

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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APPLE INC.,  
Petitioner,

v.

UNILOC 2017 LLC,  
Patent Owner.

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IPR2019-00700  
Patent 8,406,116 B2

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Before SALLY C. MEDLEY, JEFFREY S. SMITH, and  
JOHN F. HORVATH, *Administrative Patent Judges*.

MEDLEY, *Administrative Patent Judge*.

JUDGMENT  
Final Written Decision  
Determining All Challenged Claims Unpatentable  
*35 U.S.C. § 318(a)*

## I. INTRODUCTION

Apple Inc. (“Petitioner”) filed a Petition for *inter partes* review of claims 1–20 of U.S. Patent No. 8,406,116 B2 (Ex. 1001, “the ’116 patent”). Paper 1 (“Pet.”). Uniloc 2017 LLC (“Patent Owner”) filed a Preliminary Response. Paper 6 (“Prelim. Resp.”). Upon consideration of the Petition and Preliminary Response, we instituted *inter partes* review, pursuant to 35 U.S.C. § 314, as to claims 1–20 based on all challenges set forth in the Petition. Paper 7 (“Decision to Institute” or “Dec.”).

Subsequent to institution, Patent Owner filed a Patent Owner Response (Paper 9, “PO Resp.”), Petitioner filed a Reply to Patent Owner’s Response (Paper 10, “Pet. Reply”), and Patent Owner filed a Sur-reply (Paper 11, “Sur-reply”). On May 21, 2020, we held an oral hearing. A transcript of the hearing is of record. Paper 16 (“Tr.”).

In our Scheduling Order, we notified the parties that “any arguments not raised in the [Patent Owner] response may be deemed waived.” *See* Paper 8, 7; *see also* Office Patent Trial Practice Guide, 77 Fed. Reg. 48,756, 48,766 (Aug. 14, 2012) (“The patent owner response . . . should identify all the involved claims that are believed to be patentable and state the basis for that belief.”). Patent Owner argues that it “does not concede, and specifically denies, that there is any legitimacy to any arguments in the instant Petition that are not specifically addressed” in its Patent Owner Response. PO Resp. 17 n.7. We decline to speculate as to what arguments Patent Owner considers illegitimate in the Petition. Any arguments for patentability not raised in the Patent Owner Response are deemed waived.

For the reasons that follow, we conclude that Petitioner has proven by a preponderance of the evidence that claims 1–20 of the ’116 patent are unpatentable.

*A. Related Matters*

Petitioner and Patent Owner identify *Uniloc USA, Inc., et al. v. Apple Inc.*, Case No. 1:18-cv-00166-LY (W.D. Tex.) as related to the issues presented in this proceeding. Pet. 1; Paper 4, 2.

Petitioner additionally filed proceedings challenging related patents belonging to Patent Owner (which we instituted): IPR2019-00701 (U.S. Patent No. 8,018,877 B2) and IPR2019-00702 (U.S. Patent No. 7,969,925 B2). Pet. 1–2.

*B. The '116 Patent<sup>1</sup>*

The '116 patent is directed to methods and a server-based architecture for establishing data exchange between multiple mobile devices. Ex. 1001, code (57). According to the Specification, several instant messaging (“IM”) paradigms have been developed to take advantage of the growing IM market. *Id.* at 1:31–65. However, each of those paradigms are limited by system compatibility (*id.* at 1:39–44), or the failure to allow for real-time communication between more than two mobile devices. *Id.* at 1:66–2:5. Accordingly, the invention addresses these problems by creating (1) a session-based IM architecture and (2) data transfer techniques for establishing data exchange between multiple mobile devices. *Id.* at 2:22–25.

An example of a digital mobile network system is illustrated in Figure 1, reproduced below:

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<sup>1</sup> Petitioner argues that the effective filing date of the '116 patent is no earlier than March 28, 2005. Pet. 8–10. For purposes of this Decision, we need not determine the effective filing date of the '116 patent.

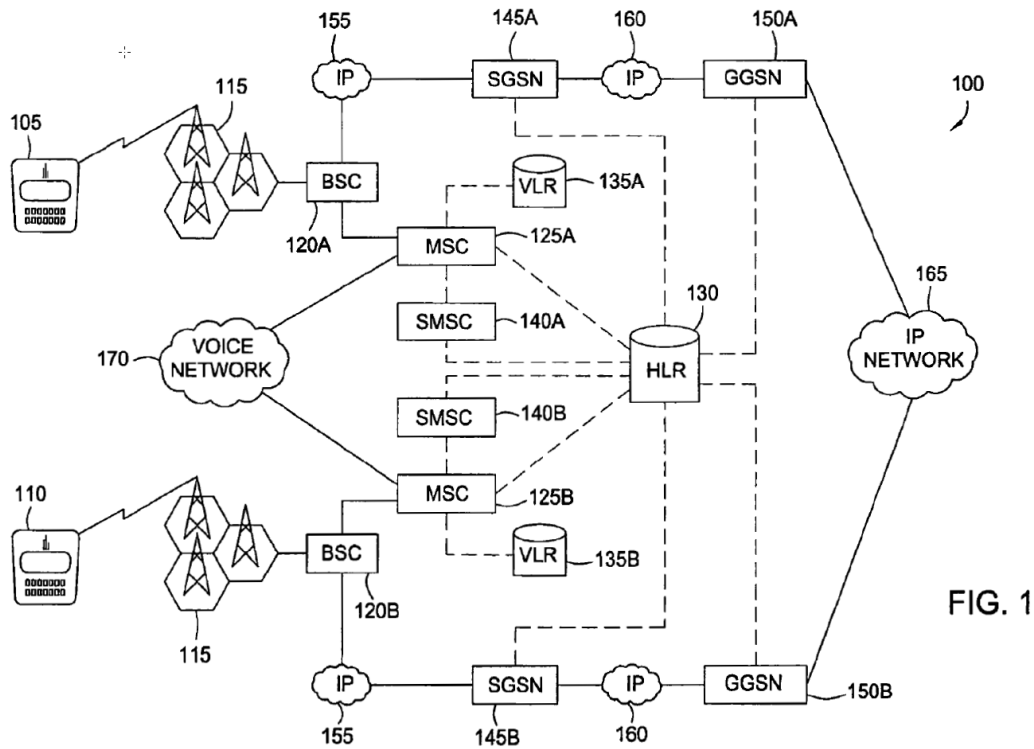


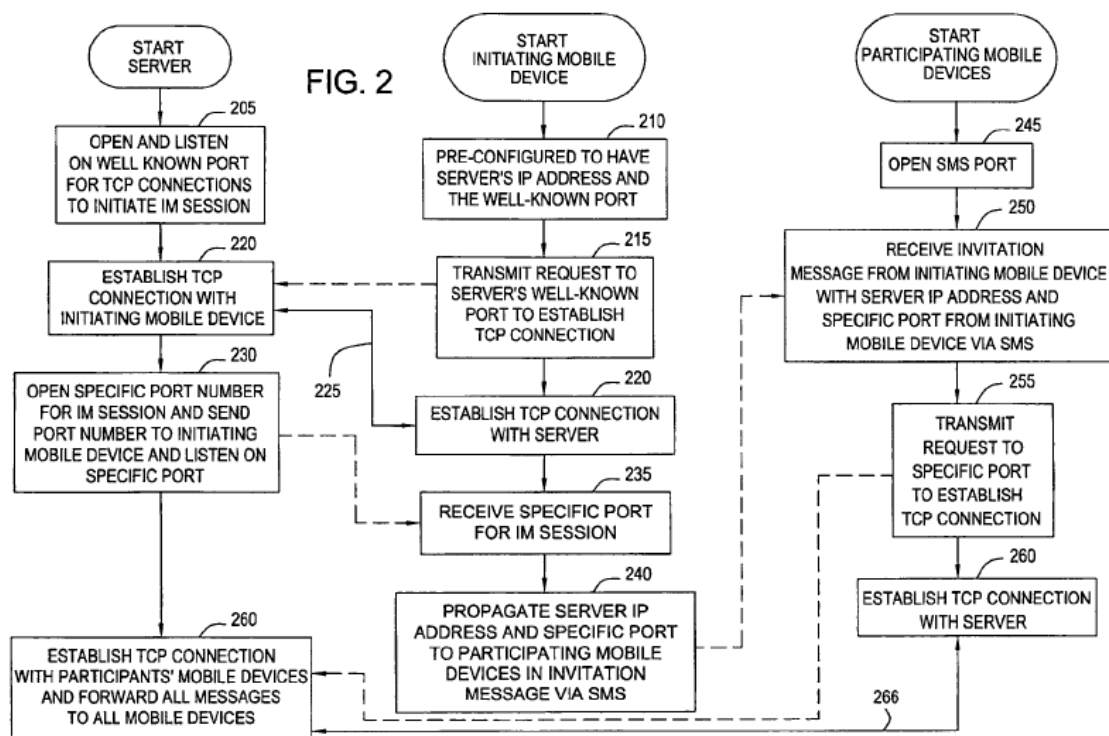
FIG. 1

Figure 1 is a diagram of a Global System for Mobile communications (GSM) mobile networking system 100 including a first mobile device 105 and a second mobile device 110. *Id.* at 2:64–3:5. As disclosed in the Specification, each of the mobile devices 105 and 110 includes a Subscriber Information Module (SIM) card that contains unique identification information that enables the GSM system 100 to locate the mobile devices within the network and route data to them. *Id.* at 3:1–5. The Specification further discloses that the GSM system 100 supports a page-mode messaging service, such as Short Message Service (SMS), that relies upon the underlying GSM mechanisms to resolve routing information in order to locate destination mobile devices. *Id.* at 3:42–46; *see also id.* at 3:57–4:4 (describing a typical transmission of an SMS text message from the initiating mobile device 105 to the receiving mobile device 110).

Generally, the invention initiates data exchange between multiple mobile devices by first receiving, at a server, a request from the initiating

mobile device to allocate a session identifier to use for data exchange. *Id.* at 2:25–40. Once the session identifier has been allocated, the server transmits the session identifier to the initiating mobile device, whereupon the initiating mobile device communicates the session identifier to the participating mobile device. *Id.* Once the initiating mobile device and participating mobile device have the session identifier, the session identifier is used to establish a connection at the server, whereby data exchange is facilitated. *Id.*

Figure 2, reproduced below, illustrates a flow chart depicting one embodiment of a server-based architecture in accordance with the present invention:



In Figure 2, the server, having a publically accessible network address, opens and listens for mobile device connection requests on a well-known port. *Id.* at 4:40–51. After receiving a connection request from an initiating mobile device, the server establishes a connection with the initiating mobile

device 220. *Id.* at 4:60–63. The server also allocates and opens a specific network port number for the IM session and transmits this information to the initiating mobile device 230. *Id.* at 4:64–66. Initiating mobile device 230 sends the server’s network address and port number in an invitation message to other mobile devices through a page-mode messaging service such as SMS. *Id.* at 5:3–9. The invited mobile devices can use this information to request a server connection in the event they wish to join the IM session. *Id.* at 5:16–21. As illustrated in box 260, the server can establish connections with mobile devices requesting participation in the IM session, and monitors all connections in addition to forwarding all messages between participating mobile devices. *Id.* at 5:20–31.

### *C. Illustrative Claims*

Petitioner challenges claims 1–20 of the ’116 patent. Claims 2–7 depend either directly or indirectly from independent claim 1; claims 9–14 depend either directly or indirectly from independent claim 8; and claims 16–20 depend either directly or indirectly from independent claim 15.

Claims 1<sup>2</sup> and 15 are reproduced below:

1. A method of initiating a data exchange session among mobile devices, the method comprising:

receiving, at a server, a request from an initiating mobile device to allocate a session identifier to use in a data exchange session with a participating mobile device, wherein the session identifier comprises a network port number of the server;

transmitting, from the server, the session identifier to the initiating mobile device, wherein the initiating mobile device uses a page-mode messaging service to assist in communicating the session identifier to the participating mobile device and

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<sup>2</sup> Independent claims 1 and 8 have similar limitations, and for purposes of this decision, claim 1 is illustrative of claim 8.

wherein the page-mode messaging service utilizes a unique identifier to locate the participating mobile device;

establishing, at the server, connections with the initiating mobile device and the participating mobile device based on the session identifier; and

facilitating, at the server, the data exchange session between the initiating mobile device and the participating mobile device.

Ex. 1001, 8:20–40.

15. A server configured to facilitate a data exchange session among mobile devices, the server comprising:

an input port to receive a request from an initiating mobile device to allocate a session identifier to use in a data exchange session with a participating mobile device, wherein the session identifier comprises a network port number of the server; and

an output port to transmit the session identifier to the initiating mobile device, wherein the initiating mobile device uses a page-mode messaging service to assist in communicating the session identifier to the participating mobile device and wherein the page-mode messaging service utilizes a unique identifier to locate the participating mobile device; and

a computer for:

establishing connections with the initiating mobile device and the participating mobile device based on the session identifier; and

facilitating the data exchange session between the initiating mobile device and the participating mobile device.

Ex. 1001, 9:36–10:18.

*D. Instituted Grounds of Unpatentability*

We instituted trial based on all asserted grounds of unpatentability under 35 U.S.C.<sup>3</sup> as follows (Dec. 7–8, 30):

| <b>Claim(s) Challenged</b> | <b>35 U.S.C. §</b> | <b>Reference(s)/Basis</b>                   |
|----------------------------|--------------------|---------------------------------------------|
| 1–20                       | 103(a)             | Kirmse <sup>4</sup> , Chambers <sup>5</sup> |
| 1–20                       | 103(a)             | Chambers, RSIP <sup>6</sup>                 |
| 1–3, 5–10, 12–17, 19, 20   | 103(a)             | Cordenier <sup>7</sup> , TURN <sup>8</sup>  |

II. ANALYSIS

*A. Principles of Law*

To prevail in its challenges to Patent Owner’s claims, Petitioner must demonstrate by a preponderance of the evidence<sup>9</sup> that the claims are unpatentable. 35 U.S.C. § 316(e) (2012); 37 C.F.R. § 42.1(d) (2018). A

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<sup>3</sup> The Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (“AIA”), amended 35 U.S.C. §§ 102 and 103. Because the ’116 patent has an effective filing date before the effective date of the applicable AIA amendments, we refer to the pre-AIA versions of 35 U.S.C. §§ 102 and 103.

<sup>4</sup> U.S. Patent No. 6,669,125 B2, issued Mar. 2, 2004 (Ex. 1005, “Kirmse”).

<sup>5</sup> U.S. Patent Application Pub. No. U.S. 2003/0142654 A1, published July 31, 2003 (Ex. 1006, “Chambers”).

<sup>6</sup> Realm Specific IP: Protocol Specification, RFC 3103, published by IETF no later than Oct. 2001, and Declaration of Sandy Ginoza (Ex. 1013, “RSIP”).

<sup>7</sup> European Patent Application Publication No. EP 1 385 323 A1, published Jan. 28, 2004 (Ex. 1007, “Cordenier”).

<sup>8</sup> Draft-rosenberg-midcom-turn-00, Traversal Using Relay NAT, published by IETF no later than November 14, 2001, and Declaration of Alexa Morris (Ex. 1009, “TURN”).

<sup>9</sup> The burden of showing something by a preponderance of the evidence requires the trier of fact to believe that the existence of a fact is more probable than its nonexistence before the trier of fact may find in favor of the party who carries the burden. *Concrete Pipe & Prods. of Cal., Inc. v. Constr. Laborers Pension Tr. for S. Cal.*, 508 U.S. 602, 622 (1993).

patent claim is unpatentable under 35 U.S.C. § 103(a) 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 at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *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 ordinary skill in the art; and (4) when in evidence, objective evidence of nonobviousness.<sup>10</sup> *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

#### *B. Level of Ordinary Skill*

In determining the level of ordinary skill in the art, various factors may be considered, including the “type of problems encountered in the art; prior art solutions to those problems; rapidity with which innovations are made; sophistication of the technology; and educational level of active workers in the field.” *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995) (citation omitted). Petitioner relies on the testimony of Dr. Henry Houh, who testifies that a person with ordinary skill in the art would have had “a Bachelors’ degree in computer science or a comparable field of study, plus approximately two to three years of professional experience with cellular phone and IP networks, or other relevant industry experience.” Pet. 11 (citing Ex. 1002 ¶ 42). Dr. Houh further testifies that additional graduate education could substitute for professional experience, and significant

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<sup>10</sup> Patent Owner does not present any objective evidence of nonobviousness as to the challenged claims.

experience in the field could substitute for formal education. Ex. 1002 ¶ 42. Patent Owner does not propose an alternative assessment. PO Resp. 3–4.

We adopt Dr. Houh’s assessment of a person with ordinary skill in the art as it is consistent with the ’116 patent and the asserted prior art. We further note that the prior art of record in the instant proceeding reflects the appropriate level of ordinary skill in the art. *Cf. Okajima v. Bourdeau*, 261 F.3d 1350, 1354–55 (Fed. Cir. 2001) (holding the Board may omit specific findings as to the level of ordinary skill in the art “where the prior art itself reflects an appropriate level and a need for testimony is not shown”).

### *C. Claim Construction*

In an *inter partes* review for a petition filed on or after November 13, 2018, “[claims] of a patent . . . shall be construed using the same claim construction standard that would be used to construe the [claims] in a civil action under 35 U.S.C. § 282(b), including construing the [claims] in accordance with the ordinary and customary meaning of such claims as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent.” *See* Changes to the Claim Construction Standard for Interpreting Claims in Trial Proceedings Before the Patent Trial and Appeal Board, 83 Fed. Reg. 51,340, 51,358 (Oct. 11, 2018) (amending 37 C.F.R. § 42.100(b) effective November 13, 2018) (now codified at 37 C.F.R. § 42.100(b) (2019)); *see also Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–14 (Fed. Cir. 2005).

For purposes of this Decision, we need not expressly construe any claim term. *See Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) (holding that “only those terms need be construed that are in controversy, and only to the extent necessary to resolve the

controversy”); *see also* *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co. Matal*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (citing *Vivid Techs.* in the context of an *inter partes* review).

*D. Asserted Obviousness of Claims 1–20 over Chambers and RSIP*

Petitioner contends claims 1–20 are unpatentable under 35 U.S.C. § 103(a) as obvious over Chambers and RSIP. Pet. 37–53. In support of its showing, Petitioner relies upon the declaration of Dr. Houh. *Id.* (citing Ex. 1002 ¶¶ 82–114).

*1. Chambers*

Chambers describes a method and communication system for a plurality of users, in which an invitation message that includes an IP address is sent from one user to a plurality of other users who accept and reply to the invitation message to initiate a chat session. Ex. 1006, code (57). Figure 2 illustrates a flow diagram of a preferred embodiment of a method of providing a communication session in accordance with the principles of Chambers’s invention. *Id.* ¶ 26.

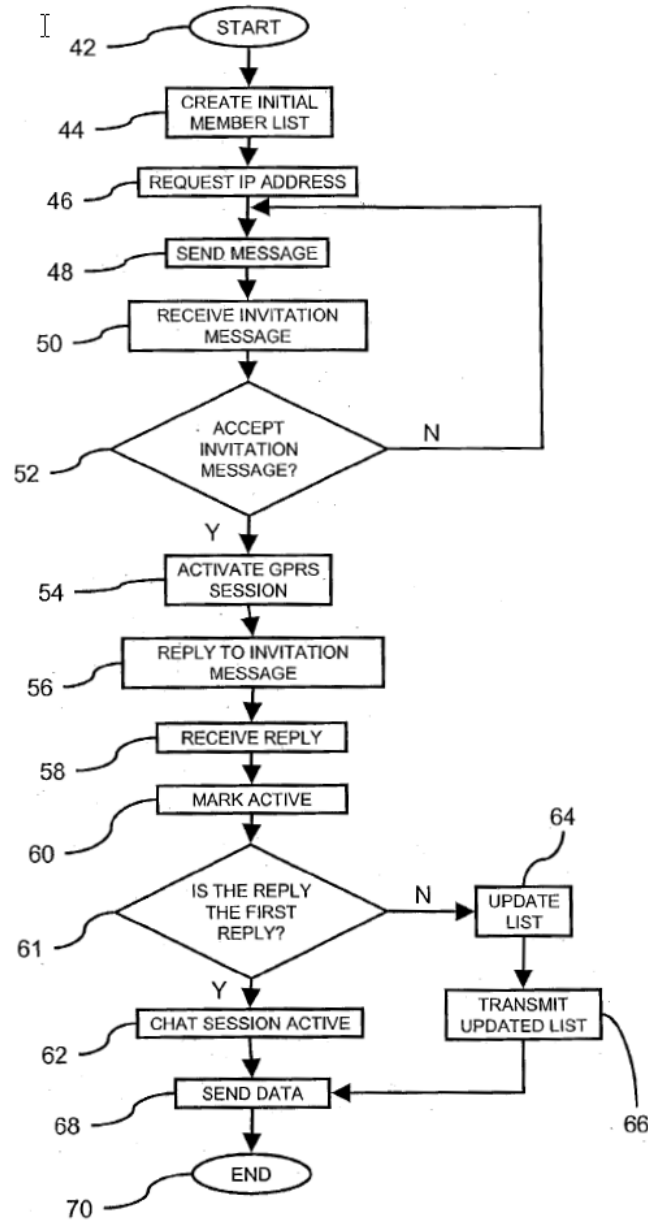


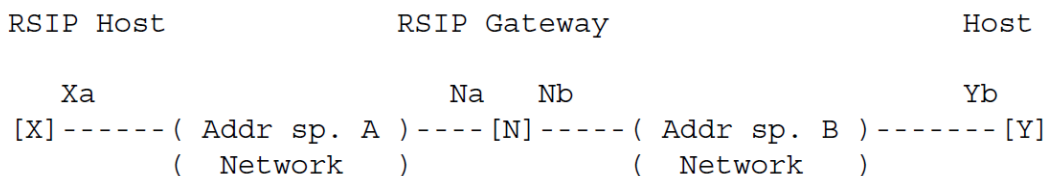
FIGURE 2

Specifically, as illustrated in Figure 2, in a preferred embodiment, a user of an initiator terminal creates a member list 44, after which an IP address for the initiator terminal is requested 46. *Id.* ¶¶ 27–29. After the IP address is requested, the user sends an invitation message, in the form of a SMS-message, to the member list 48, and once the SMS-message is received 50, each member can decide whether to accept the message 52. *Id.* ¶¶ 30–33.

Upon accepting the invitation, an invited member activates a GPRS session 54, which can include requesting an IP address, and sends a reply to the invitation message 56. *Id.* ¶¶ 34–35. After receiving the reply 58, the initiating terminal marks the replying member as active 60, and if the reply is a first reply 61, activates the chat session 62, after which any active member can send data 68 to other active members. *Id.* ¶¶ 37–39, 43. If at step 61, the reply is not a first reply, then the active member list is updated 64 to indicate the IP addresses of all active members, and the active member list is transmitted 66 to all active members. *Id.* ¶¶ 47–48. The chat session ends when the initiating terminal sends a “TERMINATE” message to the active session. *Id.* ¶ 46.

## 2. RSIP

RSIP (Realm Specific IP) is a technical specification that describes a method for assigning parameters to an RSIP Host from an RSIP Gateway. Ex. 1013, 5.<sup>11</sup> RSIP describes a method for address sharing that allows a host having an IP address in a first network address space to request allocation of a second IP address in a second network address space from an RSIP Server. *Id.* at 7. On page 10 of RSIP is a diagram, which is reproduced below:



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<sup>11</sup> Petitioner cites to the page numbers added by Petitioner in the lowest right corner. We cite to the same.

In this illustration, host X belongs to first network addressing realm A; host Y belongs to second network addressing realm B; and N is an RSIP Gateway. *Id.* at 10. In order to establish a connection between host X and host Y, host X negotiates and obtains an assignment of resources from the RSIP Gateway (i.e., a network address and port number in addressing realm B). *Id.* (disclosing gateway “N may have a pool of addresses in address space B which it can assign to or lend to X”); *see also id.* at 9 (defining a resource as “an item that an RSIP host leases from an RSIP gateway; e.g., an address or port”). Upon assignment of these resources, the RSIP Gateway creates a mapping of X’s addressing information in addressing realm A and the assigned resources (i.e., the network address and port number for X in addressing realm B). *Id.* at 10. This enables RSIP Gateway to correctly demultiplex and forward inbound traffic generated by Y for X. *Id.* RSIP describes an “RSIP Server” as an application program that performs the server portion of the RSIP client/server protocol, and indicates that an RSIP Server exists on all RSIP Gateways. *Id.* at 10.<sup>12</sup>

### 3. Discussion

Claim 1 recites a “method of initiating a data exchange session among mobile devices.”<sup>13</sup> Petitioner contends, and we agree, that Chambers in combination with RSIP describes a method of initiating a data exchange session (chat session) among mobile devices (mobile phones) via an RSIP

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<sup>12</sup> Petitioner refers to the RSIP Gateway running an RSIP Server, collectively as the “RSIP Server.” Pet. 38. Patent Owner appears to do the same (PO Resp. 10) as do we.

<sup>13</sup> We need not resolve the issue of whether the preamble is limiting because, regardless of whether the preamble is limiting, Petitioner shows that the combination of Chambers and RSIP meets the preamble.

Server. Pet. 42 (citing showing for limitations 1.a–1.e; Ex. 1006, Figs. 1–2, ¶¶ 22, 26–39; Ex. 1013, 8–9). Patent Owner does not dispute Petitioner’s showing with respect to the preamble. *See generally* PO Resp.

Claim 1 further recites “receiving, at a server, a request from an initiating mobile device to allocate a session identifier to use in a data exchange session with a participating mobile device, wherein the session identifier comprises a network port number of the server.” Petitioner contends, and we agree, that Chambers describes a server (stationary server) receiving a request from an initiating mobile device (inviter’s phone) to allocate an IP address to use in a data exchange session (chat session) with a participating mobile device (invitee’s phone). Pet. 43 (citing Ex. 1006 ¶ 29, Fig. 2 (step 46); Ex. 1002 ¶ 93). Petitioner further contends, and we agree, that RSIP describes that an RSIP Server receives a request from an initiating device (RSIP Host) to allocate a session identifier (public IP address and port number of the RSIP Server) to use in a data exchange session with participating devices. *Id.* at 43–44, 53 (citing Ex. 1013, 5, 8–10, 16–17, 22, 27–30, 36–39, 45, 49–51; Ex. 1002 ¶¶ 93–95, 114). In essence, Petitioner proposes replacing Chambers’s server with the RSIP Server. *Id.* at 44. Notwithstanding Patent Owner’s arguments that the RSIP Server does not allocate a session identifier including a network port number of the RSIP Server, which we address below, we are persuaded that Petitioner has shown, by a preponderance of evidence that Chambers combined with RSIP meets this limitation.

Patent Owner argues that “neither Chambers nor RSIP disclose the required receiving at a server, a request from a mobile device to **allocate** a session identifier, comprising a network port number **of the server.**” PO Resp. 8–9 (emphasis in original). Although Patent Owner agrees that RSIP

describes that the RSIP Server controls its own local addresses and ports, Patent Owner argues that such description does not mean that the RSIP Server allocates a session identifier comprising the RSIP Server's addresses and ports to other devices. *Id.* at 10. Patent Owner further argues that RSIP describes that the ASSIGN\_RESPONSE\_RSAP-IP<sup>14</sup> message is used by an RSIP Server *to deliver parameter assignments to an RSIP Host*, but such description “does not specify whether the parameters refer to server ports or local ports of the mobile devices.” *Id.* Patent Owner further argues, referencing pages 12–17 of its Preliminary Response<sup>15</sup>, that the descriptions related to the ASSIGN\_REQUEST\_RSAP-IP message indicate that such message “contains two address and port parameters, one for the RSIP Host itself (a.k.a. a mobile device), or the local address and port(s), and the second of each to refer to the *remote* address and port(s) ***that will be contacted.***” *Id.* (emphasis in original); *see also* Sur-reply 10–11. Patent Owner argues that “[n]othing in RSIP would cause a POSITA to interpret ‘local’ to mean anything other than a port of the particular device being

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<sup>14</sup> Petitioner alleges an RSIP Host requests a session identifier (i.e., an IP address and port number) from an RSIP Server by sending an ASSIGN\_REQUEST\_RSAP-IP message to the RSIP Server, and receives the requested IP address and port number from the RSIP Server in an ASSIGN\_RESPONSE\_RSAP-IP message. *See* Pet. 43, 45.

<sup>15</sup> To the extent that Patent Owner is attempting to incorporate by reference arguments made in the Preliminary Response, such incorporation is prohibited. 37 C.F.R. § 42.6(a)(3) (2018) (“[a]rguments must not be incorporated by reference from one document into another document”). We decline to consider whatever Patent Owner considers is “incorporated” from its Preliminary Response as if it were a part of Patent Owner’s Response or Sur-reply, but fully consider arguments substantively presented in Patent Owner’s Response and Sur-reply. *See* Paper 8, 7.

discussed.” Sur-reply 13. We are not persuaded by Patent Owner’s arguments.

RSIP describes, under the header “RSAP-IP: Realm Specific Address IP and Port IP,” that RSAP-IP is an RSIP method in which *each RSIP host is allocated an IP address and some number of per-address unique ports from the public realm*. Ex. 1013, 9; *see also id.* at 8 (defining an RSIP Host as a host that *acquires publicly unique parameters from an RSIP Server*)). RSIP further describes that an RSIP Gateway “must maintain [a] state for all RSIP hosts and their *assigned resources*,” and under the header “RSAP-IP State,” indicates the minimum state the RSIP Gateway MUST maintain is each RSIP Host’s private address, *assigned public address(es)*, and *assigned port(s) per address*. *Id.* at 14 (emphases added).

The RSIP Server connects the public and private realms and contains interfaces to both. *Id.* at 10. RSIP refers to the private realm as using private IP addresses from the ranges (10.0.0.0/8, 172.16.0.0/12, 192.168.0.0/16). *Id.* at 8; *see also* Ex. 1017, 8 (indicating the Internet Assigned Numbers Authority (IANA) has reserved three blocks of the IP address space for private internets). RSIP further describes that the RSIP Server has a pool of public IP addresses “*which it can assign to or lend to X and other hosts*.” Ex. 1013, 10. RSIP also describes a “resource” as a way to refer to an item that an “RSIP host leases from an RSIP gateway; e.g., an address or port.” *Id.* at 9. In light of such descriptions, we find that the examples spanning RSIP pages 49–51 (discussed in detail below) support Petitioner’s contention that the RSIP Server receives a request from an initiating device (RSIP Host) to allocate a session identifier (public IP address and port number of the RSIP Server) to use in a data exchange

session with participating devices. Pet. 43–44, 53 (citing Ex. 1013, 5, 8–10, 16–17, 22, 27–30, 36–39, 45, 49–51; Ex. 1002 ¶¶ 93–95, 114).

Patent Owner does not contest that RSIP describes that the RSIP Server has the ability to explicitly control (e.g., allocate) which local addresses and ports are used to communicate with remote addresses and ports (PO Resp. 12) and that the local addresses and ports referred to on page 12 of RSIP are the RSIP Server’s “own local addresses and ports.” *Id.* at 10. Rather, Patent Owner contends that RSIP’s description of the “local” addresses and ports returned by an RSIP server in an ASSIGN\_RESPONSE\_RSAP-IP message has not been shown to be those of the RSIP Server, but rather are those of “the mobile devices.” *Id.*

The pertinent portion from RSIP that Patent Owner refers to is reproduced below:

C --> S: ASSIGN\_REQUEST\_RSAP-IP: (Client ID = 1, Address (local) = 0, Ports (local) = 4-0, Address (remote) = 0, Ports (remote) = 0, Lease Time = 3600)

The host requests an address and four ports to use with it, but doesn’t care which address or ports are assigned. The host does not specify the remote address or ports either. The host suggests a lease time of 3600 seconds.

S --> C: ASSIGN\_RESPONSE\_RSAP-IP: (Client ID = 1, Bind ID = 1, Address (local) = 149.112.240.156, Ports (local) = 4-1234, Address (remote) = 0, Ports (remote) = 0, Lease Time = 1800, Tunnel Type = IP-IP)

The gateway responds by indicating that a bind ID of 1 has been assigned to IP address 149.112.240.156 with ports 1234-1237. Any remote host may be communicated with, using any remote port number. The lease time has been assigned to be 1800 seconds, and the tunnel type is confirmed to be IP-IP.

The host is now able to communicate with any host on the public network using these resources.

Ex. 1013, 50. RSIP further describes an example where the host requests eight more particular ports for use with RSAP-IP with the same address. *Id.* at 51. The gateway grants the request with the same address of 149.112.240.156, but with a different set of ports. *Id.* We agree with Petitioner that these described RSIP examples establish that the “local address and ports” referred to in the description of the requests and responses are the public IP address and ports of the RSIP Server. Pet. Reply 10. In particular, we give substantial weight to Dr. Houh’s testimony that the “public IP address [local] 149.112.240.156 is not a private address of the host.” Ex. 1025 ¶ 8 (citing Ex. 1013, 8).<sup>16</sup> Specifically, RSIP defines the private addresses in the host’s private address realm, which do not include address 149.112.240.156. Ex. 1013, 8; *see also* Ex. 1017, 8. This evidence

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<sup>16</sup> We disagree with Patent Owner that Petitioner’s Reply and Dr. Houh’s Reply Declaration (Ex. 1025) are improper. Sur-reply 8–9, 11–12. Petitioners are not prohibited from relying on new evidence and arguments in a reply, if the evidence and arguments are responsive to arguments made in a patent owner response. *See* 37 C.F.R. 42.23(b); Consolidated Trial Practice Guide, 73 (available at <https://www.uspto.gov/TrialPracticeGuideConsolidated>). Here, Petitioner could not have anticipated Patent Owner’s unfounded assertion that RSIP’s reference to “local” must be construed in relation to the particular device that is being discussed. PO Rep. 10 (arguing about “local ports of the mobile device” when RSIP never describes “local ports of the mobile devices”); Sur-reply 10. We determine that Petitioner’s Reply and Dr. Houh’s Reply Declaration (Ex. 1025) are proper and wholly responsive to arguments Patent Owner makes. Moreover, Patent Owner could have cross-examined Dr. Houh, but did not do so at any point in the trial. Nor did Patent Owner request to submit new testimony in support of its Sur-reply.

supports a finding that when RSIP refers to “local” address and ports it is describing the IP address and ports that are the public IP address and ports (resources) of the RSIP Server. *Id.*; Pet. Reply 8–9 (“RSIP refers to the public IP address and ports owned and controlled by the RSIP Server (which it allocates, assigns, and leases to the host) as the ‘local’ address and ports, the ‘local’ parameters, or a ‘Resource’”) (citing Ex. 1013, 8–10; Pet. 43–45; Ex. 1002 ¶¶ 94–98)); *see also* Ex. 1025 ¶ 7.

On the other hand, Patent Owner directs attention to “9.8.1” of RSIP in support of its argument that a person having ordinary skill in the art “would understand that when a reference is discussing ports in relation to a plurality of devices, the term ‘local’ must be construed in relation to the particular device that is being discussed.” Sur-reply 10. Patent Owner does not direct us to where in RSIP there is support for the assertion that “local” refers to the particular device that is being described. The section to which we are directed does not so state. Rather, the section that Patent Owner argues supports its position describes the ASSIGN\_REQUEST\_RSAP-IP message as a message used by an RSIP host to request “resources” to use with RSAP-IP. Ex. 1013, 27. Although the message does include “local” address and port fields, RSIP indicates these fields are used by an RSIP Host to *request* a “local address” and a “local port” from the RSIP Server. *Id.* at 28 (“An RSIP host may *request a particular local address* by placing that address in the value field of the first address parameter. The RSIP host may *request particular local ports* by placing them in the first port parameter.” (emphases added)). If the RSIP Server cannot allocate the requested “local address” and “local port” to the RSIP Host (e.g., because they are being used), the RSIP Server MUST return an error message. *Id.* at 29 (“If the RSIP gateway cannot allocate a requested address / port tuple because it is in

use, the RSIP gateway MUST respond with an ERROR\_RESPONSE containing the LOCAL\_ADDRPORT\_INUSE error.”). As explained above, RSIP defines a resource as a “way to refer to an item that an RSIP host leases *from an RSIP gateway; e.g., an address or port.*” *Id.* at 9. Moreover, RSIP describes RSAP-IP as an RSIP method in which *each RSIP host is allocated an IP address and unique ports from the public realm.* *Id.* The RSIP Server connects the public and private realms and contains interfaces to both. *Id.* at 10.

When read in a reasonable light, we find that RSIP’s description of the RSAP-IP message from the RSIP host specifying “the local address and port(s) that will be used” (*id.* at 27) refers to the public address and ports of the RSIP Server as we explain above. We give little to no weight to Patent Owner’s argument that the term “local” must be construed in relation to the particular device that is being discussed. Sur-reply 10. Patent Owner directs us to no evidence in support of its assertions as to what a person having ordinary skill in the art would have known at the time of the invention. *See Estee Lauder Inc. v. L'Oreal, S.A.*, 129 F.3d 588, 595 (Fed. Cir. 1997) (argument of counsel cannot take the place of evidence lacking in the record). For all of the above reasons, we are persuaded that the combination of Chambers and RSIP meets “receiving, at a server, a request from an initiating mobile device to allocate a session identifier to use in a data exchange session with a participating mobile device, wherein the session identifier comprises a network port number of the server.”

Petitioner provides sufficient reasons to combine Chambers and RSIP. Pet. 38–41. For example, Petitioner explains, and we agree, that it would have been obvious to a person having ordinary skill in the art to add RSIP’s NAT traversal techniques to Chambers to obtain the benefits of using less

scarce private IP addresses. *Id.* at 39 (citing Ex. 1006 ¶¶ 27, 36; Ex. 1013, 7; Ex. 1002 ¶ 87). Petitioner argues that adding NAT traversal functionality like RSIP was within the skill of a person having ordinary skill in the art. *Id.* at 40. Petitioner argues, and we agree, that a person having ordinary skill in the art would have had a reasonable expectation of success in adding RSIP's NAT traversal functionality to Chambers, because the initiating phone of Chambers would only need a slight software modification to request an IP address and port number from the RSIP Server. *Id.* at 40–41 (citing Ex. 1002 ¶ 90). We determine that it would have been obvious to combine Chambers with RSIP for the reasons Petitioner provides. Patent Owner does not dispute Petitioner's showing with respect to the reasons for combining Chambers with RSIP. *See generally* PO Resp.

Claim 1 further recites “transmitting, from the server, the session identifier to the initiating mobile device.” Petitioner contends, and we find, that Chambers describes transmitting from the stationary server the requested IP address to the initiating mobile phone. Pet. 44 (citing Ex. 1006 ¶ 29, Fig. 2 (step 46); Ex. 1002 ¶ 96). Petitioner further contends, and we agree, that RSIP describes transmitting from the RSIP Server the session identifier, comprising an IP address and port number, to the RSIP Host. *Id.* at 45 (citing Ex. 1013, 5, 10, 16–17, 30–31, 45, 49–51; Ex. 1002 ¶ 97). We agree with Petitioner that it would have been obvious to a person having ordinary skill in the art to combine Chambers and RSIP such that the RSIP Server transmits the session identifier (the requested public IP address and port in ASSIGN\_RESPONSE\_RSIP-IP) to the initiating mobile device. *Id.* (citing Ex. 1002 ¶ 98). Patent Owner does not dispute Petitioner's showing with respect to this limitation. *See generally* PO Resp.

Claim 1 also recites “wherein the initiating mobile device uses a page-mode messaging service to assist in communicating the session identifier to the participating mobile device and wherein the page-mode messaging service utilizes a unique identifier to locate the participating mobile device.” Petitioner contends, and we find, that Chambers describes that the initiating mobile phone uses a page-mode messaging service (SMS) to assist in communicating the session identifier to the participating mobile phones, where the SMS utilizes a unique identifier (telephone number) to locate the participating mobile phones. Pet. 45–46 (citing Ex. 1006, Fig. 2 (step 48), ¶¶ 28, 30–32; Ex. 1002 ¶ 99). Petitioner further contends, and we agree, that RSIP “teaches that the RSIP host (initiating device) may use the session identifier (the requested public IP address and port) to communicate with remote hosts without explicitly notifying the gateway.” *Id.* at 46 (citing Ex. 1013, 13; Ex. 1002 ¶ 100). We agree with Petitioner that it would have been obvious to a person having ordinary skill in the art to combine Chambers and RSIP such that the Chambers SMS invitation message includes the public IP address and port number of the RSIP Server, so that the responding mobile phones would be able to traverse the NAT by responding through the RSIP Server. *Id.* (citing Ex. 1002 ¶ 101). Patent Owner does not dispute Petitioner’s showing with respect to this limitation. *See generally* PO Resp.

Claim 1 further recites “establishing, at the server, connections with the initiating mobile device and the participating mobile device based on the session identifier.” Petitioner contends, and we find, that Chambers describes establishing a connection with the initiating mobile device (inviter’s mobile phone) and the participating mobile device based on the session identifier (temporary IP address), when the participating mobile phone responds with an IP message to the IP address provided in the SMS

invitation. Pet. 47 (citing Ex. 1006 ¶¶ 26–39, Figs. 1–2; Ex. 1002 ¶ 102). Petitioner further argues, and we agree, that RSIP describes establishing at the RSIP Server connections with the RSIP Host and the participating device (Remote Host) based on the session identifier (public IP and port number), when the RSIP Server maps the allocated resources to the RSIP Host and Remote Host. *Id.* at 47–48 (citing Ex. 1013, 10–12, 14, 37; Ex. 1002 ¶ 103). We agree with Petitioner that it would have been obvious to a person having ordinary skill in the art to combine Chambers and RSIP to provide for establishing at the RSIP Server a connection with the initiating mobile device and the participating mobile device based on the session identifier when the responding mobile phones reply to the initiating mobile phone through the RSIP Server. *Id.* at 48–49 (citing Ex. 1002 ¶ 105). Patent Owner does not dispute Petitioner’s showing with respect to this limitation. *See generally* PO Resp.

Claim 1 further recites “facilitating, at the server, the data exchange session between the initiating mobile device and the participating mobile device.” Petitioner contends, and we agree, that Chambers describes a data exchange session between the initiating and participating mobile devices. Pet. 49 (citing Ex. 1006, Fig. 2 (steps 62, 68), ¶¶ 14–15, 40–46; Ex. 1002 ¶ 106). Petitioner further contends, and we agree, that RSIP describes facilitating at the RSIP Server a data exchange session between an RSIP Host and a Remote Host. *Id.* at 49–50 (citing Ex. 1013, 10–12, 37; Ex. 1002 ¶ 107). We agree with Petitioner that it would have been obvious to a person having ordinary skill in the art to combine Chambers and RSIP to provide for facilitating at the RSIP Server the data exchange session between the initiating mobile device and the participating mobile devices.

*Id.* at 50 (citing Ex. 1002 ¶ 108). Patent Owner does not dispute Petitioner’s showing with respect to this limitation. *See generally* PO Resp.

Independent claims 8 and 15 are similar to claim 1. Petitioner’s showings for claims 8 and 15 are nearly the same as that for claim 1, while sufficiently accounting for differences between claims 8 and 15 and claim 1. *See* Pet. 37–50. Patent Owner’s arguments for claims 8 and 15 are the same as its arguments for claim 1, which we have addressed above. Accordingly, for the reasons given above, having considered Petitioner’s and Patent Owner’s arguments and evidence, we determine that Petitioner has shown by a preponderance of the evidence that claims 1, 8, and 15 of the ’116 patent would have been obvious over Chambers and RSIP.

Claims 2, 9, and 16 depend from claims 1, 8, and 15 respectively and include “wherein the page-mode messaging service may be utilized to transmit page-mode messages to devices for purposes unrelated to participating in the data exchange session.” Petitioner relies on Chambers to meet the limitation. *Id.* at 50 (citing showing under Ground 1; Ex. 1002 ¶ 109). In particular, Petitioner contends, and we agree, that Chambers describes that the page-mode messaging service (SMS) may be utilized to transmit an SMS message to devices for purposes unrelated to participating in the chat session, such as by displaying the SMS message. *Id.* at 34 (citing Ex. 1006 ¶¶ 3–7). Patent Owner does not make separate arguments with respect to claims 2, 9, and 16. PO Resp. 15. We are persuaded by Petitioner’s showing, which we adopt, that claims 2, 9, and 16 would have been obvious over Chambers and RSIP.

Claims 3, 10, and 17 depend from claims 2, 9, and 16 respectively and include “wherein the page-mode messaging service transmits a page-mode message to the participating mobile device that is encoded to be recognized

by software on the participating mobile device configured to participate in the data exchange session.” Petitioner relies on Chambers to meet the limitation. Pet. 50–51. In particular, Petitioner contends that Chambers describes that the page-mode messaging service (SMS) transmits a page-mode message to the participating mobile device that is encoded to be recognized by software (the SMS software) on the participating device configured to participate in the data exchange session (the invitee’s wireless phone). *Id.* (citing Ex. 1006, Fig. 2 (steps 50–56), ¶¶ 3–7, 23, 33–37). Alternatively, Petitioner argues that it would have been obvious to a person having ordinary skill in the art to encode the messages to be recognized by software, such as a standard SMS application. *Id.* at 51 (citing Ex. 1002 ¶ 110). Patent Owner does not make separate arguments with respect to claims 3, 10, and 17. PO Resp. 15. We are persuaded by Petitioner’s showing, which we adopt, that claims 3, 10, and 17 would have been obvious over Chambers and RSIP.

Claims 4, 11, and 18 depend from claims 1, 8, and 15 respectively and include “wherein additional devices are invited to participate in the data exchange session.” Petitioner contends, and we agree, that Chambers describes that additional devices are invited to participate in the data exchange session (chat session). Pet. 51 (citing Ex. 1006, Figs. 1–2, ¶¶ 26–39, claim 17). Patent Owner does not make separate arguments with respect to claims 4, 11, and 18. PO Resp. 15. We are persuaded by Petitioner’s showing, which we adopt, that claims 4, 11, and 18 would have been obvious over Chambers and RSIP.

Claims 5, 12, and 19 depend from claims 1, 8, and 15 respectively and include “wherein the server is a non-mobile device.” Petitioner contends that Chambers describes that the initiating mobile device requests an IP

address from a stationary (non-mobile) server. Pet. 52 (citing Ex. 1006 ¶ 29). Petitioner further contends, and we agree, that it would have been obvious to implement the RSIP Server as a stationary server as taught by Chambers, because it would have been easier, cheaper, and provided high reliability required of a server performing NAT translation for numerous hosts. *Id.* (citing Ex. 1002 ¶ 112). Patent Owner does not make separate arguments with respect to claims 5, 12, and 19. PO Resp. 15. We are persuaded by Petitioner’s showing, which we adopt, that claims 5, 12, and 19 would have been obvious over Chambers and RSIP.

Claims 6, 13, and 20 depend from claims 1, 8, and 15 respectively and include “wherein the unique identifier utilized by the page-mode messaging service is associated with a telephone number of the participating mobile device.” Petitioner relies on Chambers to meet the limitation. Pet. 52 (citing showing under Ground 1, claim 6; Ex. 1002 ¶ 113). In particular, Petitioner contends, and we agree, that Chambers describes that the unique identifier utilized by the page-mode messaging service is associated with a telephone number of the participating mobile device, because it is the telephone number of the recipient. *Id.* at 36–37 (citing Ex. 1006 ¶ 4). Patent Owner does not make separate arguments with respect to claims 6, 13, and 20. PO Resp. 15. We are persuaded by Petitioner’s showing, which we adopt, that claims 6, 13, and 20 would have been obvious over Chambers and RSIP.

Claims 7 and 14 depend from claims 1 and 8 respectively and include “wherein the session identifier further comprises an IP address.” Petitioner contends, and we agree, that Chambers and RSIP each disclose that the session identifier further comprises an IP address. Pet. 53 (citing Ex. 1006 ¶ 30; Ex. 1013, 49–51; Ex. 1002 ¶ 114). Patent Owner does not make

separate arguments with respect to claims 7 and 14. PO Resp. 15. We are persuaded by Petitioner’s showing, which we adopt, that claims 7 and 14 would have been obvious over Chambers and RSIP.

In sum, having considered Petitioner’s and Patent Owner’s arguments and evidence, we determine that Petitioner has shown by a preponderance of the evidence that claims 1–20 of the ’116 patent would have been obvious over Chambers and RSIP.

*E. Constitutional Challenge to Inter Partes Review*

Patent Owner contends that the Board lacks constitutional power to issue a Final Written Decision in this proceeding under the Appointments Clause of the U.S. Constitution. PO Resp. 15–16; Sur-reply 20. We decline to consider Patent Owner’s constitutional challenge, as the issue has been addressed by the Federal Circuit in *Arthrex, Inc. v. Smith & Nephew, Inc.*, 941 F.3d 1320, 1328 (Fed. Cir. 2019).

*F. Remaining Grounds Challenging  
Claims 1–20 of the ’116 Patent*

For the reasons discussed above, Petitioner has shown, by a preponderance of the evidence, that claims 1–20 of the ’116 patent are unpatentable as obvious over Chambers and RSIP. In addressing this ground, we have addressed all of the challenged claims. *See* 35 U.S.C. § 318(a) (requiring the Board to “issue a final written decision with respect to the patentability of any patent claim challenged by the petitioner and any new claim added under section 316(d)”); *see also SAS Inst. Inc. v. Iancu*, 138 S. Ct. 1348, 1359 (2018) (holding that a petitioner “is entitled to a final written decision addressing all of the claims it has challenged”). Accordingly, we need not and do not decide whether

Petitioner has shown by a preponderance of the evidence that (1) claims 1–20 are unpatentable as obvious over Kirmse and Chambers, and (2) claims 1–3, 5–10, 12–17, 19, and 20 are unpatentable as obvious over Cordenier and TURN. *Cf. In re Gleave*, 560 F.3d 1331, 1338 (Fed. Cir. 2009) (not reaching other grounds of unpatentability after affirming the anticipation ground); *see also Beloit Corp. v. Valmet Oy*, 742 F.2d 1421, 1423 (Fed. Cir. 1984) (holding that once a dispositive issue is decided, there is no need to decide other issues).

### III. CONCLUSION<sup>17</sup>

For the foregoing reasons, we determine that Petitioner has shown by a preponderance of the evidence that claims 1–20 of the ’116 patent are unpatentable, as summarized in the following table:

| <b>Claims</b> | <b>35 U.S.C. §</b>   | <b>Reference(s)/ Basis</b> | <b>Claims Shown Unpatentable</b> | <b>Claims Not Shown Unpatentable</b> |
|---------------|----------------------|----------------------------|----------------------------------|--------------------------------------|
| 1–20          | 103(a) <sup>18</sup> | Kirmse, Chambers           |                                  |                                      |

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<sup>17</sup> Should Patent Owner wish to pursue amendment of the challenged claims in a reissue or reexamination proceeding subsequent to the issuance of this Decision, we draw Patent Owner’s attention to the April 2019 *Notice Regarding Options for Amendments by Patent Owner Through Reissue or Reexamination During a Pending AIA Trial Proceeding*. *See* 84 Fed. Reg. 16654 (Apr. 22, 2019). If Patent Owner chooses to file a reissue application or a request for reexamination of the challenged patent, we remind Patent Owner of its continuing obligation to notify the Board of any such related matters in updated mandatory notices. *See* 37 C.F.R. § 42.8(a)(3), (b)(2).

<sup>18</sup> As explained immediately above, we need not and do not decide whether Petitioner has shown by a preponderance of the evidence that claims 1–20 also would have been obvious based on the remaining grounds not addressed in this Decision.

|                                |        |                    |      |  |
|--------------------------------|--------|--------------------|------|--|
| 1–20                           | 103(a) | Chambers,<br>RSIP  | 1–20 |  |
| 1–3, 5–10,<br>12–17, 19,<br>20 | 103(a) | Cordenier,<br>TURN |      |  |
| <b>Overall<br/>Outcome</b>     |        |                    | 1–20 |  |

#### IV. ORDER

Accordingly, it is:

ORDERED that claims 1–20 of the '116 patent have been shown to be unpatentable; and

FURTHER ORDERED that, because this is a Final Written Decision, parties to the proceeding seeking judicial review of the Decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

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