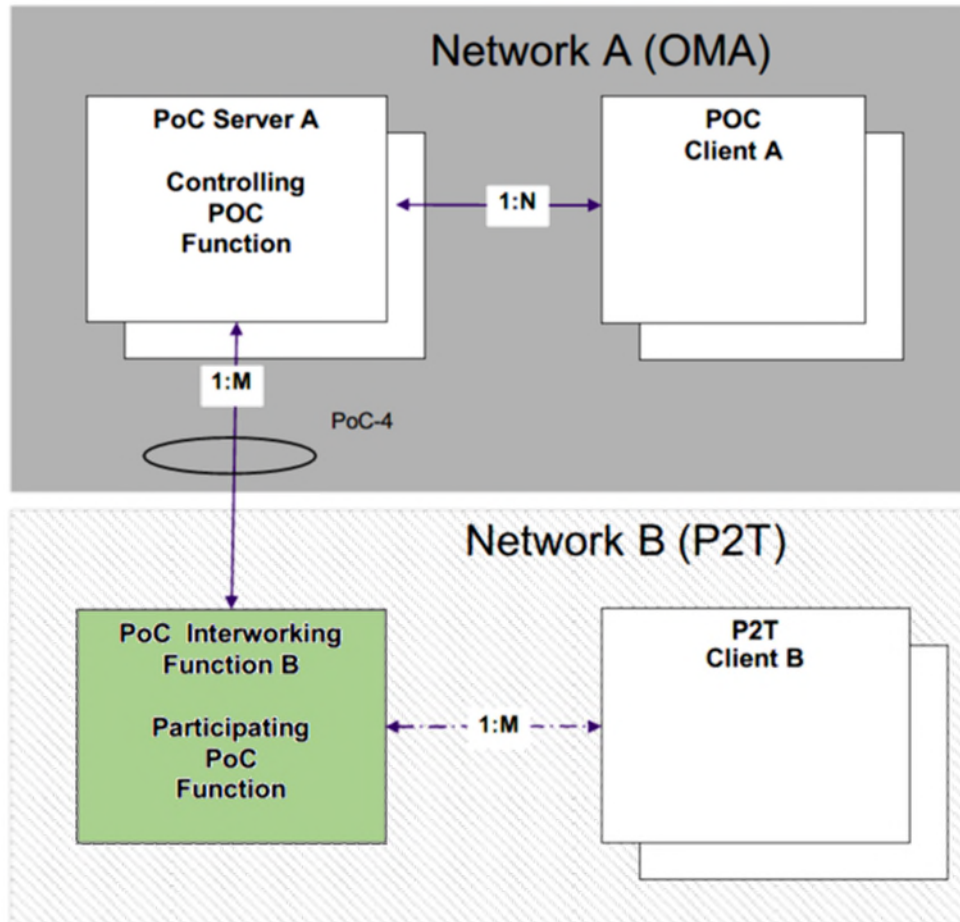
The combination of TR23.979, PoC Interworking Service, and Chowdhury renders these limitations obvious. TR23.979 discloses that PoC Client A negotiates a communication session for communication with P2T Client by sending a SIP Invite message including the IP address for PoC Client A. EX1002, ¶224.

6. UE-A creates a SIP session for the PoC communication by sending the INVITE request into the IMS Core (A), in this example with UE-B as a destination address (alternatively the destination address could also be a PSI hosted by a PoC server for a PoC group session). The INVITE request contains the PoC service indication and the SDP media parameters indicate the IP address obtained in step 3 and that UE-A is ready to send and receive media, as in this example the UE-A established a non-real time PDP context for talk burst control and media at IMS registration time.

EX1033, 13.

The SIP Invite message from PoC Client A reaches an interoperability server (“IS”), namely a server with a PoC Interworking Function that performs a participating PoC function for the connection to P2T Client B. As discussed above, PoC Interworking Service discloses a scenario in which a P2T client may be

connected to a PoC Network A via a PoC Interworking Function resident on a server in a P2T Network B:



EX1032, 17; EX1002, ¶225.

The Interworking Function shown in Figure 1 is an “interoperability server” as that term is used in the ’852 patent because it facilitates communications between PoC Client A and P2T Client B by “provid[ing] conversion between PoC Network based SIP signalling, Talk Burst Control and Media Burst Control Protocol, and Media packet transport, and External P2T Network based session signaling, *floor control*, and media transport protocol.” EX1032, 6 (emphasis

added). This passage of PoC Interworking Service indicates that floor control will be controlled by Network B in which the Interworking Function/IS resides. *Id.*

PoC Interworking Service does not disclose details of the implementation of the PoC Interworking Function B. Thus, a POSITA would have found it obvious to look to Chowdhury, which discloses additional detail concerning the implementation of a PoC interworking function. EX1002, ¶¶226–27 Chowdhury discloses a gateway 10 that connects an OMA-PoC based network 20 with a P2T network, in particular a P25 Network that is a type of P2T network used by public safety officials such as police departments. EX1035, 3:11–42; EX1002, ¶¶226–27.

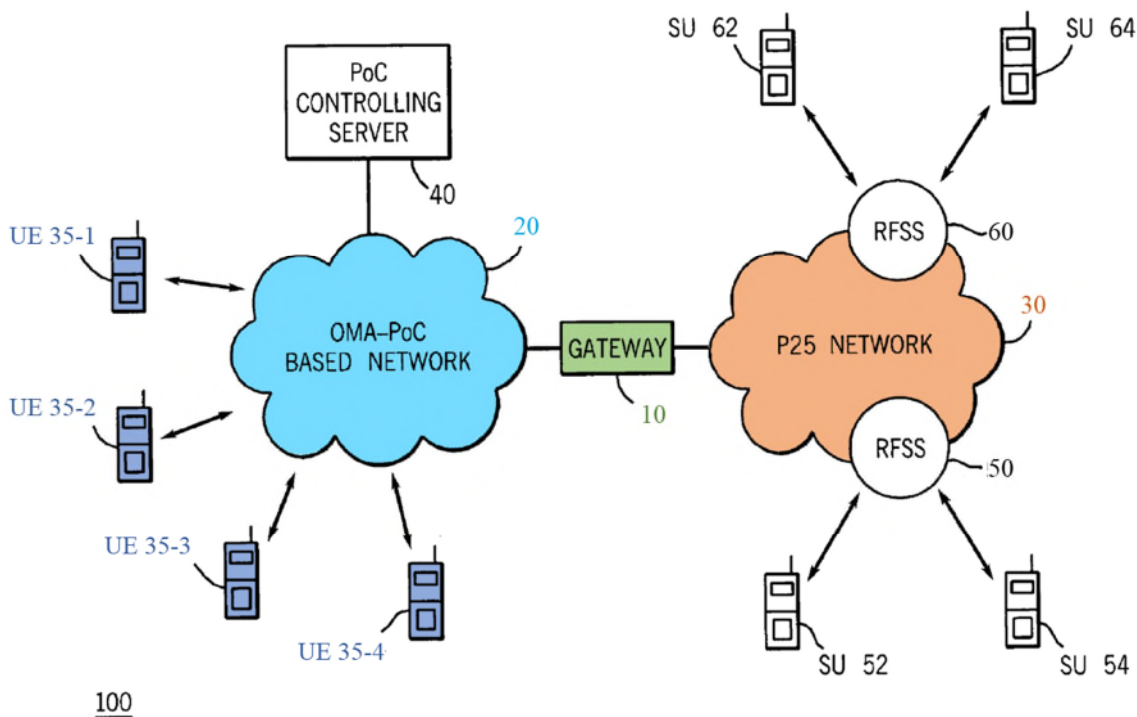
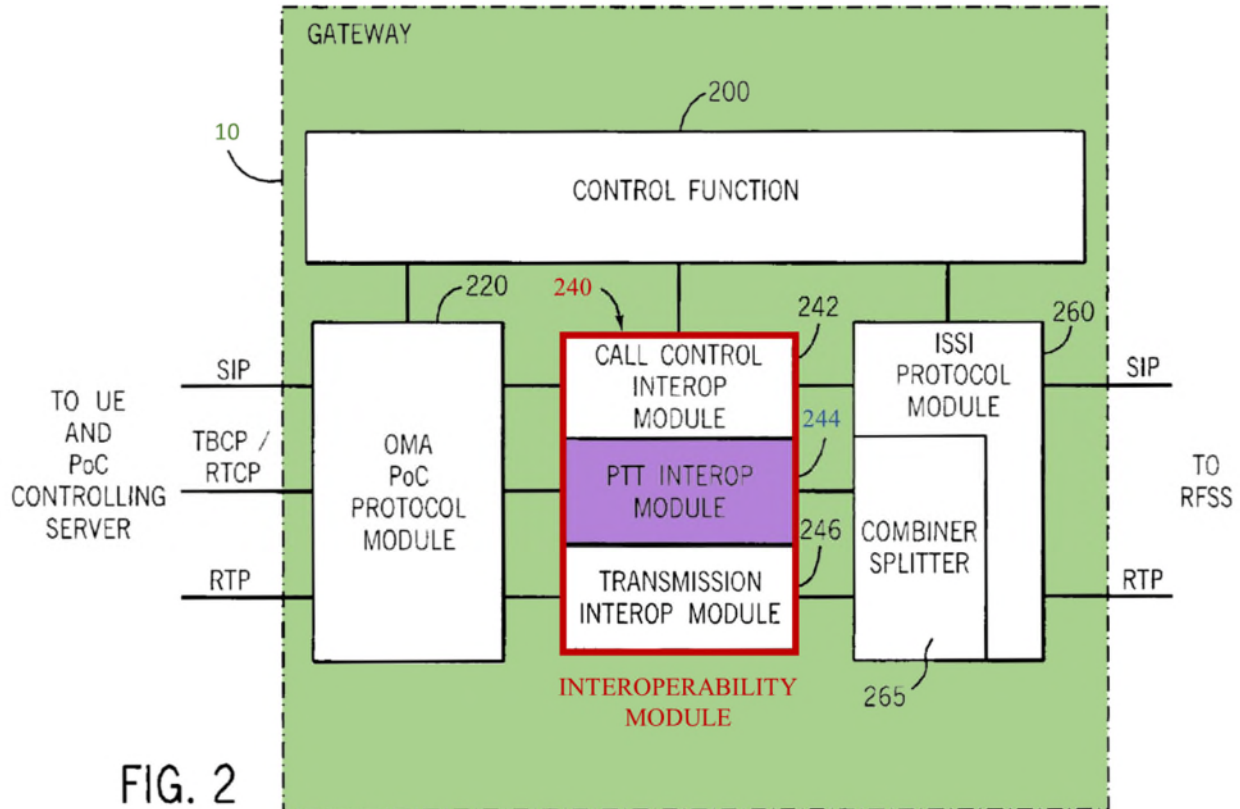


FIG. 1

Chowdhury's gateway 10 is shown in greater detail in Figure 2, below. The gateway 10 includes an interoperability module 240 that constitutes the claimed IS and that performs the functions of the Interworking Function described in PoC Interworking Service, as discussed above. A POSITA would have understood and found it obvious to utilize the gateway 10 to perform the PoC Interworking Function B described above in Figure 1 of PoC Interworking Service. EX1002, ¶228.

As disclosed in Chowdhury, the interoperability module 240 includes a PTT Interop Module 244 that “manages the operation, e.g., floor control arbitration, call preemption etc. of the talk group . . .” EX1035, 6:18–31. Thus, when gateway 10 is implemented as the PoC Interworking Function B and the Interoperability Module 240 serves as the IS, the predefined floor control mechanism is associated with the IS as required by these claim limitations. EX1002, ¶229.



6. [1c] receive a first determination from the IS that the endpoint is not in adherence with capabilities of the predefined floor control mechanism and that a proxy is to be dynamically inserted to connect the endpoint to a virtual talk group, wherein the capabilities comprise quality of service, rules of transmission and trusted endpoint identity.

[8d] receiving a first determination from the IS that the endpoint is not in adherence with capabilities of the predefined floor control mechanism and that a proxy is to be dynamically inserted to connect the endpoint to a virtual talk group, wherein the capabilities comprise quality of service, rules of transmission and trusted endpoint identity.

[12f] receive a first determination from the IS that the endpoint is not in adherence with capabilities of the predefined floor control mechanism and that a proxy is to be dynamically inserted to connect the endpoint to a virtual

talk group, wherein the capabilities comprise quality of service, rules of transmission and trusted endpoint identity”

The combination of PoC Interworking Service, Chowdhury and TR23.979 renders these limitations obvious as explained below.

- a. **“a first determination from the IS that the endpoint is not in adherence with capabilities of the predefined floor control mechanism . . . wherein the capabilities comprise quality of service, rules of transmission and trusted endpoint identity”**

The combination of Chowdhury and PoC Interworking Service renders obvious these portions of limitations [1c], [8d] and [12f]. Chowdhury discloses that the IS/interoperability module 240 includes a Call Control Interop Module 242 that “provides interworking for SIP messages.” EX1035, 6:14–17. Chowdhury also discloses that the IS/interoperability module 240 includes a transmission Interop Module 246 that provides (a) translation of identifiers for the UEs in the PoC Network and identifiers of the radios in the P2T network, (b) provides codec translation if different codecs are used in the PoC and P2T networks, and (c) resequencing of RTP sequence numbers and re-mapping of RTP time-stamps, if necessary. EX1035, 6:33–39. In order to perform these functions, the Call Control Interop Module 242 determines that PoC Client A is not in adherence with the rules of transmission of the P2T network (*e.g.*, if a codec translation is performed by the Call Control Interop Module 242, it must determine that the translation is necessary because the codecs are incompatible). EX1002, ¶231.

b. “a first determination from the IS ... that a proxy is to be dynamically inserted to connect the endpoint to a virtual talk group”

Chowdhury discloses these portions of limitations [1c], [8d] and [12f].

Chowdhury discloses embodiments in which the gateway 10 is connected to the P2T/P25 network 30 solely via connection to the home RFSS server 350 as shown in Figure 3, below. Chowdhury further discloses that the connection between the gateway 10 and the home RFSS server 350 is non-persistent in what Chowdhury describes as configurations 2 and 4. EX1035, 7:37–47. In such configurations, the ISSI protocol module 260 is dynamically inserted to connect the PoC Client A to the Home RFSS sever 350 to complete the connection to a virtual talk group including an SU 355 radio constituting P2T client B in the P2T/P25 network by sending an ISSI-setup-request from the Call Control Interop Module 242 in the IS to the ISSI protocol module 260. EX1035, 11:4–7 and Fig. 6, step 620.

Chowdhury further discloses that the elements of Figure 2 are implemented in separate physical devices in some embodiments. EX1035, 9:37–41. The ISSI protocol module 260 is a dynamically inserted proxy, as that term is used in the '842 patent.

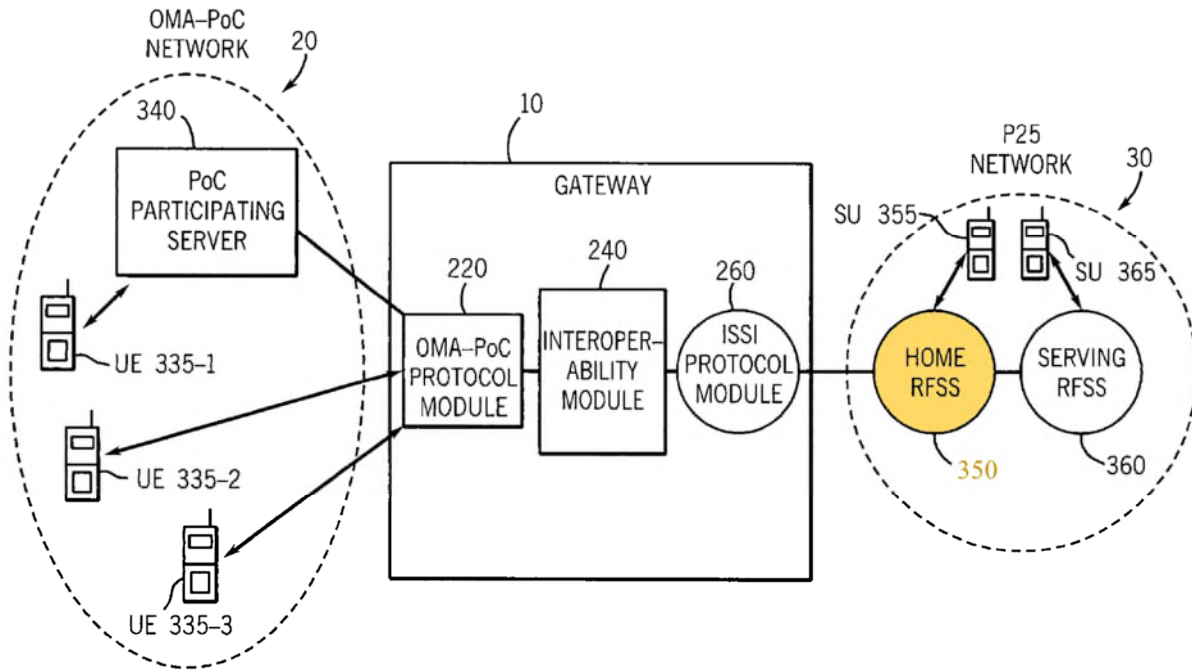


FIG. 3

c. “receive a first determination from the IS . . .”

The combination of TR23.979 and PoC Interworking Service render these portions of limitations [1c], [8d] and [12f] obvious. As discussed above, PoC Interworking Service discloses that, in call flows illustrated in TR23.979, the PoC server that performs the participating PoC function can be replaced with a server that performs the PoC Interworking Function performing the controlling PoC function in scenario 1 illustrated in Figure 1 of that document. EX1032, 10. Below is an annotated version of one such call flow from TR23.979, with annotations showing the substitution of the PoC Interworking Function B for the server performing the PoC participating function, and a P2P user B for the PoC user (UE-B). EX1002, ¶233.

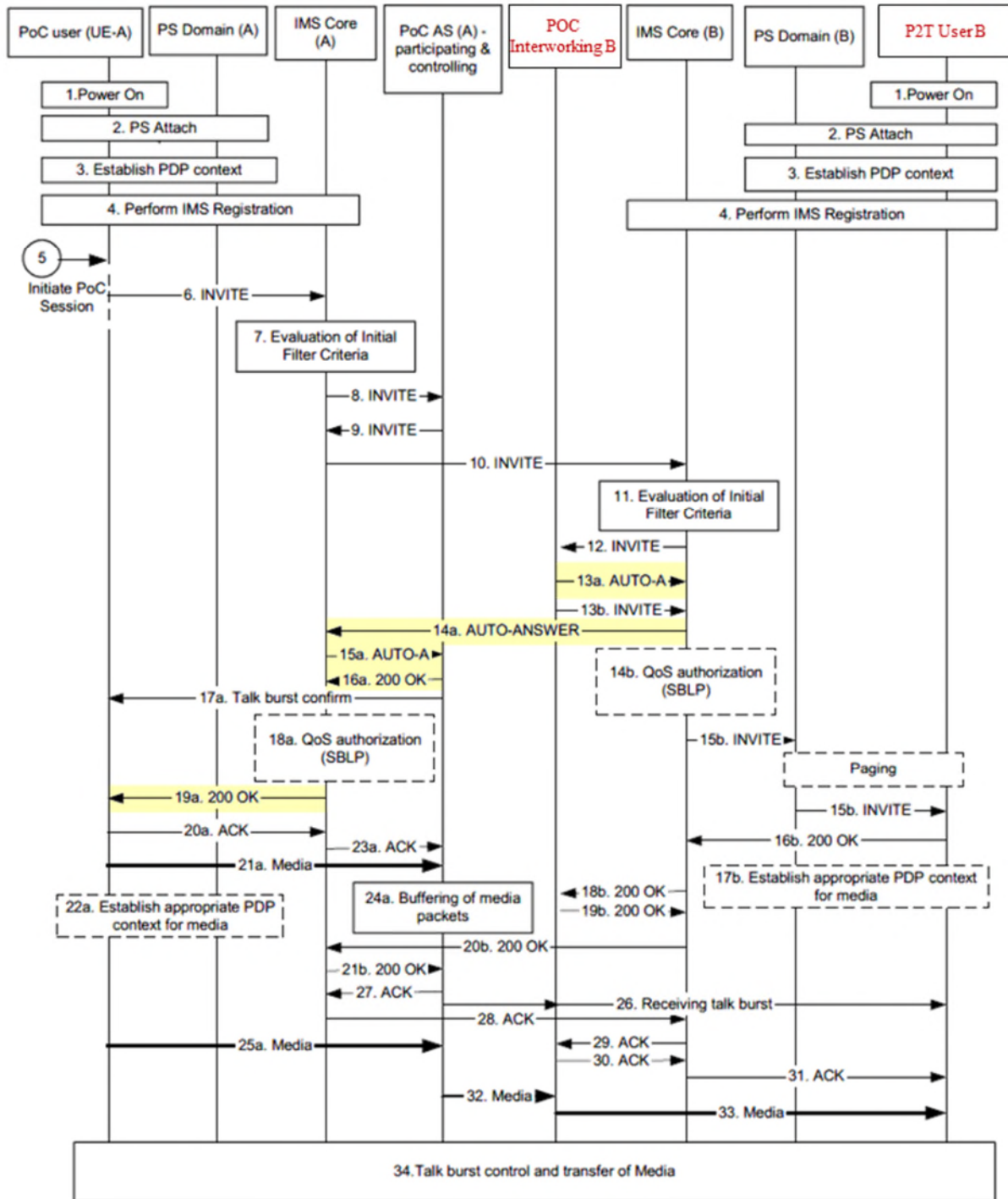


Figure 5.3.1: On-demand signalling with automatic answering

EX1033, 12.

PoC Interworking Service discloses that when the PoC Interworking Function B replaces the PoC Participating function B, the PoC Interworking Function will include a “+g.poc.interworking” tag (an “Interworking Tag”) in the contact header when generating or forward SIP requests and responses in scenario 1. EX1032, 11. Thus, in the figure above, PoC Interworking B will insert the Interworking Tag into the contact header of the Auto-Invite message sent to the IMS Core B at step 13. EX1002, ¶234. It would have been obvious to a POSITA to include the Interworking Tag in the contact headers of subsequent messages in this message flow so that the Interworking Tag is eventually received at PoC Client A. EX1002, ¶234. A POSITA would have done so, for example, in order to notify PoC Client A of the presence of the gateway 10 so that PoC Client A could take actions, such as adjusting timing parameters and/or modifying the transmitted data rate to account for the gateway 10 and ISSI Protocol Module 260 in the path between it and P2T Client B. EX1002, ¶234.

Thus, the Interworking Tag would be included in the Auto-Answer message at step 14a and 15a and in the subsequent OK message received at PoC Client A at step 19a. EX1002, ¶234. The presence of the Interworking Tag in the OK message at step 19a is an indication to the initiating endpoint PoC Client A that the proxy/ISSI protocol module 26 has been dynamically inserted to connect PoC

Client A to the talkgroup including P2T Client B as required by this limitation.

EX1002, ¶234.

Accordingly, limitations [1c], [8d] and [12f] would have been obvious to a POSITA in view of the combination of TR23.979, PoC Interworking Service, PoC System Description, and Chowdhury. EX1002, ¶235.

E. Claim 2. The apparatus of claim 1, wherein the processor is further configured to identify media capabilities associated with the endpoint, the media capabilities employed by the IS to dynamically determine if the endpoint should be connected to the virtual talk group via the proxy.

Claim 13. The endpoint of claim 12, wherein the processor identifies media capabilities associated with the endpoint, the media capabilities employed by the interoperability server to dynamically determine if the endpoint should be connected to the virtual talk group via the proxy.

As explained in section VIII.D, above, the apparatus of claim 1 and the endpoint of claim 12 are obvious over the combination of TR23.979, PoC Interworking Service, PoC System Description, Chowdhury and Jin.

Chowdhury further discloses the limitations of these claims. Chowdhury discloses that the UE 335-1, which corresponds to a PoC Client A in PoC Interworking Services, communicates with the gateway 10 using RTP for media streams. EX1035, 9:55–65. In order to do so, the UE 335-1 determines that it has that capability. Chowdhury further discloses that the Call Control Interop Module 242 (a part of the IS) must examine the ISSI-registration-response to the

previously-sent ISSI-setup-request from the ISSI protocol module 260 to determine if the registration for the RTP communications with the RFSS 350 was successful. EX1035, 11:8–12. If the Call Control Interop Module 242 determines that the RTP registration was not successful, the registration has failed and no connection of the UD 335-1 to the talk group is made. EX1035, 11:13–24.

F. Claim 9. The method of claim 8, wherein the information associated with the initiating device includes at least one of media capability information associated with the initiating device or an identity of the initiating device.

As explained in Section VIII.D, above, claim 8 is obvious over the combination of Chowdhury, PoC Interworking Service, PoC System Description, TR23.979, Jin, and the knowledge of a POSITA.

As explained in Section VIII.D.4 (claims 1a, 8b, and 12d), above, TR23.979 discloses that the initiating endpoint PoC Client A obtains an IP address for itself. An IP address is an identity of the initiating device. EX1002, ¶239. Thus, this claim is also obvious over these references.

G. Claim 10. The method of claim 8, further comprising transmitting media to the proxy over a private network through custom messages if it is evaluated that the proxy is employed.

As explained in Section VIII.D, above, claim 8 is obvious over the combination of Chowdhury, PoC Interworking Service, PoC System Description, TR23.979, Jin, and the knowledge of a POSITA.

Claim 10 is a method claim that recites a condition: “if it is evaluated that the proxy is employed.” Conditional limitations are not entitled to patentable weight in a method claim. *Ex parte Schulhauser*, No. 2013-007847 at 10 (P.T.A.B. April 28, 2016); *see also Marvell Semiconductor, Inc. v. Uniloc 2017 LLC*, IPR2019-01350, Paper 24, 37 (PTAB Feb. 1, 2021)(applying *Schulhauser* under *Phillips* construction). As a result of this conditional limitation, claim 10 covers two methods: one in which the condition is satisfied and one in which it is not, and therefore the steps of “comprising transmitting media to the proxy over a private network through custom messages” need not be shown in the prior art. Given that these requirements are the only additions to claim 8 and are not required to be performed in order to practice the method of claim 10, demonstrating the unpatentability of claim 8 is sufficient to demonstrate the unpatentability of claim 10. *See supra* §VIII.D (claims 1, 8, and 12).

H. Claim 11. The method of claim 8, further comprising, attaching the initiating device directly to the virtual talk group and transmitting media directly to the virtual talk group if the proxy is not employed to attach the initiating device to the virtual talk group.

As explained in Section VIII.D, above, claim 8 is obvious over the combination of Chowdhury, PoC Interworking Service, PoC System Description, TR23.979, Jin, and the knowledge of a POSITA.

Claim 11 is a method claim that recites a condition: “if the proxy is not employed to attach the initiating device to the virtual talk group.” Conditional limitations are not entitled to patentable weight in a method claim. *Ex parte Schulhauser*, No. 2013-007847 at 10 (P.T.A.B. April 28, 2016); *see also Marvell Semiconductor, Inc. v. Uniloc 2017 LLC*, IPR2019-01350, Paper 24, 37 (PTAB Feb. 1, 2021) (applying *Schulhauser* under *Phillips* construction). As a result of this conditional limitation, claim 11 covers two methods: one in which the condition is satisfied and one in which it is not, and therefore the steps of “attaching the initiating device directly to the virtual talk group and transmitting media directly to the virtual talk group” need not be shown in the prior art. Given that these requirements are the only additions to claim 8 and are not required to be performed in order to practice the method of claim 11, demonstrating the unpatentability of claim 8 is sufficient to demonstrate the unpatentability of claim 11. *See supra* §VIII.D (claims 1, 8, and 12).

IX. GROUND 4: CHOWDHURY, THE OMA-POC DOCUMENTS, TR23.979, JIN, AND TS23.060 RENDER OBVIOUS CLAIMS 4, 5, 14 AND 16.

- A. Claim 4. The apparatus of claim 2, further comprising a transmitter, wherein the transmitter transmits data to the proxy over a private channel if it is determined that the proxy is employed to connect the endpoint to the virtual talk group.**

Claim 16. The endpoint of claim 12, wherein the processor causes the transmitter to transmit data to the proxy over a private

channel if it is determined that the proxy is employed to connect the endpoint to the virtual talk group

As explained in sections VIII.D and VIII.E, above, the apparatus of claim 2 and the endpoint of claim 12 are obvious over the combination of Chowdhury, PoC Interworking Service, PoC System Description, TR23.979, Jin, and the knowledge of a POSITA.

The combination of those references and PoC Architecture in view of TS23.060 render obvious the additional limitations of claims 4 and 16. EX1002, ¶245. PoC Architecture discloses that communications “between the PoC Client and PoC Server . . . [are] protected with existing mechanisms being defined for radio access (3GPP GPRS or 3GPP2PDN) and with secured connections between the network domains.” EX1029, 17 (Section 4.2.2). The existing mechanisms for GPRS radio access are defined in TS23.060, which requires “ciphering,” *i.e.*, encryption, for user data and signaling. EX1034, 57 (Section 6.8). The use of such ciphering for transmissions from and to US 335-1 results in a private channel. EX1002, ¶245.

B. Claim 5. The apparatus of claim 1, wherein the processor is further configured to determine an identity associated with the endpoint, the identity employed by the IS to dynamically determine if the endpoint should be connected to the virtual talk group via the proxy.

Claim 14. The endpoint of claim 12, wherein the processor determines an identity associated with the endpoint, the identity employed by the interoperability server to dynamically determine

if the endpoint should be connected to a virtual talk group via the proxy

As explained in section VIII.D, above, the apparatus of claim 1 and the endpoint of claim 12 are obvious over the combination of Chowdhury, PoC Interworking Service, PoC System Description, TR23.979, and Jin.

The limitations of claims 5 and 14 are obvious over these references in view of TS23.060. EX1002, ¶247. As discussed above in Section VIII.D.4 (claims 1a, 8b, and 12d), the PoC Client A identifies its IP address, which is an identity of PoC Client A. That identity is included in the SIP Invite message that is eventually received at the PoC Interworking Function/Interoperability Module 240/IS in the Gateway 10 as discussed above in Section VIII.D.5 (claims 1b, 8c, and 12e). It would have been obvious to a POSITA to configure the IS to use that IP address to confirm that the connection being requested in the SIP invite is allowed, particularly since the P25 network is a public safety network that would be expected to convey sensitive communications. EX1002, ¶247–48.

For example, PoC Architecture explains that a user must be authenticated based on the underlying IP address before it can be allowed to join the PoC session:

The PoC Client SHALL be authenticated prior to accessing the PoC service. The PoC Server SHOULD rely on the security mechanisms provided by the underlying SIP/IP Core, for securing the service environments e.g. authentication of the service usage. It is assumed

that the access level security is provided by the SIP/IP Core as defined in [RFC3261] to support the integrity and confidentiality protection of SIP signaling. The SIP/IP Core needs to ensure during registration that the registered PoC Address is allocated and authorized to be used by that PoC User in order to prevent spoofing attacks as identified in Appendix C. When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, and the User Equipment contains USIM/ISIM or UIM/R-UIM, the mutual authentication SHALL be applied as specified in [3GPP TS 33.203]/[3GPP2 S.R0086-0].

EX1029, 17.

X. DISCRETIONARY DENIAL IS NOT WARRANTED

A. 35 U.S.C. §314(a) Analysis

Petitioner hereby stipulates that, if IPR of the '852 patent is instituted based on this Petition, Petitioner will not assert in the Parallel Litigation (as defined below) invalidity of any Challenged Claim based on any ground that was raised or that reasonably could have been raised in this Petition. In light of this stipulation, this Petition should not be discretionarily denied pursuant to *Fintiv*. See USPTO Memorandum, Interim Procedure for Discretionary Denials in AIA Post-Grant Proceedings with Parallel District Court Litigation, 2 (June 21, 2022), at 3.

B. 35 U.S.C. §325(d) Analysis

Applying the two-part framework discussed in *Advanced Bionics, LLC v. Med-El Elektromedizinische Gerate GMBH*, IPR2019-01469, Pap. 6, *8–9, the Board should not exercise its §325(d) discretion to deny institution.

With respect to Ground 2, Keller was not considered during prosecution and is not cumulative over any prior art that was considered during prosecution.

Moreover, the examiner made a clear material error in not recognizing that the First Determination Limitation does not have written description support in the '397 Application and, as a result, Shaffer constitutes prior art to the Challenged Claims that, in combination with a reference such as Keller, renders all Challenged Claims obvious. That the examiner did not recognize that the First Determination Limitation does not have written description support is clear from the examiner's further failure to recognize that the Challenged Claims also lack written description support under 35 U.S.C. §112 in the identical specification of the '852 patent.

With respect to Ground 3, none of the references relied on (Chowdhury, OMA-PoC Documents, TR23.979, Jin and TS23.060) were considered during prosecution, and these documents are not cumulative of the references that were considered. To the extent that it is determined that these references are cumulative to the references considered by the examiner, the examiner made a material error by not rejection the '852 patent claims over those references because those claims are unpatentable for the reasons discussed in Ground 3.

Accordingly, discretionary denial under 35 U.S.C. §325(d) is not warranted.

XI. COMPLIANCE WITH FORMAL REQUIREMENTS

A. Mandatory Notices Under 37 C.F.R. §§42.8(b)(1)-(4)

1. Real Party-In-Interest

Motorola Solutions, Inc. is the real party-in-interest.

2. Related Matters

The '852 patent is subject to the following actions: *STA Group LLC v. Motorola Solutions, Inc.*, No. 2:23-cv-00030 (E.D. Tex, Jan. 26, 2023) (“District Court Litigation”), and IPR2024-00479, filed concurrently herewith by the same Petitioner.

3. Lead and Backup Counsel

Lead Counsel	Backup Counsel
James M. Heintz Reg. No. 41828 DLA Piper LLP 11911 Freedom Drive, Suite 300 Reston, VA 20190-5602 Phone: + 1 703 773 4000 Fax: + 1 703 773 5000 Jim.Heintz@us.dlapiper.com	Peter Nelson Reg. No. 77478 DLA Piper LLP (US) 500 Eighth Street, NW Washington, DC 20004 Phone: +1 202 799 4000 Fax: +1 202 799 5000 Peter.Nelson@us.dlapiper.com

4. Service Information

Petitioner consents to electronic service at
dla_msi_sta_iprs@us.dlapiper.com with copies to the email addresses for lead and
backup counsel designated above.

B. Proof of Service on the Patent Owner

In accordance with 37 C.F.R. §§42.6(e) and 42.105, as identified in the attached Certificate of Service, a copy of this Petition in its entirety is being served electronically to the Patent Owner's attorney of record, as well as on counsel for Patent Owner in the District Court Litigation.

C. Power of Attorney

Powers of attorney are being filed with designation of counsel in accordance with 37 C.F.R. §41.10(b).

D. Standing

In accordance with 37 C.F.R. §42.104(a), Petitioner certifies that the '852 patent is available for *inter partes* review and that Petitioner is not barred or estopped from requesting an *inter partes* review challenging the patent claims on the grounds identified in this Petition.

E. Fees

The undersigned authorizes the Director to charge the fee specified by 37 C.F.R. §42.15(a) and any additional fees that might be due in connection with this Petition to Deposit Account No. [50-3266].

XII. CONCLUSION

All Challenged Claims of the '852 patent should be found unpatentable for the reasons discussed in this Petition.

Date: January 30, 2024	Respectfully submitted, <u>/s/ James M. Heintz</u> James M. Heintz Reg. No. 41,828 DLA Piper LLP One Fountain Square 11911 Freedom Drive, Suite 300 Reston, VA 20190-5602 Phone: + 1 703 773 4000 Fax: + 1 703 773 5000 jim.heintz@us.dlapiper.com <i>Attorney for Petitioner, Motorola Solutions, Inc.</i>
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CERTIFICATE OF WORD COUNT

Pursuant to 37 C.F.R. §42.24(d), Petitioner certifies that this petition includes 13,954 words, as measured by Microsoft Word, exclusive of the table of contents, mandatory notices under §42.8, certificates of service, word count, claim listing, and exhibits.

Date: January 30, 2024	<u>/s/ James M. Heintz</u> James M. Heintz Reg. No. 41,828 DLA Piper LLP One Fountain Square 11911 Freedom Drive, Suite 300 Reston, VA 20190-5602 Phone: + 1 703 773 4000 Fax: + 1 703 773 5000 jim.heintz@us.dlapiper.com <i>Attorney for Petitioner, Motorola Solutions, Inc.</i>
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CERTIFICATE OF SERVICE

The undersigned certifies pursuant to 37 C.F.R. §§42.6(e) and 42.105 that on January 30, 2024, a true and correct copy of this Petition for *Inter Partes* Review of U.S. Patent No. 9,319,852 was served by emailing a copy of same (by agreement) to the following attorneys for the Patent Owner:

KLK-STA-Motorola@klgates.com

A courtesy copy was sent to the below counsel via electronic mail:

Brenna.Legaard@klgates.com

Respectfully submitted,

/s/ James M. Heintz