UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAMSUNG ELECTRONICS CO., LTD.,
Petitioner,

v.

HEADWATER RESEARCH LLC,
Patent Owner.

IPR2024-00010
Patent 9,615,192 B2

Before GARTH D. BAER, STEPHEN E. BELISLE, and
RUSSELL E. CASS, *Administrative Patent Judges.*

CASS, *Administrative Patent Judge*.

DECISION
Granting Institution of *Inter Partes* Review
35 U.S.C. § 314

TARGET 1056
TARGET V. HEADWATER
IPR2026-00154

I. INTRODUCTION

A. Background

Samsung Electronics Co., Ltd. ("Petitioner") filed a Petition requesting an *inter partes* review of claims 1–9, 11–13, and 15 (the "challenged claims") of U.S. Patent No. 9,615,192 B2 (Ex. 1001, "the '192 patent"). Paper 2, 1 ("Pet."). Headwater Research LLC ("Patent Owner") *did not* file a Preliminary Response.

An *inter partes* review may not be instituted unless it is determined that "the information presented in the petition filed under section 311 and any response filed under section 313 shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition." 35 U.S.C. § 314 (2018); *see also* 37 C.F.R § 42.4(a) (2021) ("The Board institutes the trial on behalf of the Director."). The reasonable likelihood standard is "a higher standard than mere notice pleading," but "lower than the 'preponderance' standard to prevail in a final written decision." *Hulu, LLC v. Sound View Innovations, LLC*, IPR2018-01039, Paper 29, 13 (PTAB Dec. 20, 2019) (precedential).

For the reasons provided below and based on the record before us, we determine that Petitioner has demonstrated a reasonable likelihood that it would prevail in showing the unpatentability of at least one of the challenged claims. Accordingly, we institute an *inter partes* review on all grounds set forth in the Petition.

B. Real Parties in Interest

Petitioner states that the real parties in interest are Samsung Electronics Co., Ltd. and Samsung Electronics America, Inc. Pet. 98.

Patent Owner states that Headwater Research LLC is the real party in interest. Paper 4, 1.

C. Related Proceedings

The parties indicate that the '192 patent is the subject of the following district court case: *Headwater Research LLC v. Samsung Electronics Co., Ltd.*, No. 2:23-cv-00103 (E.D. Tex.). Pet. 98–99; Paper 4, 2.

D. The '192 Patent (Ex. 1001)

The '192 patent relates to a "message link server" that "maintains secure message links with device link agents on each of a plurality of wireless end-user devices." Ex. 1001, code (57). Multiple network elements "send messages to the message link servicer" that are targeted to deliver "message content to specific software components on respective ones of the wireless end-user devices." *Id.* The system also includes a "message buffering system in the server" that "buffers messages targeted to each device until one of several triggers occur." *Id.* As a result, "messages that do not have time-critical messaging needs may be buffered until the occurrence of a trigger other than the receipt of that message by the server." *Id.*

Figure 16 illustrates communication between a service controller 122 and a device 100 over a service control link 1653.

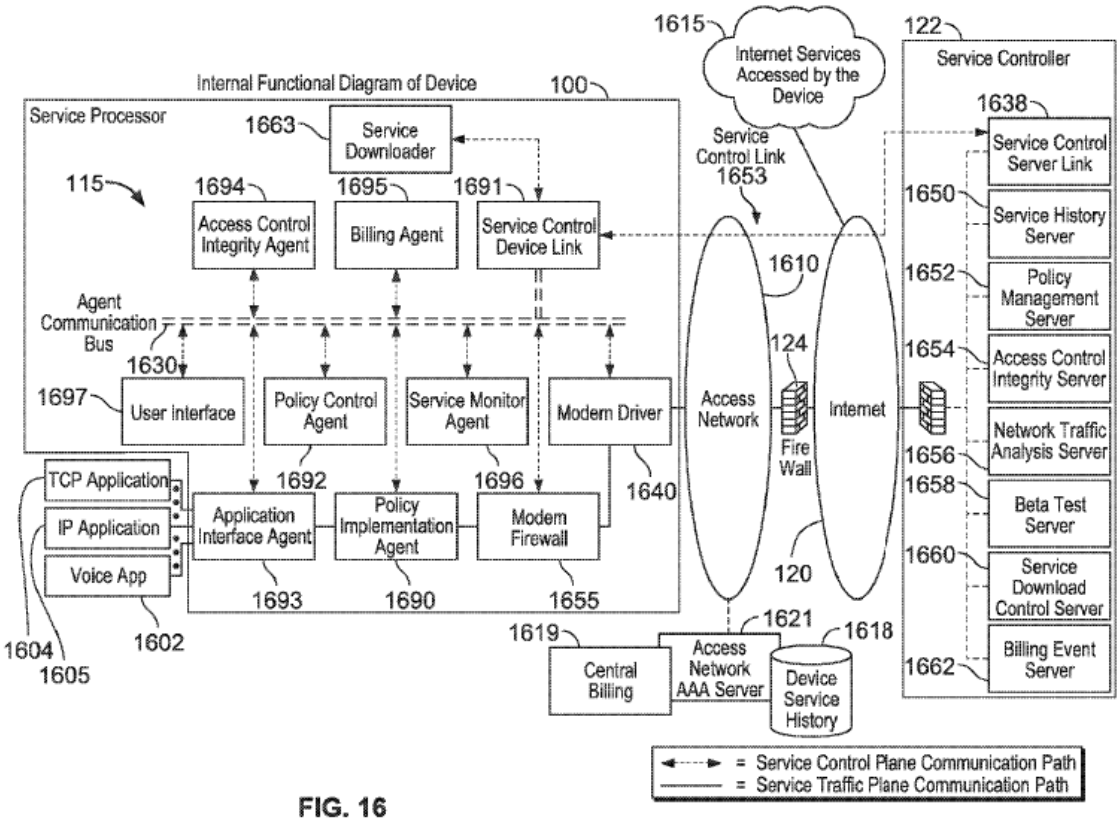


FIG. 16

Figure 16 of the '192 patent is a functional diagram illustrating a device based service processor and a service controller in accordance with certain embodiments of the invention. Ex. 1001, 2:22–24, 37:26–28.

As shown in Figure 16, service controller 122 includes servers 1650, 1652, 1654, 1656, 1658, 1660, and 1662 coupled to service control server link 1638. Ex. 1001, 76:30–78:60, Fig. 16. Device 100 includes service processor 115, including service control device link 1691, which provides communication for various agents in the service processor. *Id.* at 37:26–38:24, Fig. 16.

E. Illustrative Claim

Of challenged claims 1–9, 11–13, and 15, claims 1 and 15 are independent. For purposes of the issues raised at this stage of the proceeding, claim 1 is illustrative and is reproduced below.

[1pre] A message link server comprising:

[1a] a transport services stack to maintain a respective secure message link through an Internet network between the message link server and a respective device link agent on each of ap plurality of wireless end-user devices,

[1b] each of the wireless end-user devices comprising multiple software components authorized to receive and process data from secure message link messages received via a device link agent on that device;

[1c1] an interface to a network to receive network element messages from a plurality of network elements,

[1c2] the received network element messages comprising respective message content and requests for delivery of the respective message content to respective wireless end-user devices, the respective message content including data for, and an identification of, a respective one of the authorized software components; and

[1d1] a message buffer system including a memory and logic,

[1d2] the memory to buffer content from the received network element messages for which delivery is requested to a given one of the wireless end-user devices,

[1d3] the logic to determine when one of a plurality of message delivery triggers for the given one of the wireless end-user devices has occurred, wherein for at least some of the received network element messages, the receipt of such a message by the message buffer system is not a message delivery trigger, and for at least one of the message delivery triggers, the trigger is the occurrence of an asynchronous event with time-critical messaging needs, and

[1d4] upon determining that one of the message delivery triggers has occurred, the logic further to supply one or more messages comprising the buffered content to the transport services stack for delivery on the secure message link maintained between the transport services stack and a

device link agent on the given one of the wireless end-user devices.

Ex. 1001, 167:8–45 (indents and bracketed paragraph identifiers added).

F. Applied References

Petitioner relies upon the following references:

3GPP TS 23.140 v6.9.0 (2005-03), 3rd Generation Partnership Project, Technical Specification Group Terminals, Multimedia Messaging Service (MMS), Functional Description, Stage 2 (Ex. 1004, "TS-23.140");

Shen, US 2005/0207379 A1, published Sep. 22, 2005 (Ex. 1014, "Shen");

Ellison, US 7,082,615 B1, issued Jul. 25, 2006 (Ex. 1019, "Ellison");

Rakic, US 2009/0282256 A1, published Nov. 12, 2009 (Ex. 1015, "Rakic");

WO 2006/077283 A1, published Jul. 27, 2006 (Ex. 1007, "Houghton"); and

Munson, US 2009/0240807 A1, published Sep. 24, 2009 (Ex. 1017, "Munson").

Pet. vii–viii, 2. Petitioner also submits the Declaration of Dr. Patrick Traynor (Ex. 1003).

G. Asserted Grounds of Unpatentability

Petitioner challenges the patentability of claims 1–9, 11–13, and 15 of the '192 patent based on the following grounds:

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1, 5–7, 9, 11–13, 15	103(a) [1]	TS-23.140
2, 3	103(a)	TS-23.140, Shen

[1] The Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) ("AIA"), included revisions to 35 U.S.C. § 103 that became effective

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
4	103(a)	TS-23.140, Ellison
8	103(a)	TS-23.140, Rakic
1, 5–7, 9, 11–13, 15	103(a)	Houghton, Munson
2, 3	103(a)	Houghton, Munson, Shen
4	103(a)	Houghton, Munson, Ellison
8	103	Houghton, Munson, Rakic

Pet. 1.

II. DISCUSSION

A. Claim Construction

A claim "shall be construed using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. § 282(b)." 37 C.F.R. § 42.100(b). At this stage of the proceeding, neither party presents any claim terms for construction. Pet. 2–3.[2] Based on the present record, we determine that it is not necessary to provide an express interpretation of any claim terms at this time. *See Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1374 (Fed. Cir. 2019) ("The Board is required to construe 'only those terms . . . that are in controversy, and only to the extent necessary to resolve the controversy.'") (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)).

after the filing of an application to which the '192 patent claims priority. For purposes of this Decision, we apply the pre-AIA version of 35 U.S.C. § 103.

[2] As noted above, Patent Owner has not submitted a preliminary response.

B. Principles of Law

A claim is unpatentable under 35 U.S.C. § 103 if "the differences between the subject matter sought to be patented 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 skill in the art; and (4) where in evidence, objective evidence of non-obviousness.[3] *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17–18 (1966). When evaluating a combination of teachings, we must also "determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue." *KSR*, 550 U.S. at 418 (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)). Whether a combination of prior art elements would have produced a predictable result weighs in the ultimate determination of obviousness. *Id.* at 416–417.

In an *inter partes* review, the petitioner must show with particularity why each challenged claim is unpatentable. *Harmonic, Inc. v. Avid Technology, Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016); 37 C.F.R. § 42.104(b). The burden of persuasion never shifts to Patent Owner. *Dynamic Drinkware, LLC v. Nat'l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015).

[3] At this stage of the proceeding, Patent Owner has not presented objective evidence of non-obviousness.

We analyze the challenges presented in the Petition in accordance with the above-stated principles.

C. Level of Ordinary Skill in the Art

Petitioner introduces the testimony of Dr. Traynor that a person of ordinary skill in the art would have had "(1) at least a bachelor's degree in computer science, electrical engineering, or a related field, and (2) 3–5 years of experience in services and application implementation in communication networks." Pet. 3 (citing 1003 ¶¶ 21–22). Petitioner further states that "[a]dditional graduate education could substitute for professional experience, and vice versa." *Id.*

For purposes of this Decision, we adopt the assessment of the level of ordinary skill in the art proposed by Petitioner and Dr. Traynor and not disputed by Patent Owner as reasonable and consistent with the prior art. *See Okajima v Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir 2001) (the prior art may reflect an appropriate level of skill in the art).

D. Ground 1:[4] Asserted Obviousness of Claims 1, 5–7, 9, 11–13, and 15 Based on TS-23.140

Petitioner contends that claims 1, 5–7, 9, 11–13, and 15 would have been obvious based on TS-23.140. Pet. 5–33. As noted previously, Patent Owner did not submit a preliminary response to the Petition.

1. Overview of TS-23.140 (Ex. 1004)

TS-23.140 is a technical specification from the 3rd Generation Partnership Project (3GPP) relating to "group terminals" and "multimedia

[4] Here, and elsewhere in the Decision, the identification of the grounds using designations such as "Ground 1" and "Ground 2" refers to the designation of the grounds as presented in the Petition.

messaging service (MMS)." Ex. 1004, 1. This document "contains the core functions for a non-realtime Multimedia Messaging Service, MMS, which are sufficient to provide a basic service." *Id.* at 10.

TS-23.140 illustrates an MMS reference architecture in Figure 3, reproduced below.

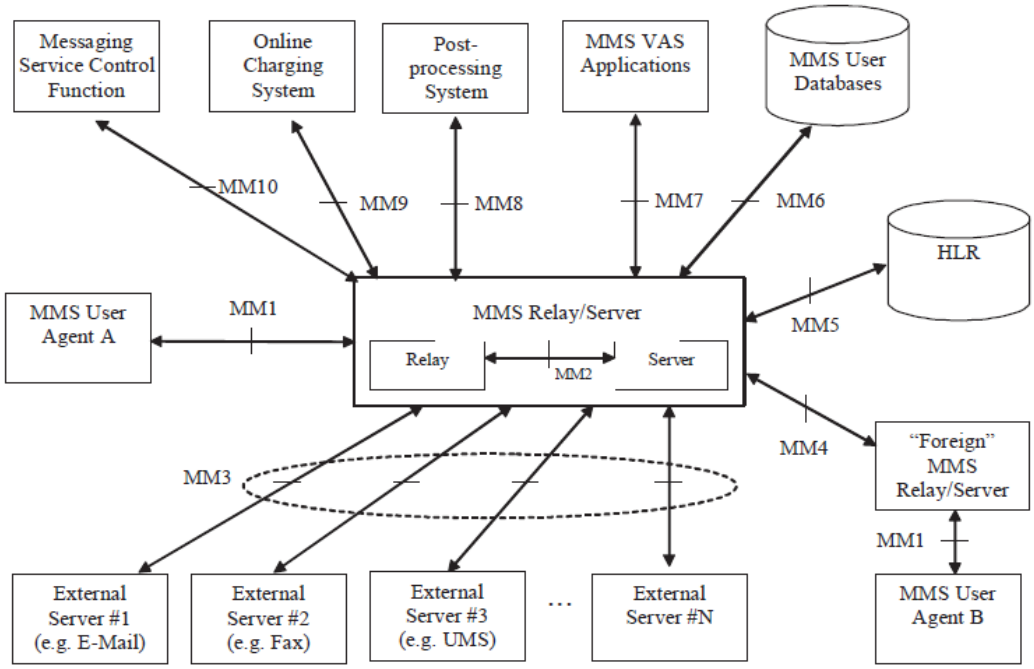


Figure 3 of TS-23.140 shows an MMS Reference Architecture and identifies reference points within an MMS network architecture (MMSNA). Ex. 1004, 14, 23.

As TS-23.140 explains, "[t]he MMS Relay/Server is responsible for storage and notification, reports, and general handing of messages." Ex. 1004, 21. The MMS Relay/Server "may also provide convergence functionality between External Servers and MMS User Agents and thus enable the integration of different server types across different networks." *Id.* The MMS can be used to send messages, including "data specific to applications between two MMS User Agents or an MMS User Agent and an MMS VAS Application (or vice versa)." *Id.* at 55.

2. Analysis of Independent Claim 1

a) [1pre] "A message link server comprising:"

Petitioner argues that, "[i]f the preamble is limiting, TS-23.140 renders obvious a message link server (MMS Server/Relay) and a method for operating" it. Pet. 6 (citing Ex. 1003 ¶¶ 95–102). Petitioner asserts that the "MMS/Relay Server is a message link server because it facilitates message delivery between devices/elements (user devices, other network elements) over a network," as shown in Petitioner's annotated version of Figure 2 of TS-23.140, reproduced below. *Id.*

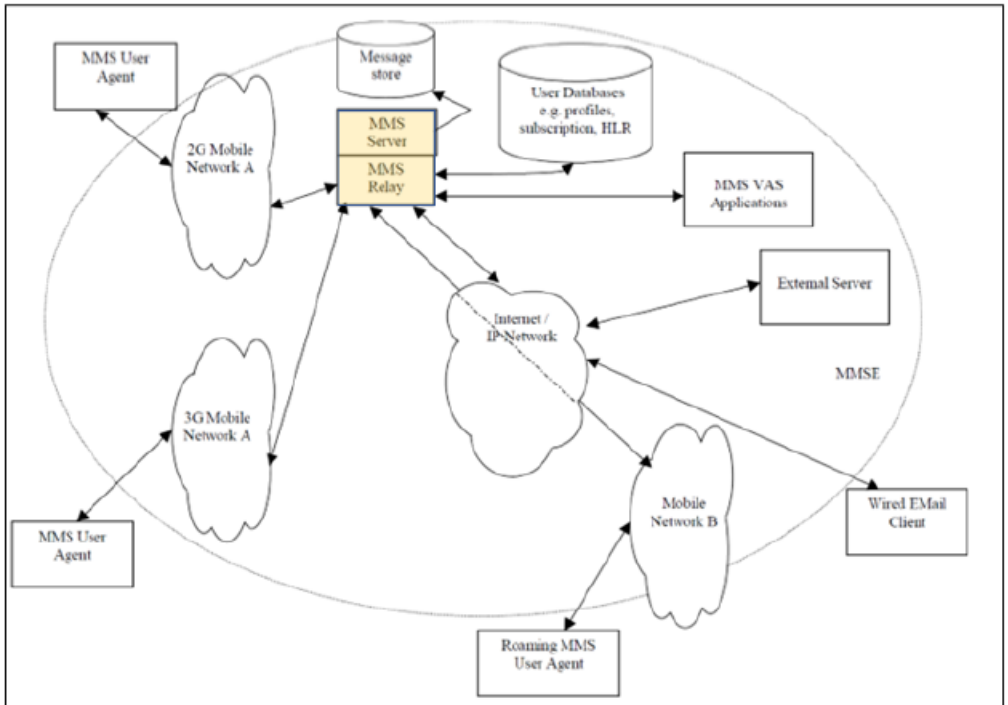


Figure 2: MMS Architectural Elements

Petitioner's annotated version of Figure 2 of TS-23.140 showing the MMS Server and MMS Relay highlighted in yellow. Pet. 7 (citing Ex. 1004, 17, Fig. 2; Ex. 1003 ¶¶ 95–96).

According to Petitioner, the "MMS Relay/Server stores and handles 'incoming'/'outgoing messages' and transfers messages 'between different messaging systems,' including between MMS User Agents/UEs, or MMS

User Agents and MMS VAS Applications." *Id.* (citing Ex. 1004, 14; Ex. 1003 ¶¶ 97–99). Further, Petitioner contends, the "MMS Relay/Server also facilities data transport to applications between two MMS User Agents or an MMS User Agent and an MMS VAS Application." *Id.* (citing Ex. 1004, 54–55; Ex. 1003 ¶¶ 100–101).

Petitioner's contentions are supported by the cited portions of TS-23.140. After consideration of the contentions and the evidence of record at this early stage, we determine that Petitioner has shown sufficiently that TS-23.140 discloses the preamble of claim 1 for purposes of institution.[5]

b) [1a] a transport services stack to maintain a respective secure message link through an Internet network between the message link server and a respective device link agent on each of ap plurality of wireless end-user devices,

Petitioner argues that TS-23.140 "renders obvious a transport services stack (transport layer security (TLS)-based transport protocol) to maintain a respective secure message link through an Internet network between the message link server (MMS Relay/Server) and a respective device link agent (MMS User Agent) on each of multiple wireless end-user devices (mobile phones/terminals/UEs)." Pet. 8 (citing Ex. 1003 ¶¶ 103–116). Petitioner asserts that Figure 2 of TS-23.140, reproduced below, shows MMS Relay/Server communicating via an Internet network with MMS User agents executing on each UE/phone.

[5] Because Petitioner presents sufficient evidence at this stage that TS-23.140 discloses the preamble, we need not determine whether the preamble is limiting for purposes of this Decision.

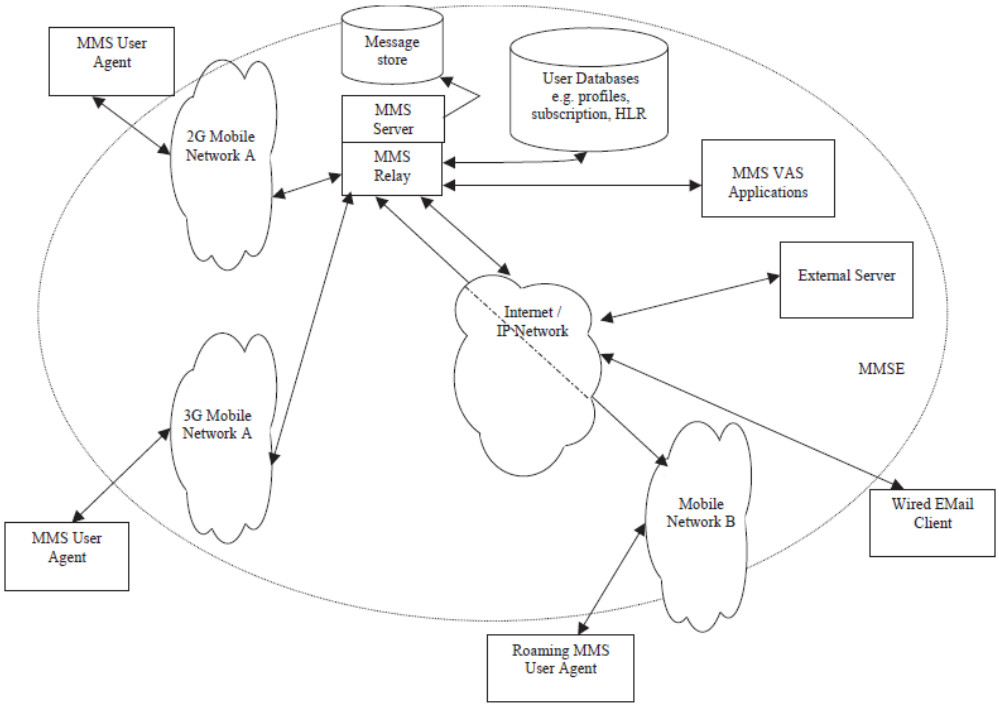
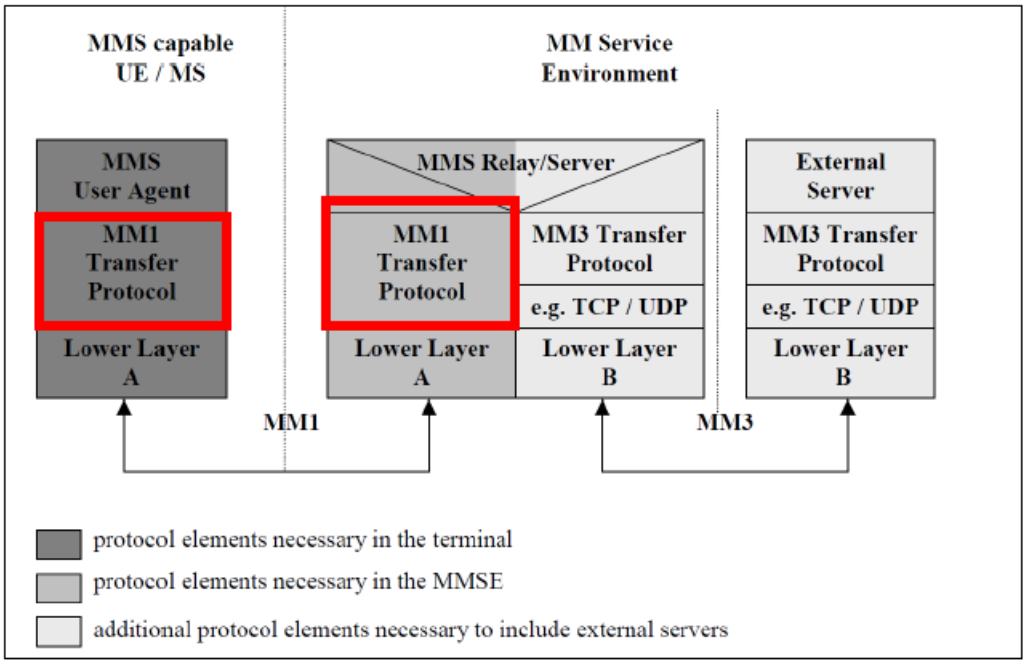


Figure 2 of TS-23.140 showing MMS architectural elements.
Ex. 1004, 17, Fig. 2.

According to Petitioner, Figure 2 shows an "environment with different network types provided using 'Internet protocol' that 'enables messaging in 2G and 3G wireless networks' and are 'compatible with messaging systems' on 'the Internet.'" Pet. 8 (citing Ex. 104, Fig. 2). Petitioner contends that the MMS User Agent "is a device link agent facilitating transmission/reception of multimedia messages (MMs) with/from different devices (e.g., MMS User Agents/UEs, MMS Relay/Server, MMS VAS Applications) linked over a communication network," as shown in Figure 2. *Id.* at 9 (citing Ex. 1004, 19–20, Ex. 1003 ¶ 106).

Petitioner also argues that "TS-23.140 discloses or renders obvious a 'transport services stack' consistent with its description in the '192 Patent." Pet. 9 (citing Ex. 1001, 89:24–41, 90:34–50; Ex. 1003 ¶¶ 107–108). Specifically, Petitioner asserts, the "MM1 Transfer Protocol and associated functionality (utilizing TCP and TLS/transport layer security) provides a

secure message link through an Internet Network between the message link server (MMS Relay/Server) and wireless end-user devices (UEs/terminals)." *Id.* (citing Ex. 1003 ¶¶ 109–110). Referring to Figure 4 of TS-23.140, reproduced below, Petitioner contends that the MM1 and MM3 Transfer Protocols "are implemented as the 'protocol framework' at the MMS Relay/Server to enable communications with the corresponding Transfer Protocols (MM1 or MM3) implemented at, e.g., another UE/External Server." *Id.* at 9–10.



Petitioner's annotated version of Figure 4 of TS-23.140 showing the MM1 Transfer Protocol in the UE/MS and Service Environment highlighted in red. Pet. 10 (citing Ex. 1004, 24–25, Fig. 4).

Relying on Dr. Traynor, Petitioner argues that one of ordinary skill "would have understood or found obvious that the MM1 Transfer Protocol is a transport services stack that facilitates transmission/transport of network communications between the MMS Relay/Server and network elements

(e.g., MMS User Agent, MMS VAS Applications)." Pet. 10 (citing Ex. 1003 ¶¶ 111–114; Ex. 1013).

Petitioner further argues that "TS-23.140 contemplates 'WAP[(Wireless Application Protocol)]/OMA implementation' for the 'MM1 Transfer Protocol' and incorporates by reference Open Mobile Alliance (OMA specifications)," which Petitioner submits as Exhibit 1011, that "explain that 'a device implementing OMA MMS ***must have . . . WAP WSP stack or HTTP/TCP/IP stack***.'" *Id.* (citing Ex. 1004, 13, 162; Ex. 1003 ¶¶ 112–113; Ex. 1011, 11). "Moreover," according to Petitioner, "OMA specifications describe the 'TLS' 'security protocol' as providing 'secure data transmission between the MMS Client and the MMS Proxy-Relay in . . . HTTP based protocol stacks for MMSM implementation.'" *Id.* at 11 (citing Ex. 1010, 22; Ex. 1003 ¶¶ 112–113).

Petitioner contends that, based on these disclosures that are "expressly incorporated into TS-23.140," and "TLS's well-known use for securing/encrypting communications within transport stacks," one of ordinary skill "would have understood or found obvious that [the] MMS Relay/Server's transport services stack would use TLS for securing the communication link between the MMS User Agent and the MMS Relay/Server." Pet. 11 (citing Ex. 1003 ¶ 114). According to Petitioner, one of ordinary skill would also "have understood or found obvious that, in MMS environments, multiple MMS User Agents/terminals are in communication with the MMS Relay/Server, thereby maintaining a respective secure TLS-based link between each MMS User Agent and MMS Relay/Server." *Id.* (citing Ex. 1003 ¶¶ 115–116; Ex. 1036, 2–3, Fig. 1, 3; Ex. 1007, 23; Ex. 1017 ¶¶ 7–8, Fig. 1).

Petitioner's contentions are supported by the cited portions of TS-23.140. After consideration of the contentions and the evidence of record at this early stage, we determine that Petitioner has shown sufficiently that TS-23.140 discloses claim limitation [1a] for purposes of institution.

c) [1b] each of the wireless end-user devices comprising multiple software components authorized to receive and process data from secure message link messages received via a device link agent on that device;

Petitioner argues that TS-23.140 "renders obvious that each wireless end-user device (wireless/mobile devices/UEs) includes multiple software components (applications) authorized to receive and process data (application data) from secure message link messages received via a device link agent." Pet. 12 (citing Ex. 1003 ¶¶ 117–128).

More specifically, Petitioner asserts that TS-23.140 "describes using MMS to 'transport data specific to ***applications***' downloaded on a mobile phone/terminal, and such application-specific data transport occurs 'between two MMS User Agents or an MMS User Agent and an MMS VAS Application.'" Pet. 12 (citing Ex. 1004, 54–55). Thus, Petitioner contends, one of ordinary skill "would have understood or found obvious that each UE includes multiple software applications/components." *Id.* (citing Ex. 1003 ¶ 118; Ex. 1036, 2–4).

Petitioner further contends that one of ordinary skill would have "understood or found obvious that such applications are ***authorized*** to receive application data messages." Pet. 13 (citing Ex. 1003 ¶¶ 119–121). In support, Petitioner argues that each application "***need[s] to register with the appropriate MMS User Agent or MMS VAS Application***" to receive and process messages via MMS, and that, "[o]nce registered, a message

including application data for an intended application is delivered by the MMS Relay/Server to the registered/intended application (via MMS Relay/Server) upon determining that the MMS User Agent can support application data (i.e., has the capability to support application data transport) and the terminal includes the intended application." *Id.* at 12–13 (citing Ex. 1004, 30, 54–55).

Petitioner further contends that one of ordinary skill would have "understood or found obvious that application data received by a particular destination application would be processed by that application for displaying data or performing operations on that data." Pet. 13 (citing Ex. 1003 ¶ 122; Ex. 1004, 56). According to Petitioner, "[b]ecause this communication occurs between MMS User Agents and/or between MMS User Agent and MMS VAS Application, and via MMS Relay/Server," as discussed with respect to limitation [1a], one of ordinary skill "would have understood that the messages including application data are received via MMS User Agent (device link agent) on the particular terminal/device." *Id.* (citing Ex. 1003 ¶ 123; Ex. 1004, 54–55). And, Petitioner argues, "[b]ecause a secure message link enables communication of messages between MMS Relay/Server and MMS User Agent," as discussed with respect to limitation [1a], one of ordinary skill "would have understood that the messages including the application data are 'secure message link messages.'" *Id.* at 13–14 (citing Ex. 1003 ¶ 125).

Finally, Petitioner argues that one of ordinary skill "would have also found obvious that the above-described allocation data delivery to an application would be performed for multiple applications resident on a mobile terminal that seek to send/receive application data via MMS (i.e.,

from MMS Relay/Server and via MMS User Agent)." Pet. 14 (citing Ex. 1003 ¶¶ 125–128; Ex. 1004, 54–55; Ex. 1036, 3–4).

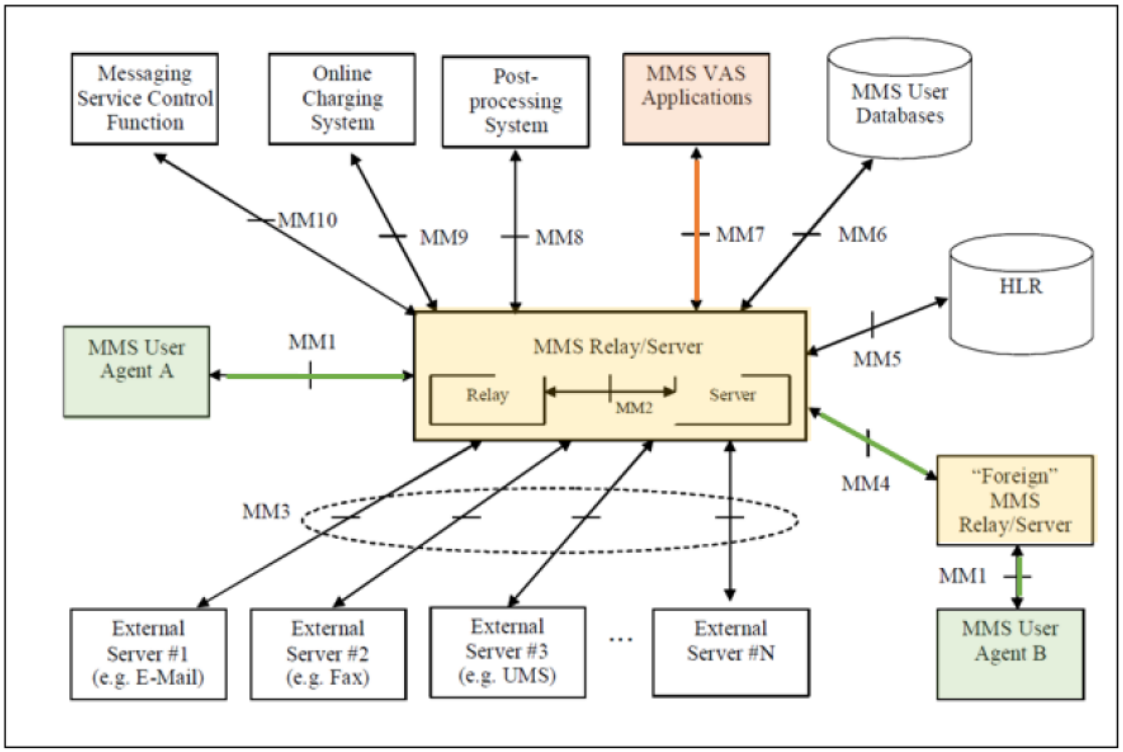
Petitioner's contentions are supported by the cited portions of TS-23.140. After consideration of the contentions and the evidence of record at this early stage, we determine that Petitioner has shown sufficiently that TS-23.140 discloses claim limitation [1b] for purposes of institution.

d) [1c1] an interface to a network to receive network element messages from a plurality of network elements,

Petitioner argues that TS-23.140 "renders obvious an interface (interfaces including MM1, MM3, MM7) to a network to receive network element messages (messages including application data and addressing data) from network elements (other MMS User Agents/UEs, MMS VAS Applications)." Pet. 14 (citing Ex. 1003 ¶¶ 129–135).

Specifically, Petitioner argues that TS-23.140's MMS network environment shown in Figure 2 "includes '***a collection of MMS-specific network elements***' and enables communications between these elements (MMS User Agents, MMS Server/Relay, MMS VAS Applications, and external server(s)) over various networks." Pet. 15 (citing Ex. 1004, 17, Fig. 2; Ex. 1003 ¶¶ 129–130). Petitioner asserts that, as explained for limitations [1a] and [1b], the "MMS Relay/Server receives messages from network element(s) (i.e., network element messages)," such as "MMS User Agents and MMS VAS Applications." *Id.* (citing Ex. 1003 ¶ 131).

Petitioner also argues that TS-23.140 shows various "interfaces" that "facilitate network communication of messages (i.e., network element messages) between MMS User Agents, MMS VAS Applications, and MMS Relay/Server, using MM1, MM2, MM7, and MM4 interfaces," as shown in Petitioner's annotated version of Figure 2, reproduced below.



Petitioner's annotated version of Figure 2 of TS-23.140 highlighting the MMS Relay/Server and "Foreign" MMS Relay/Server in yellow, the MMS User Agent A and MMS User Agent B in green, the MMS VAS Applications in pink, and also highlighting interfaces MM1, MM4, and MM7. Pet. 16 (citing Ex. 1004, Fig. 2).

In the annotated Figure 2 above, Petitioner argues that the MM1 interface is the "reference point between the MMS User Agent and the MMS Relay/Server," the MM4 interface is the "reference point between the MMS Relay/Server and another MMS Relay/Server," and the MM7 interface is "the reference point between the MMS Relay/Server and MMS VAS Applications." Pet. 16 (citing Ex. 1004, 23–24; Ex. 1003 ¶¶ 132–133). According to Petitioner, these interfaces "are interfaces to various networks, including 2G/3G mobile networks, and IP/internet networks." *Id.* (citing Ex. 1003 ¶ 134).

Finally, Petitioner argues that, as explained for limitation [1b], "applications registered with MMS User Agents/VAS applications transmit application data to other applications (corresponding to other MMS user agents and VAS applications) via the MMS Relay/Server." Pet. 17 (citing Ex. 1004, 54–55; Ex. 1003 ¶ 135).

Petitioner's contentions are supported by the cited portions of TS-23.140. After consideration of the contentions and the evidence of record at this early stage, we determine that Petitioner has shown sufficiently that TS-23.140 discloses claim limitation [1c1] for purposes of institution.

> *e) [1c2] the received network element messages comprising respective message content and requests for delivery of the respective message content to respective wireless end-user devices, the respective message content including data for, and an identification of, a respective one of the authorized software components; and*

Petitioner argues that TS-23.140 "renders obvious that the received network element messages (messages from applications registered with MMS User Agent/MMS VAS Applications) comprise respective message content, including data (application and control data) and identification of a respective one of the authorized software components (registered application(s)), and requests for delivery of the respective message content to respective wireless end-user devices." Pet. 17 (citing Ex. 1003 ¶¶ 137–144).

More specifically, Petitioner argues that, as described with respect to limitations [1a] and [1b], the "MMS is used to transport application data from one device (terminal, server) and its associated agent (MMS User Agent, MMS VAS Application(s)) to another device and its associated agent (MMS User Agent, MMS VAS Application(s))." Pet. 17 (citing Ex. 1004,

54–55; Ex. 1003 ¶ 138). Petitioner asserts that "[t]his application data transmission occurs upon an application 'trigger[ing]' the MMS User Agent or MMS VAS Application to send a message—including application data and/or 'control information' along with a destination 'application identifier'—to a destination application." *Id.* at 17–18 (citing Ex. 1004, 14, 54–56; Ex. 1003 ¶¶ 139–140). According to Petitioner, "the MMS User Agent/VAS Application coordinates message transmission." *Id.* The MMS Relay/Server, Petitioner contends, "receives this message and passes '***on the destination application identifier***' and 'application data' to MMS User Agent." *Id.*

Petitioner argues that "[t]he recipient/destination application would be an authorized/registered application" because "applications intending to send/receive application data 'need to register with the appropriate MMS User Agent' using their 'application identification value.'" Pet. 18 (citing Ex. 1004, 55–56; Ex. 1003 ¶¶ 141–143). Then, "upon message receipt," Petitioner contends, "the recipient application would be identified by MMS User Agent using its identification value as being resident on the device before the message is transmitted to this application." *Id.*

Petitioner further argues that, "[b]ecause messages are sent by an originating MMS User Agent to the MMS Relay/Server for delivery to an MMS User Agent with which the destination application is registered," one of ordinary skill "would have understood or found obvious that the transmitted/received message comprises a request for delivery of the respective message content to a respective wireless end-user device (including the destination application(s) resident on that device)." Pet. 18–

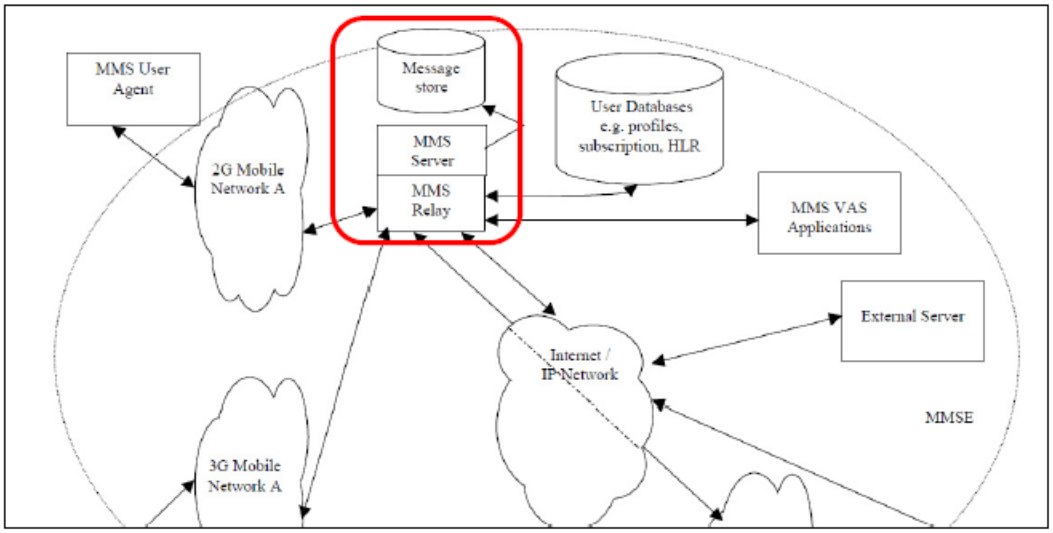
19 (citing Ex. 1003 ¶¶ 141–143; Ex. 1004, 28–29, 54–55, Fig. 6; Ex. 1036, 2–4).

Petitioner's contentions are supported by the cited portions of TS-23.140. After consideration of the contentions and the evidence of record at this early stage, we determine that Petitioner has shown sufficiently that TS-23.140 discloses claim limitation [1c2] for purposes of institution.

f) [1d1] a message buffer system including a memory and logic, [1d2] the memory to buffer content from the received network element messages for which delivery is requested to a given one of the wireless end-user devices,

Petitioner argues that TS-23.140 "renders obvious a message buffer system including a memory that buffers content from received network element messages (message store storing the received message), for which delivery is requested to a given one of the wireless end-user devices (application running on a terminal/UE associated with the recipient MMS User Agent)." Pet. 19 (citing Ex. 1003 ¶¶ 145–152).

More specifically, Petitioner argues that, as described for limitations [1c1] and [1c2], "network element messages are received from network element(s) by the MMS Relay/Server, and delivery of these messages is requested to application(s) resident on a terminal/UE (and its associated MMS User Agent)." *Id.* at 19–20 (citing Ex. 1003 ¶ 146). Petitioner also argues that the "MMS Relay/Server 'stores and handl[es]' '***incoming and outgoing messages***' and handles message transfer 'between different messaging systems,'" as shown in Petitioner's annotated version of a portion of TS-23.140's Figure 2, reproduced below.



Petitioner's annotated version of Figure 2 of TS-23.140 highlighting the Message store and MMS Server/Relay. Pet. 20 (citing Ex. 1004, 17, Fig. 2).

As shown in Petitioner's annotated version of TS-23.140's Figure 2, MMS Server/Relay communicates with various systems and is coupled to the Message store. Pet. 20 (citing Ex. 1004, 17, 21, Fig. 2; Ex. 1003 ¶¶ 147–149).

Petitioner also argues that, "[u]pon receiving a message, the originator MMS Relay Server '***retain[s] the MM until the earliest desired time of delivery***'" and "the recipient MMS Relay/Server (which can be the same as the originator server) '***store[s] the MM at least until***' 'the associated time of expiry is reached, the MM is delivered, or the recipient MMS User Agent requests the MM to be routed forward or the MM is rejected.'" Pet. 20–21 (citing Ex. 1004, 26–28). Additionally, according to Petitioner, "[m]essages can be 'persistent[ly] stored' in a 'Persistent Network-Based Storage' (MMBox) associated with 'the MMS Relay/Server.'" *Id.* at 21 (citing Ex. 1004, 21–22, 26–28; Ex. 1003 ¶¶ 150–151). Finally, Petitioner contends that, as discussed later for limitations [1d3] and [1d4], the "MMS

Relay/Server includes a memory buffer system including logic for delivering messages upon one or more message delivery triggers occurring." *Id.* (citing Ex. 1003 ¶¶ 151–152).

Petitioner's contentions are supported by the cited portions of TS-23.140. After consideration of the contentions and the evidence of record at this early stage, we determine that Petitioner has shown sufficiently that TS-23.140 discloses claim limitations [1d1] and [1d2] for purposes of institution.

> *g) [1d3] the logic to determine when one of a plurality of message delivery triggers for the given one of the wireless end-user devices has occurred, wherein for at least some of the received network element messages, the receipt of such a message by the message buffer system is not a message delivery trigger, and for at least one of the message delivery triggers, the trigger is the occurrence of an asynchronous event with time-critical messaging needs, and*

Petitioner argues that TS-23.140 "renders obvious multiple message delivery triggers for transmitting the stored message data to an MMS User Agent for a UE that includes the destination application." Pet. 21 (citing Ex. 1003 ¶¶ 153–160). "For example," Petitioner asserts, "the message is not delivered by the MMS Relay/Server to a MMS User Agent/UE-terminal (resident on a UE/terminal) until one or more of the following triggers occur":

- The MMS Relay/Server has sent a notification to the recipient User Agent (Ex. 1004 § 7.1.2).
- The recipient MMS User Agent requests message retrieval upon MMS Relay/Server receiving the notification—e.g., within a message expiry period (Ex. 1004 § 7.1.2.1).
- The specified deferred delivery period (e.g., message

expiry period) is met (e.g., where the ***recipient MMS User Agent requests deferred message delivery in the message retrieve request***) or until [the] message is retrieved/rejected (Ex. 1004 § 7.1.2.1).

- When recipient MMS User Agent becomes available/reachable (e.g., moves into coverage, switches MMS User Agent on) or until [the] message expires (Ex. 1004 § 7.1.3).
- The message conforms to the message retrieval request's "size restriction" (Ex. 1004 § 7.1.3).

Pet. 21–22 (citing Ex. 1003 ¶¶ 155–156).

Petitioner argues that, "[b]ecause MMS Relay/Server does not deliver the message to the recipient MMS User Agent (for a particular user terminal) until the above condition(s)/trigger(s) are met," one of ordinary skill "would have understood or found obvious that the MMS Relay/Server includes logic that is configured to determine when one (or more) of these message delivery triggers for the particular terminal/end-user device has occurred and if so, delivering the messages." Pet. 22–23 (citing Ex. 1003 ¶ 156). And, Petitioner contends, "[g]iven the above-described message delivery triggers," one of ordinary skill "would have found obvious that message receipt alone would not trigger message delivery, particularly considering the other condition(s)/trigger(s) that would be implemented (per above) and would be satisfied before message(s) is/are delivered." *Id.* at 23 (citing Ex. 1003 ¶ 157).

Finally, Petitioner argues, one of ordinary skill "would have understood that MMS User Agent can request delivery of the message received/stored by the MMS Relay/Server," and "would have found obvious (per the above disclosures) for such requested delivery to be based on user request." Pet. 23 (citing Ex. 1004, 20, 28–29, 69; Ex. 1003 ¶¶ 158–160).

Petitioner further contends that, according to the '192 patent specification, this requested delivery based on user request "constitutes a message delivery trigger that is 'an asynchronous event with time-critical messaging needs.'" *Id.* (citing Ex. 1001, 38:50–63; Ex. 1003 ¶¶ 158–160).

Petitioner's contentions are supported by the cited portions of TS-23.140. After consideration of the contentions and the evidence of record at this early stage, we determine that Petitioner has shown sufficiently that TS-23.140 discloses claim limitation [1d3] for purposes of institution.

> *h) [1d4] upon determining that one of the message delivery triggers has occurred, the logic further to supply one or more messages comprising the buffered content to the transport services stack for delivery on the secure message link maintained between the transport services stack and a device link agent on the given one of the wireless end-user devices.*

Petitioner argues that TS-23.140 "renders obvious that, upon determining that message delivery trigger(s) has/have occurred, the message buffer system includes logic for supplying one or more messages comprising the buffered content (stored message in the message store or MMSBox) to the transport services stack for delivery on the secure message link maintained between the transport services stack and a device link agent (MMS User Agent) on the given one of the wireless end-user devices." Pet. 23–24 (citing Ex. 1003 ¶¶ 161–165).

More specifically, Petitioner argues that, as described previously for limitations [1d1]–[1d3], the "MMS Relay/Server delivers stored messages (in MMBox or another temporary storage) upon the occurrence of one or more of the delivery triggers." Pet. 24 (citing Ex. 1003 ¶¶ 163–164). According to Petitioner, one of ordinary skill "would have found obvious that MMS Relay/Server includes logic for performing such message delivery

upon detecting occurrence of one or more of the delivery triggers." *Id.* Additionally, Petitioner contends, as described previously with respect to limitation [1a], "TS-23.140 discloses/renders obvious message delivery via MMS Relay/Server's transport services stack (MM1 Transfer Protocol) that maintains a secure message link (TLS-based link) to a device link agent (recipient MMS user agent) of a particular wireless end-user device (UE/terminal of recipient MMS User Agent)." *Id.* (citing Ex. 1004, 24, Fig. 4; Ex. 1010, 22; Ex. 1003 ¶¶ 165–166).

Petitioner's contentions are supported by the cited portions of TS-23.140. After consideration of the contentions and the evidence of record at this early stage, we determine that Petitioner has shown sufficiently that TS-23.140 discloses claim limitation [1d4] for purposes of institution.

i) Summary for Claim 1

For the foregoing reasons, Petitioner's cited evidence and reasoning demonstrates a reasonable likelihood that Petitioner would prevail in its contentions regarding claim 1.

3. Claims 5–7, 9, 11–13, and 15

Petitioner contends that independent claim 15 is unpatentable over TS-23.140 for the same reasons as independent claim 1. Pet. 6– 24. Petitioner also argues that dependent claims 5–7, 9, and 11–13 are unpatentable over TS–23.140. Pet. 46–60. As noted above, Patent Owner did not submit a preliminary response. Based on the evidence of record, we determine that Petitioner has demonstrated a reasonable likelihood that claims 5–7, 9, 11–13, and 15 are unpatentable over TS-23.140.

E. Grounds 2–4: Obviousness of Claims 2–4 and 8 Based on TS-23.140 in View of Shen, Ellison, or Rakic

Petitioner contends that dependent claims 2–4 and 8 would have been obvious over TS-23.140 in view of Shen (Ground 2, claims 2 and 3), Ellison (Ground 3, claim 4), or Rakic (Ground 4, claim 8). Pet. 60–66. As noted above, Patent Owner did not submit a preliminary response. Based on the evidence of record, we determine that Petitioner has demonstrated a reasonable likelihood that claims 2–4 and 8 are unpatentable over the combinations set forth in Grounds 2–4.

F. Grounds 5–8: Obviousness of Claims 1–9, 11–13, and 15 Based on Houghton in view of Munson, Shen, Ellison, and/or Rakic

Petitioner contends that claims 1, 5–7, 9, 11–13, and 15 are unpatentable over Houghton in view of Munson (Ground 5). Pet. 49–85. Petitioner also argues that claims 2–4 and 8 would have been obvious over Houghton and Munson in view of Shen (Ground 6, claims 2 and 3), Ellison (Ground 7, claim 4), or Rakic (Ground 8, claim 8). Pet. 85–95. As noted above, Patent Owner did not submit a preliminary response. Based on the evidence of record, we determine that Petitioner has demonstrated a reasonable likelihood that claims 1–9, 11–13, and 15 are unpatentable over the combinations set forth in Grounds 5–8.

III. CONCLUSION

After considering the evidence and arguments presented in the current record, we determine that Petitioner has demonstrated a reasonable likelihood of success in proving that at least one of the challenged claims of the ’192 patent is unpatentable. We therefore institute trial on all challenged claims and grounds raised in the Petition.

At this stage of the proceeding, we have not made a final determination as to the patentability of any challenged claim or as to the construction of any claim term. Any final determination will be based on the record developed during trial.

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review of claims 1–9, 11–13, and 15 of the '192 patent is instituted with respect to all grounds set forth in the Petition; and

FURTHER ORDERED that, pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4(b), *inter partes* review of the '192 patent shall commence on the entry date of this Order, and notice is hereby given of the institution of a trial.

For PETITIONER:

W. Karl Renner
Jeremy Monaldo
Karan Jhurani
FISH & RICHARDSON P.C.
axf-ptab@fr.com
jjm@fr.com
jhurani@fr.com

For PATENT OWNER:

Reza Mirzaie
Dale Chang
Amy Hayden
James Milkey
Neil Rubin
Philip Wang
RUSS, AUGUST & KABAT
rmirzaie@raklaw.com
dchang@raklaw.com
ahayden@raklaw.com
jmilkey@raklaw.com
nrubin@raklaw.com
pwang@raklaw.com