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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

META PLATFORMS, INC.,
Petitioner,

v.

SITNET, LLC,
Patent Owner.

IPR2024-00530
Patent 9,877,345 B2

Before THU A. DANG, NEIL T. POWELL,
and KARA L. SZPONDOWSKI, *Administrative Patent Judges*.

DANG, *Administrative Patent Judge*.

JUDGMENT
Final Written Decision
Determining All Challenged Claims Unpatentable
Denying Patent Owner's Motion to Amend
35 U.S.C. § 318(a)

I. INTRODUCTION

A. Background

In response to a Petition (Paper 1, "Pet.") filed by Meta Platforms, Inc. ("Petitioner"), we instituted *inter partes* review of claims 1–16 ("the challenged claims") of U.S. Patent No. 9,877,345 B2 (Ex. 1001, "the '345 patent"). *See* Paper 9 ("Institution Decision" or "Dec. Inst.").

During trial, SitNet, LLC ("Patent Owner") filed a Response (Paper 14, "PO Resp."), to which Petitioner filed a Reply (Paper 17, "Pet. Reply"), and Patent Owner thereafter filed a Sur-reply (Paper 21, "PO Sur-reply").

In addition, Patent Owner filed a Contingent Motion to Amend (Paper 13, "MTA") proposing substitution of claims 1–16 with proposed substitute claims 17–32 on a contingent basis. Petitioner filed an Opposition to that Motion (Paper 18, "Opp."). We provided Preliminary Guidance in response to Patent Owner's Motion to Amend and Petitioner's Opposition thereto. Paper 20 ("Prelim. Guid."). Thereafter, Patent Owner filed a Reply to the Opposition (Paper 22, "PO Reply MTA") and Petitioner filed a Sur-reply to the Motion to Amend (Paper 26, "Pet. Sur-reply MTA").

We held oral arguments on June 10, 2025, and a transcript is in the record. Paper 29 ("Tr.").

We have jurisdiction under 35 U.S.C. § 6. We issue this Final Written Decision pursuant to 35 U.S.C. § 318(a). For the reasons that follow, we determine that Petitioner has shown by a preponderance of the evidence that original claims 1–16 of the '345 patent are unpatentable and, further, we *deny* Patent Owner's Motion to Amend with respect to proposed substitute claims 17–32.

B. Related Proceedings

The parties identify the ’345 patent as the subject of *SitNet LLC v. Meta Platforms, Inc.*, No. 1:23-CV-06389 (S.D.N.Y.) (“the district court litigation”). Pet. 2; Paper 4.

Petitioner also identifies the following USPTO proceedings challenging other, related patents asserted by Patent Owner in the district court litigation: *Meta Platforms, Inc. v. SitNet, LLC*, IPR2024-00528 (PTAB), challenging U.S. Patent No. 8,249,932 B1; *Meta Platforms, Inc. v. SitNet, LLC*, IPR2024-00529 (PTAB), challenging U.S. Patent No. 8,332,454 B1; and *Meta Platforms, Inc. v. SitNet, LLC*, IPR2024-00531 (PTAB), challenging U.S. Patent No. 11,470,682 B1. Pet. 2.

C. The ’345 Patent

The ’345 patent, titled “Method and System for Using a Situational Network,” issued on January 23, 2018, from Application No. 14/861,340 filed on September 22, 2015. Ex. 1001, codes (54), (45), (21), (22) (emphasis and capitalization omitted). The ’345 patent discloses methods and systems for creating a projection of a situational network, by creating, by an event node server, an event node in a multi-dimensional personal information network, where the event node corresponds to a situation. *Id.* at code (57). A projection of nodes of the situational network is formed using geographic locations of a plurality of devices corresponding to nodes in the multi-dimensional personal information network, and an invitation is transmitted to establish a link with the event node server to the devices corresponding to each node in the projection. *Id.* A response is received from at least one of the devices accepting the invitation to establish a link

with the event node server, and a link with each device accepting the invitation is established. *Id.*

Figure 1 of the ’345 patent, reproduced below, illustrates a network diagram for a Situational Network (SitNet). Ex. 1001, 1:64–66, 4:3–15.

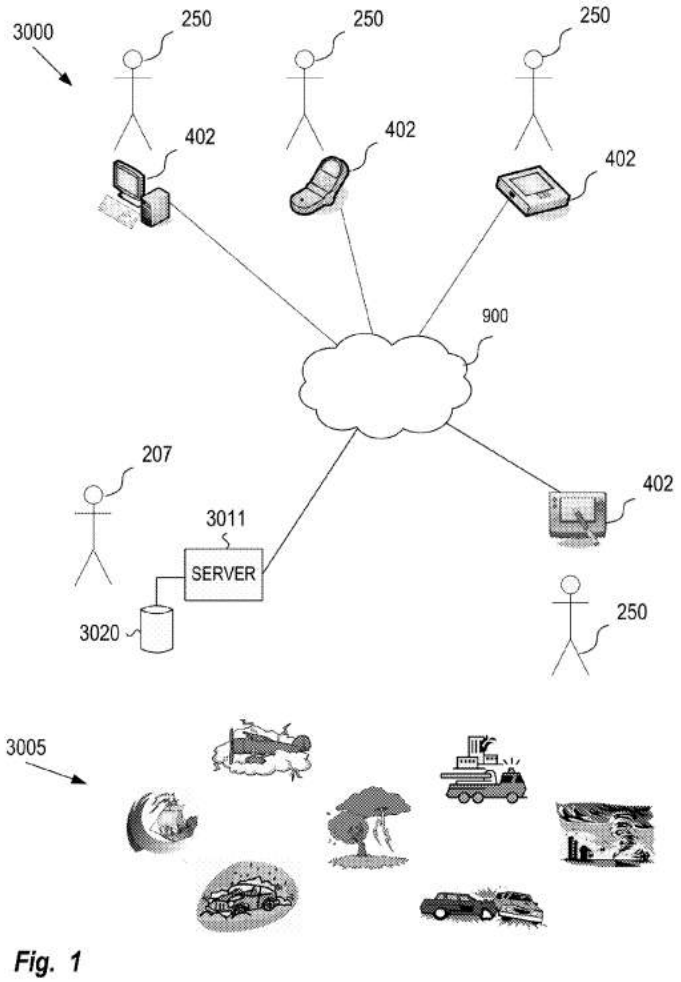


Figure 1 illustrates a network diagram for a Situational Network 3000. Ex. 1001, 1:64–66, 4:3–15.

Situational network (SitNet) 3000 illustrated in Figure 1 is created when an occurrence of an event or situation 3005 causes connections/links to be established between, within, or among a set of participants 250, 207. Ex. 1001, 4:3–15. The SitNet allows the participants (e.g., 250, 207) to interact

and exchange information over connections to, or through, computer network 900 regarding event or situation 3005. *Id.* Examples of events or situations 3005 that may initiate the formation of a SitNet include a weather phenomenon (e.g., hurricanes), emergency situations (e.g., building fires), natural disasters (e.g., earthquakes), weather related activities (e.g., skiing), navigation or travel incidents (e.g., road closures or construction), and public health crises. *Id.* at 4:59–5:7.

If the event or situation is not stationary, or changes over time (e.g., in scope or location, such as, for example, a weather event with a time-dependent trajectory or size), participants in the SitNet may also change as the situation evolves over time. Ex. 1001, 5:8–15. Some, or all, of the participants included in SitNet 3000 may have no prior knowledge of (or connection or contact with) each other or with other participants of the situational network, through any other type of social network or personal interactions. *Id.* at 4:10–15.

Participants 207 in SitNet 3000 are "external entities . . . also called situation authorities, central authorities or trusted providers, that generally are able to aggregate and provide comprehensive information related to the situation," and include news organizations, weather agencies, traffic agencies, emergency relief organizations, and government agencies (e.g., local fire departments, state Departments of Transportation, and Federal Emergency Management Agency (FEMA)). Ex. 1001, 4:15–32. A situation authority server 3011 (also called an event node server) corresponds to each situation authority 207. *Id.* at 4:27–32. Situation authority server 3011 may be connected to a database 3020 for storing information related to situation 3005 or data related to other participants in SitNet 3000. *Id.*

Participants 250 in SitNet 3000 are "users . . . which are alternately referred to as individuals or members," and they are connected via SitNet 3000 using devices 402 (such as cell phones, PDA's, personal computers, and so on). Ex. 1001, 4:33–47. Devices 402 may be connected into SitNet 3000 automatically, by requesting a connection, or by receiving an invitation to connect. *Id.*

The '345 patent also describes a "roll-call" or "check-in" feature that may be included in a SitNet for a disaster or emergency event, to establish a list of persons that might be missing or may need assistance. Ex. 1001, 27:3–29. A server corresponding to an event node of the SitNet may invite users determined to be physically threatened by a disaster or emergency event, to check-in. *Id.* The server of the event node may determine user Personal Information Aggregators (PIAs) that are to be contacted through stored lists, such as apartment or office building occupancy records, or postal records for streets or zip codes. *Id.* at 27:9–15; *see also id.* at 8:14–31 (describing PIAs). People identified with a PIA are sent an unsolicited message to reply if they are alright (i.e., provide a positive response). *Id.* at 27:12–20. A user may also respond to the check-in that they need assistance and provide location information to emergency responders. *Id.* Non-responding PIAs are reported to emergency management officials to decide further actions that may be required to locate those individuals. *Id.*

A situation authority or trusted provider establishing an event node for a server that hosts the roll-call or check-in feature may provide a searchable message board to users connected to the SitNet (as well as visitors not connected to the SitNet) that allows sharing of information about individuals in the SitNet with persons outside the SitNet. Ex. 1001, 27:30–36. A visitor

to the website can search the message board for information related to a specific situation or event. *Id.* at 27:47–48. The information may be tagged with a location coordinate so that check-in and other information can be searched and obtained down to a zip code, street, or individual household level. *Id.* at 27:49–52. The searchable message board also allows visitors not connected or unable to connect to the SitNet the opportunity to post or view messages that are relevant to a specific situation, such as, for example, searching for information on a missing family member or friend. *Id.* at 27:52–56. Other visitors with information about the situation can respond to those messages with any information that they can share. *Id.* at 27:57–59. The most recent roll-call list for the search criteria entered by the visitor may be available using a link on the webpage. *Id.* at 27:59–60.

D. The Challenged Claims

Of the challenged claims (claims 1–16), claims 1, 8, and 13 are independent claims. Claims 1 and 8 are illustrative and are reproduced below:

> 1. A method of accessing situation related information, the method comprising:
>
> receiving an indication of an occurrence of a situation;
>
> forming a situational network related to the occurrence of the situation with a plurality of participant devices determined to be geographically proximate to the situation, each of the participant devices corresponding to a participant in the situational network;
>
> presenting a roll call query to each of the plurality of participant devices soliciting a reply related to a status of the participant;
>
> receiving a status response from one or more of the participants; and

> aggregating the status responses from responsive participants into a roll call list.
>
> 8. A method of providing situation related information to a situation authority via a situational network, the method comprising:
>
> receiving, by a participant device, a roll call query soliciting a reply related to a status of a participant based on the participant being determined, by the situation authority, to be geographically proximate to the situation;
>
> receiving, by the participant device, a selection of a status response from the participant; and
>
> sending the status response to the central authority, wherein the status response is included in a roll call list.

Ex. 1001, 34:8–22, 34:46–57.

E. Asserted Grounds of Unpatentability

We instituted inter partes review of all challenged claims, claims 1–16 of the ’345 patent, on all challenges in the Petition. Petitioner asserts that claims 1–16 are unpatentable based on the following grounds (Pet. 12):

Claim(s) Challenged	35 U.S.C. §[1]	Reference(s)/Basis
1, 3–8, 10–13, 15, 16	103	Gage[2]
2, 9, 14	103	Gage, Mitchell[3]
1, 3, 4, 6–8, 10–13, 15	103	Shida[4]
2, 5, 9, 14, 16	103	Shida, Sinha[5]

Petitioner relies on the declarations of Jeremy Cooperstock, Ph.D. (Ex. 1003, "Cooperstock Declaration"; Ex. 1033, "Cooperstock Declaration Supporting Pet. Reply") in support of its unpatentability contentions.

Patent Owner relies on the declaration of Aviel D. Rubin, Ph.D. (Ex. 2009, "Rubin Declaration") in support of its Patent Owner's Response. Dr. Rubin was cross-examined by Petitioner, and a transcript of his deposition

[1] The Leahy-Smith America Invents Act ("AIA"), Pub. L. No. 112-29, 125 Stat. 284, 287–88 (2011), amended various provisions of 35 U.S.C. § 103. Because the '345 patent claims the benefit of the filing date from an application filed before March 16, 2013, we apply the pre-AIA version of the statutory basis for unpatentability. *See* Ex. 1001, code (60) (indicating the '345 patent is a "[c]ontinuation of application No. 13/612,964, filed on Sep. 13, 2012, now Pat. No. 9,143,535, which is a continuation of application No. 13/274,712, filed on Oct. 17, 2011, now Pat. No. 8,332,454, which is a division of application No. 11/924,711, filed on Oct. 26, 2007, now Pat. No. 8,069,202.").
[2] U.S. Patent Appl. Publication No. 2008/0139165 A1, published June 12, 2008, filed December 11, 2006 (Ex. 1005, "Gage").
[3] U.S. Patent Appl. Publication No. 2007/0194938 A1, published August 23, 2007, filed February 22, 2006 (Ex. 1013, "Mitchell").
[4] U.S. Patent Appl. Publication No. 2003/0162557 A1, published August 28, 2003, filed December 24, 2002 (Ex. 1006, "Shida").
[5] U.S. Patent Appl. Publication No. 2008/0208605 A1, published August 28, 2008, filed October 20, 2007 (Ex. 1007, "Sinha").

was entered into the record. Ex. 1027.

Petitioner's Opposition to the Motion to Amend is supported by an additional Declaration of Dr. Jeremy Cooperstock (Ex. 1028).

II. ANALYSIS OF PETITION'S CHALLENGES

A. Level of Ordinary Skill in the Art

In determining whether an invention would have been obvious at the time it was made, we consider the level of ordinary skill in the pertinent art at the time of the invention. *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966). In our analysis, 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) (quotation marks omitted). Furthermore, the prior art itself can reflect the appropriate level of ordinary skill in the art. *Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001).

Relying on the declaration of Dr. Cooperstock, Petitioner contends that a person of ordinary skill in the art (POSITA) at the time of the invention of the '345 patent would have had a bachelor's degree in Computer or Electrical Engineering or equivalent discipline, and approximately two years' experience in telecommunications or computer networking, whereby additional education could substitute for professional experience, and significant work experience could substitute for formal education. Pet. 17 (citing Ex. 1003 ¶¶ 59–60). Patent Owner does not dispute Petitioner's definition of a person of ordinary skill in the art. *See generally* PO Resp.

We adopt Petitioner's proposed definition of the level of a person of ordinary skill in the art because it is consistent with the problems addressed in the '345 patent and the prior art. *See Okajima*, 261 F.3d at 1354–55 (holding that absent evidence to the contrary, "the prior art itself [may] reflect[] an appropriate level" of ordinary skill in the art).

B. Claim Construction

We construe each claim "in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent." 37 C.F.R. § 42.100(b) (2020). Under this standard, claim terms are generally given their plain and ordinary meaning as would have been understood by a POSITA at the time of the invention and in the context of the entire patent disclosure. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005) (en banc).

Only those terms in controversy need to be construed, and only to the extent necessary to resolve the controversy. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co. Matal*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)).

Petitioner submits that all claim terms should receive "their plain and ordinary meaning in the context of the '345 patent specification." Pet. 17. Patent Owner proposes constructions for "situational network" recited in independent claims 1, 8, and 13. PO Resp. 1–4. Although Patent Owner does not include a construction for "situation authority" recited in independent claims 8 and 13 in its "CLAIM CONSTRUCTION" section (*id.*), in its prior art arguments against Gage, Patent Owner argues that "[t]he

specification teaches a 'situation authority' . . . as an external entity." *Id.* at 12. In light of the parties' arguments and evidence, we address the claim terms "situational network" and "situation authority" recited in the independent claims.

1. "situational network" (claims 1, 8, 13)

Patent Owner points out that the district court has already construed "situational network" as "a network created in response to an event or situation." PO Resp. 1 (citing Ex. 2007, 2–4). Patent Owner contends that "both parties agree with the construction of 'situational network' as 'a network created in response to the occurrence of an event or situation.'" PO Resp. 1 (noting this is consistent with the district court's construction). However, Patent Owner further contends that "[t]he agreed upon construction of 'situational network' ***excludes pre-established networks***." *Id.* at 2.

According to Patent Owner, the plain and ordinary meaning of a "network" is "an interconnected system of elements that transmits information," and since the interconnection between elements defines a network, "a network is created by connecting elements." PO Resp. 2–3 (citing Ex. 2009 ¶¶ 52–55). Thus, Patent Owner argues that "a network is created when at least two elements are connected to each other" and therefore "regardless of whether the new network is being created from an existing network or a collection of previously unconnected elements, the act of creating a network requires establishing a new connection to incorporate at least one new element into the system." *Id.* at 3.

Further, Patent Owner argues that, since "situational network" has been construed to be a "network created at a specific time – i.e., ***in response***

to an event or situation," the situational network therefore "can only exist when the occurrence of an event or situation causes a new connection to be established incorporating at least one new element." PO Resp. 3–4 (citing Ex. 2009 ¶¶ 52–58). Consequently, according to Patent Owner, "a 'situational network' cannot be a system in which all elements were interconnected ***prior to*** the event or situation." *Id.* at 4.

Petitioner argues that Patent Owner's proposed construction for "situational network" conflicts with the embodiments of the '345 patent, the district court's construction, and Patent Owner's "very own arguments." Pet. Reply 1. In particular, Petitioner argues that the proposed construction "import[s] limitations to the claims that erroneously extend beyond the district court's claim construction" because the exclusion of "pre-established networks" does not "appear anywhere in the claims." *Id.* at 2 (citing Ex. 1033 ¶¶ 7–14). According to Petitioner, the Specification of the '345 patent confirms the understanding that "situational network" does not exclude pre-existing networks, and instead states that "situational network 3000 is created when an occurrence . . . causes connections, also referred to as links, to be established between, within or among a set of participants 250, 207." *Id.* at 4 (citing Ex. 1001, 4:3–7).

Further Petitioner argues that Patent Owner's proposed construction also contradicts its own expert who "admitted that 'a device that's part of an existing network' can 'be included in the formation of a situational network.'" Pet. Reply 3 (citing Ex. 1027, 56:2–7). According to Petitioner, "both [Patent Owner] and Dr. Rubin acknowledge, the formation of a situational network does not exclude pre-existing networks." *Id.* at 3–4 (citing Ex. 2009 ¶ 55 ("the act of creating a network logically must include

constructing the interconnection that defines the network [that] can be created from pre-existing connections"); PO Resp. 3).

In its Sur-reply, Patent Owner argues that "[i]nherently, the situational network cannot exist prior to the event or situation, otherwise, it cannot be 'created in response' to said event or situation." PO Sur-reply 2. Although Patent Owner acknowledges that "the situational network can be ***derived from*** a pre-existing network" (*id.*), Patent Owner argues that "the 'created in response' portion of the construction can only apply to a pre-existing network if something ***new*** is added to the system," specifically, "by establishing a ***new connection*** incorporating a ***new element*** into the system." *Id.* Patent Owner surmises that, without adding a new connection/new element to a pre-existing network, "one would be left with just the old, pre-existing network that is <u>not</u> 'created in response' to an event or situation." *Id.* at 2–3. According to Patent Owner, "the 345 Patent specification explicitly confirms this understanding." *Id.* at 3 (citing Ex. 1001, 4:3–7 ("a situational network 3000 is created when an occurrence or expected occurrence of an event or situation 3005 causes connections, also referred to as links, to be established between, within or among a set of participants 250, 207."). Patent Owner points to Dr. Rubin's deposition testimony (Ex. 1027) to support its contention that Petitioner confirms that a "situational network" is "'a network created in response to an event or situation' by establishing a new logical, Layer 7 connection permitting applications to communicate between devices." PO Sur-reply 5–7 (citing Ex. 1027, 15:12–16:22, 45:22–46:3, 56:8–19, 57:22–58:2).

Although the parties agree to the district court's construction of "situational network" as "a network created in response to the occurrence of

an event or situation" (*see* PO Resp. 5; Pet. Reply 2–3), and we adopt the district court's agreed-upon construction thereof, we do not find availing Patent Owner's further contention that "[t]he agreed upon construction of 'situational network' excludes pre-established networks." *Id.* at 2 (emphasis omitted). In particular, the challenged claims do not recite any requirement that a network cannot be created from pre-existing networks. *Id.*; *see also* Ex.1001, 34:8–22, 34:46–57. We agree with Petitioner that, by contending that the network cannot be created from "pre-established networks," Patent Owner erroneously imports limitations to the claims because the exclusion of "pre-established networks" does not appear anywhere in the claims. Pet. Reply 2. Instead, as Petitioner points out, the Specification of the '345 patent discloses that situational network is created when an occurrence causes connections between, within or among a set of participants." *Id.* at 4 (citing Ex. 1001, 4:3–7). We find availing Petitioner's contention that "within or among a set of participants" would comprise users that are already participating in a pre-established network. *Id.*

Even Patent Owner acknowledges that "[a] new network may be derived from an old network." PO Resp. 3; *see also* PO Sur-reply 2 ("the situational network can be ***derived from*** a pre-existing network"). As Petitioner points out, as summarized in the District Court's Claim Construction Order, Patent Owner "previously construed a situational network as 'a network that is a subset of a larger network, comprising member nodes, formed in response to an event or situation.'" Pet. Reply 3 (citing Ex. 2007, 2). Petitioner's contention is supported by Patent Owner's expert, Dr. Rubin, who acknowledges that "'a device that's part of an

existing network' can 'be included in the formation of a situational network.'" *Id.* (citing Ex. 1027, 56:2–7).

Although we agree with Patent Owner that the plain and ordinary meaning of a "network" is "an interconnected system of elements that transmits information" (PO Resp. 2–3), we do not find availing Patent Owner's argument that the act of creating a network requires establishing a new connection to incorporate at least one new element into the system. *Id.* at 3. That is, although we agree with Patent Owner that the situational network cannot exist prior to the event or situation, "otherwise, it cannot be 'created in response' to said event or situation" (PO Sur-reply 2), we disagree that "the 'created in response' portion of the construction can only apply to a pre-existing network, if something ***new*** is added to the system." *Id.* Patent Owner again is importing limitations into the claims, as the claims do not recite any requirement of a "new connection" to incorporate "at least one new element" into the system. *Id.* For example, independent claim 1 recites, *inter alia*, "forming a situational network related to the occurrence of the situation with a plurality of participant devices determined to be geographically proximate to the situation." Ex. 1001, 34:11–15. That is, claim 1 merely requires that the situational network be formed with certain participant devices (those geographically proximate to the situation).

As Petitioner points out, the Specification of the '345 patent itself suggests a "network" is formed with the participants who "may already be connected," rather than with a new connection with new participants. Pet. Reply 7 (citing Ex. 1001, 4:10–15, 7:52–59). In other words, the Specification describes that situational network 3000 is created when connections are "established between, within or among a set of participants

250, 207." Ex. 1001, 4:3–7. Thus, we determine that "created in response" does not have to be created from new participants, and "pre-established networks" may comprise parts of "a network created in response to the occurrence of an event or situation" as claimed, wherein the occurrence of an event or situation causes a pre-existing network to be identified and, thus, formed for that event or situation. *See id.* And as Petitioner points out, Patent Owner previously construed a situational network as "a network that is a subset of a larger network." *See* Pet. Reply 3; *see also* Ex. 2007, 2.

In its Sur-reply, Patent Owner points to Dr. Rubin's deposition testimony as confirmation that, in the formation of a "situational network," the device would have to have a new connection. PO Sur-reply 3 (citing Ex. 1027, 56–16). In particular, Patent Owner contends that Dr. Rubin testified that, in order for a device that is part of an existing network to be included in the formation of a situational network, the device would have to have a connection at "Layer 7." *Id.* at 3–4 (citing Ex. 1027, 21:1–20, 56:8–19).

We find unavailing Patent Owner's contention that Dr. Rubin's deposition response supports its construction that "situational network" is created by establishing a new logical, Layer 7 connection, and thus, excludes a pre-existing network of Layer 7 connections. PO Sur-reply 5–7. Patent Owner again is importing limitations into the claims, as the claims do not recite that the "situational network" is created by establishing new logical, Layer 7 connections. Nor do the claims preclude networks with pre-existing logical, Layer 7 connections. Rather, claim 1 merely recites "forming a situational network . . . with a plurality of participant devices," regardless of whether the participant devices are already physically connected in a pre-existing network with logical, Layer 7 connections or must establish new

logical, Layer 7 connections therebetween in creating the situational network.

Thus, although we agree that a situational network cannot exist prior to the event or situation, to be "'created in response' to said event or situation" (PO Sur-reply 2), we find unavailing Patent Owner's contention that such created network excludes a pre-existing network because something new has to be added to the system. *Id.* That is, we find unavailing Patent Owner's contention that creating a situational network with new logical, Layer 7 connections between participant devices cannot be with networks with pre-existing, Layer 7 connections therebetween. *Id.* In fact, in Dr. Rubin's deposition testimony cited by Patent Owner, he confirmed that a situational network created with devices having new connections at Layer 7 are with devices that are "part of ***an existing network***." *See* Ex. 1027, 56:8–19 (emphasis added); PO Sur-reply 3–4.

For the reasons discussed above, although we agree with the parties and adopt the district court's construction of "situational network" as "a network created in response to an event or situation" (*see* Ex. 2007, 2–4), we conclude that a created "situational network" does not exclude pre-established networks and does not require new connections to be established incorporating new elements.

2. "<u>situation authority</u>" (claims 8, 13)

Patent Owner contends that the Specification of the '345 patent teaches a "situation authority" (or "trusted provider" or "central authority") as an "external entity" able to aggregate and provide comprehensive information related to the situation. PO Resp. 12 (emphasis omitted) (citing Ex. 1001, 4:14–20). In particular, according to Patent Owner, a "situation

authority" is referenced as an "external entity" in the '345 patent, wherein "***external entities 207***, also called ***situation authorities***, central authorities or trusted providers, [] generally are able to aggregate and provide comprehensive information related to the situation." *Id.* at 13 (citing Ex. 1001, 4:14–20); *see also id.* at 22. As such, Patent Owner argues that "a 'situation authority' is an external entity." *Id.* at 13, 22. Patent Owner then contends that "[a]n external entity logically would have to be an entity *outside of the service or system* providing the 'situational network.'" PO Resp. 14, 23; *see also* PO Sur-reply 14.

Petitioner contends, however, that by requiring "a 'situation authority' to be 'external' to a 'situational network,'" Patent Owner is improperly adding a new limitation to the claims. Pet. Reply 4. Petitioner points out that the term "external" is not recited in the claims, "[n]or does the specification contain any 'expressions of manifest exclusion or restriction.'" *Id.* at 4–5 (citing Ex. 1001, 4:16–20; Ex. 1033 ¶¶ 17–18). Further, according to Petitioner, Patent Owner's proposed interpretation "conflicts with the district court's construction" which construed "situation authority" as "*an entity providing information concerning a situation*." *Id.* at 5–6 (citing Ex. 2007, 4; Ex. 1027, 72:16–18; Ex. 1033 ¶¶ 15–21).

We find unavailing Patent Owner's proposed construction of "situation authority" as "external" to the situational network. PO Resp. 14. As Petitioner points out that the term "external" is not recited in the claims, whereas the district court's construction of "situation authority" does not limit the term to "external" entities. Pet. 4–6; s*ee also* Ex. 2007, 4. As we pointed out at the hearing, neither party proposed the entity had to be external in the district court. Tr. 36:20–24.

Although we agree with Patent Owner that the ’345 patent describes a “situation authority” as an “external entity” (PO Resp. 13), we find unavailing Patent Owner’s contention that an external entity logically would have to be an entity “*outside of the service or system* providing the situational network” (*id.* at 14). Although, as Patent Owner points out, the Specification of the ’345 patent equates “external entities” with “situation authorities” (*see* Ex. 1001, 4:14–20 (“external entities 207, also called situation authorities”)), the ’345 patent does not limit external entities 207 to being outside of the service or system providing a situational network such as situational network (SitNet) 3000. PO Resp. 13. Instead, Figure 1 of the ’345 patent, as reproduced below, shows external entities 207 as participants in SitNet 3000:

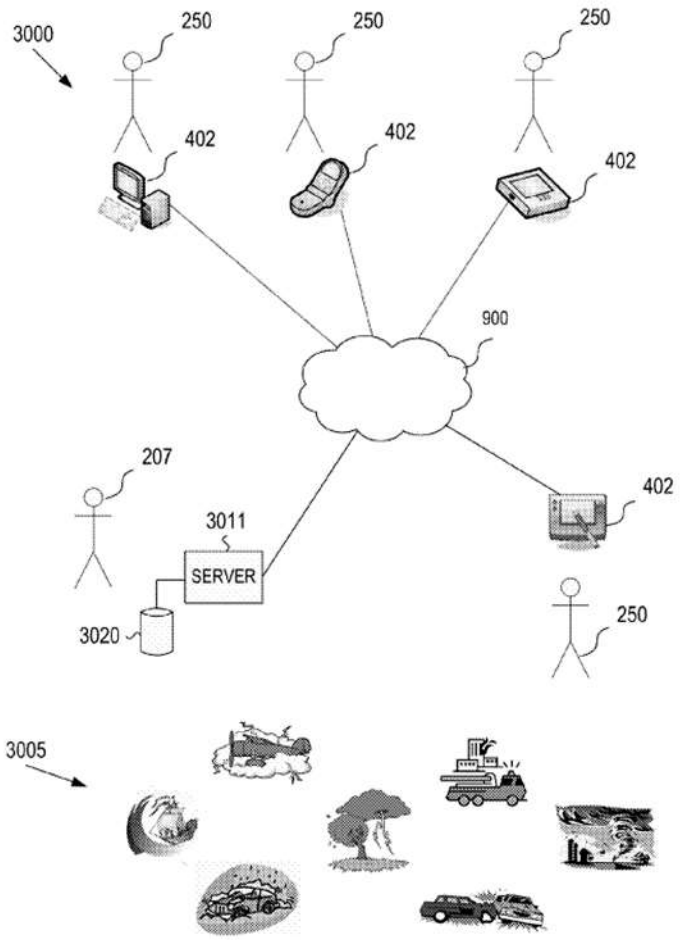


Fig. 1

Figure 1 of the ’345 patent above shows SitNet 3000 as being created with connections/links established “between, within, or among a set of participants 250, 207.” Ex. 1001, 4:3–15.

The Specification of the ’345 patent states that, “[i]n the context of the situational network 3000, the participants may include external entities 207, also called situation authorities . . . that generally are able to aggregate and provide comprehensive information related to the situation.” Ex. 1001, 4:16–20. That is, the ’345 patent specifically describes external entities 207 as “participants” within SitNet 3000, provided to “aggregate and provide” information related to the situation. *Id.* Thus, although the ’345 patent calls

"external entities" situation authorities, the '345 patent does not indicate that the term "external" must refer to being external to situational network 3000. *Id.*

For the reasons discussed above, we conclude that "situation authorities," i.e., "external entities," are not required to be external to or outside of the service or system providing the situational network.

C. Principles of Law

A 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 presented, objective evidence of non-obviousness. *See Graham v. John Deere Co*, 383 U.S. 1, 17–18 (1966).

D. Asserted Obviousness of Claims 1, 3–8, 10–13, 15, and 16 over Gage (Ground 1); and of claims 2, 9, and 14 over Gage and Mitchell (Ground 2)

Petitioner contends that claims 1, 3–8, 10–13, 15, and 16 of the '345 patent would have been obvious over Gage. Pet. 12, 22–44. Petitioner also contends that dependent claims 2, 9, and 14 would have been obvious over Gage in further view of Mitchell. *See id.* at 12, 44–49.

In response, Patent Owner contends that the Petition fails to demonstrate that Gage discloses a "situational network" as recited in

independent claims 1, 8, and 13 and a "situation authority" as recited in independent claims 8 and 13. PO Resp. 4–15; *see also* PO Sur-reply 8–14. Thus, Patent Owner contends that Gage cannot render the challenged claims invalid and unpatentable. *Id.*

We summarize the asserted art to Gage and Mitchell below.

1. Gage

Gage is titled "Disaster Response System for Conveying a Situation Status and Location of Subscribers and for Initiating Preconfigured Response Plans," and relates to "emergency notification systems for mobile telephone users within a disaster region to quickly and efficiently convey situational status indicators to concerned parties." Ex. 1005, codes (54), (57), ¶ 2 (emphasis and capitalization omitted). When a disaster is detected, mobile devices of subscribers may be queried for location and wireless connectivity by a centrally located disaster response system. *Id.* ¶ 9. When a subscriber is away from a disaster area, this information can be recorded and it can be presumed that the subscriber is all right, but when a subscriber is proximate to a disaster area, the subscriber's device can be queried for a status indicator and for an optional, user-provided message. *Id.*

Figure 2 of Gage, reproduced below, illustrates a subscriber status reporting system 200 configured for use during disasters. Ex. 1005 ¶¶ 16, 26.

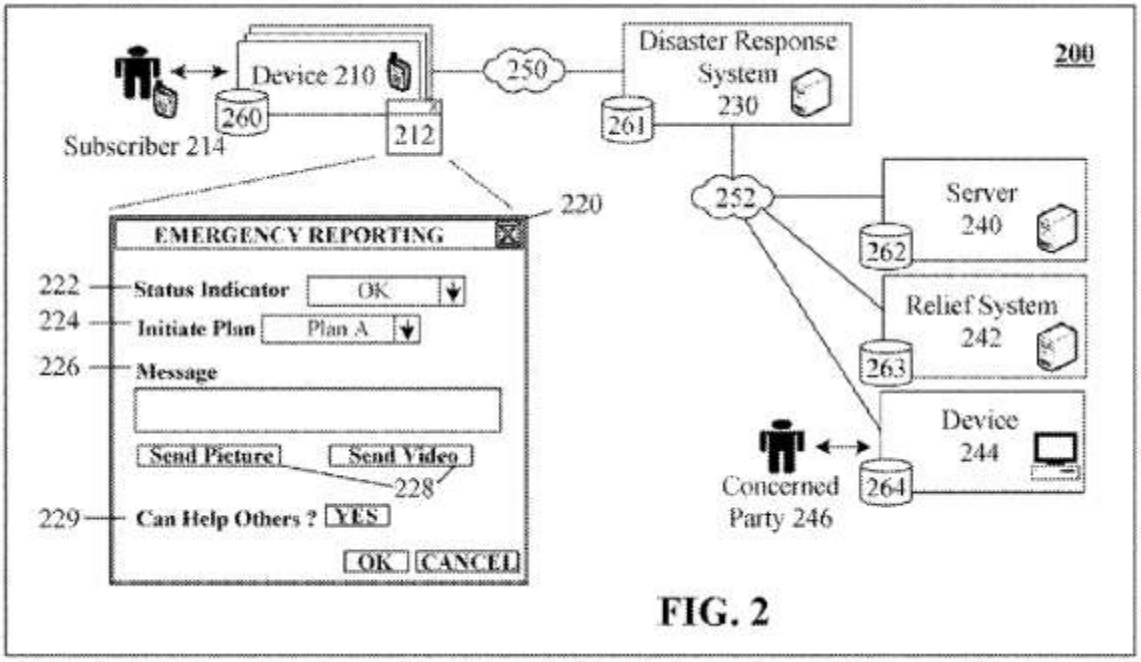


Figure 2 illustrates a subscriber status reporting system 200 configured for use during disasters. Ex. 1005 ¶¶ 16, 26.

In system 200 shown in Figure 2, a device 210 (e.g., a mobile telephone, a computer, a two-way radio, a GPS device, a media player) associated with a subscriber 214 may be linked to disaster response system 230 via network 250. Ex. 1005 ¶¶ 26, 32. System 230 may be linked to server 240, relief system 242, and device 244 via network 252. *Id.* Device 244 is a device associated with concerned party 246. *Id.* Software 212 on device 210 permits subscriber 214 to report situation status information to system 230. *Id.* ¶ 27. Interface 220 in Figure 2 illustrates a reporting interface, with which a user can select a status indicator 222, such as OK, NEED HELP, and IN CRITICAL NEED. *Id.*

System 230 may combine data obtained from one or more devices 210 with information obtained from other sources, such as server 240, in order to create a more comprehensive situation assessment. Ex. 1005 ¶ 31. For

example, server 240 may provide satellite images of a disaster region, which may be combined with a subscriber location so that a concerned party 246 is able to see a status indicator and a location for a subscriber 214, as well as a picture of that area. *Id.* Disaster response system 230 may convey data to one or more disaster relief systems 242, which can provide assistance to needful subscribers 214. *Id.*

Figure 3 of Gage, reproduced below, is a flow chart of a process used by a disaster response system. Ex. 1005 ¶¶ 17, 35.

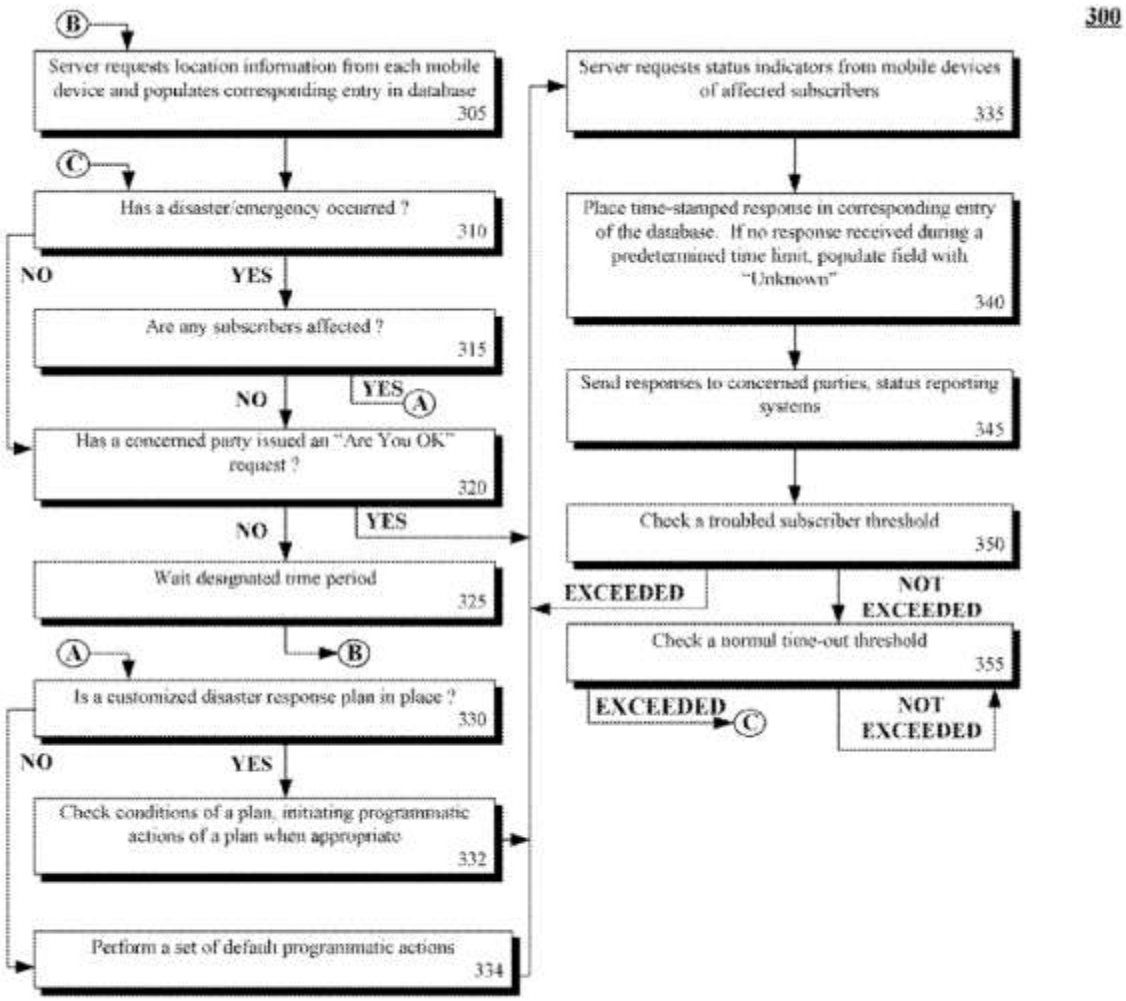


FIG. 3

Figure 3 of Gage, reproduced above, is a flow chart of a process 300 used by a disaster response system. Ex. 1005 ¶¶ 17, 35.

The method illustrated in Figure 3 begins at step 305, where a server requests location information from mobile devices and populates corresponding database entries using this information. Ex. 1005 ¶ 36. A determination is made as to whether a disaster has occurred (step 310) and if so, the method proceeds to step 315 where a determination is made as to whether any subscribers have been affected by the disaster. *Id.* This determination may be based on the location information of step 305. *Id.* Step 315 may take into consideration a quantity of subscribers that have manually activated an emergency response plan. *Id.* Then, a subscriber, having an unknown affected status and proximately located to other subscribers that have each manually activated an emergency response plan, can be presumed to be affected by an emergency. *Id.* Further, sufficient subscriber emergency plan activations in a given area may cause step 310 to be automatically evaluated as true for that area. *Id.*

If results of step 310 or step 315 are negative, the method proceeds to step 320, where a check is performed to determine if anyone issued an "Are You OK" request. Ex. 1005 ¶ 36. The method may also wait for a specified period, as shown in step 325, after which the method may repeat step 305. *Id.*

If, per step 315, one or more subscribers are affected by a disaster, the method proceeds to step 330 where a disaster response system determines whether conditions have been satisfied for a user defined plan. Ex. 1005 ¶ 37. If so, programmatic actions associated with that plan may be initiated, as shown at step 332. *Id.* Otherwise, a set of default actions for

the subscriber can be taken (step 334). *Id.* For example, a master contact may be contacted and informed of the status indicator and the location information of the mobile device, other contacts associated with the subscriber may be contacted, or a Web site containing subscriber status information is updated with the subscriber's status indicator and location. *Id.* Concerned parties, such as family members, may be granted access to the Web site, through which they can look-up the last known location and situational status of the subscriber. *Id.*

An affirmative response at step 320 leads to step 335, where a server of a disaster response system requests conditions for each affected or queried subscriber. Ex. 1005 ¶ 38. Then, at step 340, a time-stamp response to each of these queries is placed in a corresponding database entry, and if no response is received within a predetermined time period, the response field is populated with an "Unknown" indication. *Id.* When all responses have been determined, responses are sent (step 345) to each concerned party and/or to status reporting systems (such as the aforementioned Web site). *Id.* At step 350, a troubled subscriber timeout threshold is checked, where the threshold is associated with potentially threatened subscribers (such as users having an "Unknown" status, and subscribers who set a status indicator to indicate that they were not alright). *Id.* ¶ 39. When the threshold has been exceeded, the method loops to step 335, where the server requests condition information for the potentially threatened subscribers. *Id.*

2. Mitchell

Mitchell is titled "Real Time Automatic Headcount System," and relates to "an intelligent crisis headcount system which is operable to account for all persons associated with a site during a crisis event in real

time." Ex. 1013, code (54), ¶ 1 (emphasis and capitalization omitted). Mitchell's real time automatic headcount system is configured with a portable transmitter operated by a crisis coordinator, to output an alert signal which is received by a plurality of receivers coupled to respective persons associated with a crisis-event site. *Id.* at code (57). The receivers each generate an acknowledgement signal transmitted via a central processing unit to the transmitter. *Id.* Upon receiving the acknowledgement signal, the central processing unit is operable to update a check list of all persons associated with the crisis-event site, identify those who have not been accounted for, and implement back-up procedures for locating and accounting for the previously unaccounted persons, in real time. *Id.*

3. Analysis

a. Asserted Obviousness of Claims 1, 3–8, 10–13, 15, and 16 over Gage (Ground 1)

As to Ground 1, we begin by addressing Petitioner's contentions and Patent Owner's arguments with respect to the limitations of independent claim 1 in sections *i-iv*, the limitations of independent claim 8 in sections *v*, and the limitations of independent claim 13 in section *vi*. We then address the limitations of the dependent claims in section *vii*.

i. Preamble – a method of "accessing situation related information" (claim 1)

Petitioner contends that Gage discloses the preamble. Pet. 22–24. In particular, Petitioner contends that "Gage discloses 'a method for reporting a status indicator' (*situation related information*) to a disaster response system" during a disaster such as "a hurricane, flood, fire, tsunami, and the like." *Id.* at 22 (citing Ex. 1005, ¶ 19, Abstract). According to Petitioner,

the "disaster [in Gage] is . . . a *situation*, as claimed," and the "status indicator" communicated by subscribers to the disaster response system indicates "whether the subscriber [] is alright or is in need of help due to the disaster." *Id.* at 22–23 (citing Ex. 1005 ¶¶ 19–20, 26–27, 31, Figs. 1–2; Ex. 1003 ¶¶ 71–73). "Thus, by receiving the status indicators, the disaster response system *accesses situation related information*." *Id.* at 23 (citing Ex. 1003 ¶ 72).

Patent Owner does not present arguments addressing the specific merits of Petitioner's contentions with respect to the preamble. *See generally* PO Resp. Nonetheless, the burden remains on Petitioner to demonstrate unpatentability. *See Dynamic Drinkware, LLC v. Nat'l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015).

Having reviewed all of Petitioner's assertions regarding the preamble in claim 1, as well as the supporting evidence, on this record, and by a preponderance of the evidence, we determine that Petitioner has shown that Gage teaches a method of "accessing situation related information" as recited in claim 1.[6]

[6] Because we find availing Petitioner's contention that Gage teaches the preamble, we do not determine whether the preamble is limiting. *See Nidec*, 868 F.3d at 1017 (noting that "we need only construe terms 'that are in controversy'" (quoting *Vivid*, 200 F.3d at 803)).

ii. "receiving an indication of an occurrence of a situation;" "forming a situational network related to the occurrence of the situation with a plurality of participant devices determined to be geographically proximate to the situation," "each of the participant devices corresponding to a participant in the situational network" (claim 1)

Petitioner contends, when a disaster is detected, Gage discloses that a "centrally located disaster response system" queries mobile devices of subscribers located near the disaster for status indicators. Pet. 26 (citing Ex. 1005 ¶ 9). According to Petitioner, Gage's disaster response system receives messages indicating that subscribers have activated an "emergency response plan," and these received messages "indicate the occurrence of a disaster (i.e., *an occurrence of a situation*)." *Id.* at 24–25 (citing Ex. 1005 ¶¶ 28, 36, Fig. 3).

Further, Petitioner contends that a POSITA would have understood that Gage's disaster response system "*forms a situational network* by connecting with subscribers 132–134 in the disaster region 110 using one or more . . . communication channels for querying subscribers' situation status" and "to enable subscribers 130–134 to communicate with system 120." Pet. 26–27 (citing Ex. 1005 ¶¶ 9–10, 21, 25, 31, 33, 36, 38, Figs. 1, 3; Ex. 1003 ¶¶ 84–85). Petitioner explains that "Gage's subscriber status reporting system comprises a *situational network*" as claimed because, upon determining that a disaster has occurred, and that one or more users are located proximate the disaster, "the disaster recovery system establishes connections with the users' mobile devices to 'contact' the users" through the established communication channels and disaster relief systems or agencies. *Id.* at 27–28 (citing Ex. 1005 ¶¶ 9, 10, 21, 25, 31, 33, 36, 38, Figs.

1, 3; Ex. 1003 ¶¶ 84–87).

According to Petitioner, Gage's "situational network" is formed with a plurality of participant devices determined to be geographically proximate to the situation because Gage's "subscriber devices 132–134 [are] located in the disaster region." Pet. 28–29 (citing Ex. 1005 ¶¶ 9, 19, 36, Fig. 1; Ex. 1003 ¶ 88). Petitioner references Gage's Fig. 1 showing a "disaster region 110 [that] can include multiple mobile communication zones 112–114 within which included subscribers 132–134 can communicate a status indicator" whereby "subscribers 132–134 inside or proximate to [] disaster region 110 communicate a status indicator to the system 120 through various communication options." *Id.* (citing Ex. 1005 ¶¶ 9, 19, 25, 36). Thus, Petitioner contends that Gage's disaster response system forms the "situational network" with devices 132–134 that are determined to be geographically proximate to the situation. *Id.*

Petitioner then contends that, in Gage, "each of the participant devices in its situational network *corresponds to a participant in the situational network*," for example, each of subscriber devices 132–134 is associated with a subscriber. *Id.* at 29 (citing Ex. 1005 ¶¶ 19, 26, Fig. 2; Ex. 1003 ¶ 89).

In response, Patent Owner contends that the Petition fails to demonstrate Gage discloses a "situational network" because "Gage's alleged situational network is not a network ***created in response to an event or situation***," but rather Gage's alleged situational network and the connections within it "exist ***prior to*** the event or situation." PO Resp. 5. That is, according to Patent Owner, Gage's disaster response system is a network including participant devices formed prior to the occurrence of an event or

situation. *Id.* at 7.

Patent Owner contends that the server of Gage's disaster response system is in communication with subscribers' mobile devices and requests their location information "***before*** the system even detects a disaster has occurred." PO Resp. 5–6 (citing Ex. 1005 ¶ 36, Fig. 1; Ex. 2009 ¶ 57). According to Patent Owner, to send location queries to subscribers' mobile devices, receive corresponding locations, and then populate those locations into a database would require all subscribers to already be part of Gage's disaster response system prior to the occurrence of an event or situation. *Id.* (citing Ex. 1005 ¶36, Fig. 1; Ex. 2009 ¶ 57). Patent Owner contends that the '345 patent describes the claimed "proximity based situational network" as a network that is "not pre-formed." *Id.* at 9–10 (citing Ex. 1001, 5:35–45, 5:58–65). Patent Owner distinguishes the claimed "situational network" from Gage's network on the additional basis that Gage's network is "a ***pre-formed*** network with persistent connections between the subscribers' devices and the disaster response system" and not a network "***dynamically*** formed in response to an event or situation." *Id.* at 10–11.

Furthermore, Patent Owner contends that, in Gage, "***all subscribers***, whether geographically proximate to the situation," are queried by the centrally located disaster response system] for their locations when a disaster is detected, such that "Gage's entire subscriber base is included its alleged situational network." PO Resp. 11 (citing Ex. 1005 ¶ 9). Patent Owner submits that, since all subscribers are included in the location queries, Gage's alleged situational network is not formed with subscriber devices determined to be geographically proximate to the situation because its system includes subscribers that are not geographically proximate to the

situation to be part of the network. *Id.* at 11–12. As such, Patent Owner contends that Gage fails to disclose a situational network formed with "participant devices ***determined to be geographically proximate to the situation***." *Id.*

We find Patent Owner's arguments unavailing. In particular, by arguing that Gage's alleged situational network is not a network created in response to an event or situation because the connections within it "exist[s] prior to the event or situation" (PO Resp. 5), Patent Owner is relying on its proposed claim construction of "situational network" as excluding pre-existing networks, with which, as discussed above in Section II(B)(1), we do not agree.

As Petitioner points out, in Gage, when a disaster is detected, the centrally located disaster response system queries mobile devices of subscribers located near the disaster for status indicators. Pet. 26 (citing Ex. 1005 ¶ 9; Ex. 1003 ¶¶ 80–83); *see also* Pet. Reply 7. In particular, as shown in Figure 3, Gage's method comprises determining whether a disaster has occurred (step 310) and if so, based on location information, determining whether any subscribers have been affected by the disaster (step 315), wherein a server of a disaster response system requests conditions for each affected or queried subscriber (step 335). Ex. 1005 ¶¶ 36–38.

We find availing Petitioner's contention that "Gage forms a *situational network related to the occurrence of the disaster*" (Pet. 26), as the contention is consistent with the teachings of Gage. In particular, we agree with Petitioner that Gage's disaster recovery system establishes multiple communication/information transmission options to enable subscribers to communicate with the disaster response system. *Id.*; *see also*

Ex. 1005 ¶¶ 25, 36–38.

We further find availing Petitioner's contention that "Gage 'requests status indicators' from users who are geographically proximate to a disaster." Pet. Reply 7 (citing Ex. 1005 ¶¶ 9–10, 25, 36, 38, Fig. 3). As Petitioner points out, Gage forms these "ad hoc networks" in response to a disaster to facilitate communications with its disaster response system. *Id.* at 8. In particular, Gage "states that the 'ad hoc networks can be ***dynamically*** established (i.e., through BLUETOOTH functionality of mobile telephones) to enable subscribers 130–134 to convey status and location.'" *Id.* (citing Ex. 1005 ¶¶ 23–25; Ex. 1033 ¶¶ 27–28; Ex. 1003 ¶¶ 64, 83–87). We find availing Petitioner's contention, which is supported by Dr. Cooperstock's evidentiary testimony that, to obtain a status indicator, Gage's disaster response system would form a new connection (e.g., via one of the dynamically established ad hoc networks) with the mobile devices located near the disaster. *Id.* at 8–9 (citing Ex. 1005 ¶¶ 9–10, 25, 36, 38, Fig. 3; Ex. 1033 ¶¶ 27–28).

Although Patent Owner submits that Gage's alleged situational network is not formed with subscriber devices determined to be geographically proximate to the situation (PO Resp. 11–12), we find availing Petitioner's contention that Gage forms a situational network that queries (i.e., establishes a new connection with) only those subscribers that are geographically proximate to a disaster. Pet. Reply 10–11. In particular, as Petitioner points out, Gage discloses that, when a subscriber is proximate to a disaster area, the subscriber's device can be queried for a status indicator and for an optional user provided message such that Gage's "'status indicator' (a new form of connection) goes to only those subscribers

that are 'proximate' to the disaster area," and thus, it does not go to all subscribers as Patent Owner argues. *Id.* at 10; *see also* Ex. 1005 ¶¶ 9, 19–21, 23–25, 36, Fig. 1).

As Petitioner points out, the '345 patent discloses "situational networks" where some participants, like those in Gage, may have a previous connection. Pet. 27 (citing Ex. 1001, 4:3–10, 7:29–51); *see also* Pet. Reply 7 ("the '345 patent suggests that some participants may already be connected, and the 'situational network may be established using the framework of an N-dimensional social network (NDSN)'") (citing Ex. 1001, 4:10–15, 7:52–59). For example, the '345 patent states that, "*[s]ome* or all of the participants included in the situational network (SitNet) 3000 *may have no prior knowledge of or connection or contact with each other or other participants of the situational network* through any other type of social network or personal interactions." Ex. 1001, 4:10–15 (emphasis added).

Petitioner explained during the hearing that, like Gage, the '345 patent discloses that, to form a situational network, "devices 402 have to be connected somehow to . . . network 900 in order to communicate with that network 900." Tr. 10:6–7. According to Petitioner, "[i]f there were no pre-existing connection between device 402 and network 900, network 900 would have no means, no way of knowing how to communicate with those devices that were proximate to the disaster." *Id.* at 10:10–13. And as Petitioner also points out, even Patent Owner previously construed a "situational network" as "a network that is a subset of a larger network." *See* Pet. Reply 3 (citing Ex. 2007, 2).

Thus, we find availing Petitioner's contention that a POSITA would have understood that Gage's "disaster response system *forms a situational*

network by connecting with subscribers 132-134 in the disaster region 110 using one or more . . . communication channels for querying subscribers' situation status." Pet. 27; *see* Ex. 1005, Fig. 1. We agree with Petitioner that the '345 patent similarly discloses that situational networks are formed by causing connections to be established between, within or among a set of participants. Pet. 27; *see* Ex. 1001, 4:3–10, 7:29–51.

In its Sur-reply, Patent Owner adds that, in order for a device that is part of an existing network to be included in the formation of a situational network, the device would have to have a connection at "Layer 7." PO Sur-reply 3–4. Patent Owner then argues that "Gage's alleged situational network and the logical, Layer 7 connections within it . . . exist prior to the event or situation." *Id.* 8–9 (citing Ex. 2009 ¶ 56). According to Patent Owner, Gage is "merely using an existing logical, Layer 7 connection to communicate data between applications" with this querying occurring "(1) prior to the occurrence of an event or situation and (2) over pre-existing connections to subscribers' mobile devices." *Id.* at 10 (citing Ex. 1027, 15:12–16:22, 45:22–46:3). Although Patent Owner acknowledges that Gage discloses "ad hoc networks," Patent Owner argues that these ad hoc networks connect through Bluetooth communication channels, and "are not part of the Application Layer 7," which "is the only layer associated with connections in a social network." *Id.* at 10–12 (citing Ex. 1027, 15:15–22, 21:18–20).

We find unavailing Patent Owner's contentions. PO Sur-reply 3–4, 8–12. As discussed above in Section II(B)(1), claim 1 does not require that the situational network communicates through a particular connection, and does not preclude communicating using existing logical, Layer 7

connections. *See* Ex. 1001, 34:11–15. That is, although Patent Owner argues that Application Layer 7 "is the only layer associated with connections in a social network" (PO Sur-reply 10–12), nothing in the claims limits the "situational network" to a "social network" with only Layer 7 connections.

Here, Patent Owner acknowledges that Gage forms dynamic, ad hoc networks. PO Sur-reply 10–12. Thus, although Patent Owner argues that Gage's ad hoc networks are not "part of the Application Layer 7," as discussed, the claims do not require the networks to be part of Layer 7. *Id.* And as Petitioner points out, "[t]here are multiple different communication means that Gage discloses." Tr.9:7–8. In particular, Gage states that "ad hoc networks can be dynamically established (i.e., through BLUETOOTH functionality of mobile telephones) to enable subscribers 130–134 to convey status and location." Ex. 1005 ¶¶ 23–25. We find availing Petitioner's reliance on Gage for teaching ad hoc networks dynamically formed through connections, such as Bluetooth connections, with the subscribers proximate to a disaster. *See* Pet. Reply 7–8.

Having reviewed all of Petitioner's assertions regarding these limitations in claim 1, as well as the supporting evidence, on this record, and by a preponderance of the evidence, we determine that Petitioner has shown that Gage teaches "receiving an indication of an occurrence of a situation," and "forming a situational network related to the occurrence of the situation with a plurality of participant devices determined to be geographically proximate to the situation," wherein "each of the participant devices corresponding to a participant in the situational network," as recited in claim 1.

iii. "presenting a roll call query to each of the plurality of participant devices soliciting a reply related to a status of the participant;" "receiving a status response from one or more of the participants;" and "aggregating the status responses from responsive participants into a roll call list" (claim 1)

Petitioner contends that, in Gage, when a subscriber is proximate to a disaster area, the subscriber's device is queried for a status indicator and for an optional user provided message, wherein "[t]he query is a *roll call query*" as claimed because "it is provided to the subscriber devices that are 'proximate to a disaster area' (i.e., *participant devices*)," and "solicits a 'status indicator' and 'message' from subscriber (i.e., *a reply related to a status of the participant*)." Pet. 30 (citing Ex. 1005 ¶¶ 9, 10, 27, 30, Fig. 2; Ex. 1003 ¶¶ 92–93); *see also id.* at 37. Petitioner further contends that Gage discloses that "a user can enter their status indicator and optional message [*status response*], which is thereafter automatically conveyed to the disaster response system." *Id.* at 31–32, 35–36, 37 (citing Ex. 1005 ¶¶ 9, 25, 27, 30, 34, 38; Ex. 1003 ¶¶ 95–96, 107, 114, 116). Petitioner then contends that Gage discloses "compiling and storing the status indicators in a database," as well as "aggregating the status indicators (responses) in 'a Web site containing subscriber status information' that is 'updated with the subscriber's status indicator and location.'" *Id.* at 32–33, 36, 37 (citing Ex. 1005 ¶¶ 21, 37–38, 45; Ex. 1003 ¶¶ 98–102, 106, 114, 116–117).

Patent Owner does not present arguments addressing the specific merits of Petitioner's contentions with respect to these limitations of claim 1. *See generally* PO Resp. Nonetheless, the burden remains on Petitioner to demonstrate unpatentability. *See Dynamic Drinkware*, 800 F.3d at 1378.

Having reviewed all of Petitioner's assertions regarding these limitations in claim 1, as well as the supporting evidence, on this record, and by a preponderance of the evidence, we determine that Petitioner has shown that Gage teaches "presenting a roll call query to each of the plurality of participant devices soliciting a reply related to a status of the participant;" "receiving a status response from one or more of the participants;" and "aggregating the status responses from responsive participants into a roll call list," as recited in claim 1.

iv. Claim 1 Conclusion

Based on the complete record presented, Petitioner has shown that Gage teaches all limitations of claim 1. Thus, we determine that Petitioner has shown by a preponderance of the evidence that the subject matter of claim 1 would have been obvious over Gage.

v. Independent claim 8

Independent claim 8 recites a method of "providing situation related information to a situation authority via a situational network," wherein the method comprises "receiving, by a participant device, a roll call query soliciting a reply related to a status of a participant based on the participant being determined, by the situation authority, to be geographically proximate to the situation," "receiving, by the participant device, a selection of a status response from the participant," and "sending the status response to the central authority, wherein the status response is included in a roll call list." Ex. 1001, 34:46–57.

Petitioner generally refers to its contentions with respect to claim 1. Pet. 34–36. In particular, Petitioner contends that Gage teaches a subscriber device that communicates a status indicator to the disaster response system

through a subscriber status reporting system that implements a "situational network" configured for use during disasters. *Id.* at 34 (citing Ex. 1005 ¶¶ 19, 25). Petitioner additionally contends that Gage's "disaster response system" is a "situation authority" because the disaster response system detects an occurrence of a disaster affecting a region, receives and aggregates information related to the disaster, and then provides the information to various participants in the network. *Id.* (citing Ex. 1005 ¶¶ 8–9, 21, 36, 45; Ex. 1003 ¶ 104).

With respect to the "situational network" limitation, Patent Owner provides the same arguments for claim 8 as for claim 1. PO Resp. 4–12. In particular, Patent Owner contends that Gage's network is not created in response to an event or situation because it exists prior to the event or situation, and is not formed with participant devices determined to be geographically proximate to the situation. *Id.* at 5–11.

Patent Owner also contends that the Petition also fails to demonstrate that Gage discloses the claimed "situation authority" because Gage's disaster response system "is not external to what the Petitioner believes to be the situational network." PO Resp. 12–15. Furthermore, according to Patent Owner, Petitioner has presented "contradictory assertions" by identifying Gage's disaster response system as part of the "situational network," wherein the disaster response system cannot also be a "situation authority" because such would require Gage's disaster response system to be outside of or external to itself. *Id.* at 13–15.

In its Reply, Petitioner points out that "[n]othing in the claim requires a situation authority to be external to the situational network or prohibits a situation authority from being a part of the situational network." Pet. Reply

12. Nevertheless, Petitioner contends that, even if the situation authority were to be external, Gage's disaster response system is "external to the disaster region as seen from Figure 1 and therefore discloses an 'external entity' capable of performing the functions recited in the claims." Pet. Reply 12–13 (citing Ex. 1005 ¶¶ 8, 22–23; Ex. 1026 ¶ 19).

Petitioner then explains that, contrary to Patent Owner's assertions, the Petition shows that "Gage's disaster response system comprises a server that connects with various participants to form a situational network," and "is not the situational network itself." Pet. Reply 12–13 (citing Pet. 34; Ex. 1003 ¶ 104). Thus, Petitioner contends that there are no "contradictory assertions" in the Petition, as Patent Owner argues. PO Resp. 13–15.

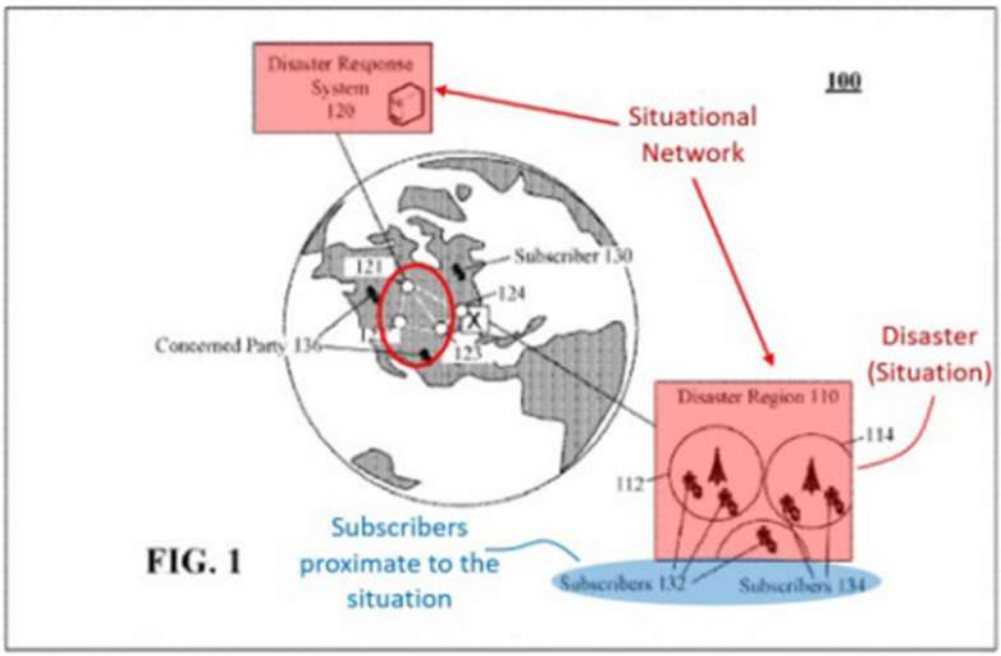
We find Patent Owner's arguments unavailing. In particular, as discussed above in Sections II(D)(3)(a)(ii), we find availing Petitioner's reliance on Gage for teaching the "situational network" as claimed.

We also find unavailing Patent Owner's contention that Gage fails to teach a "situation authority." PO Resp. 12–15; PO Sur-reply 13–14. By contending that Gage's disaster response system cannot be a "situation authority" external to the situational network (PO Resp. 12), Patent Owner is arguing for a construction of "situation authority," with which, as discussed above in Section II(B)(2), we do not agree. As discussed above in Section II(B)(2), although the '345 patent identifies situation authorities 207 as "external entities," the patent also identifies these external entities as participants in the situational network 3000. *See* Ex. 1001, 4:3–8, 16–17; Fig. 1.

As Petitioner contends, Gage's disaster response system discloses the claimed "situation authority" because "it 'detect[s] an occurrence of a

disaster affecting a region' (situation), receives and 'aggregate[s]' information related to the disaster, and provides the information to various participants in the network, such as disaster relief agencies and rescue personnel.'" Pet. Reply 11–12 (citing Ex. 1005 ¶¶ 8–9, 21, 36, 45; Ex. 1003 ¶ 104). We agree with Petitioner that this is consistent with the '345 patent's description of "situation authorities." *Id.* (citing Ex. 1001, 4:16–20, 25:61–26:25).

We find availing Petitioner's contention that Gage's disaster response system is "external to the disaster region as seen from Figure 1." Pet. Reply 13 (citing Ex. 1005 ¶¶ 8, 22–23, Fig. 1; Ex. 1026 ¶ 19). Petitioner provides an annotated Figure 1 of Gage, shown below, to illustrate its connection.



EX1005, FIG. 1 (annotated).

Pet. Reply 13. The above annotated Figure 1 of Gage in the Petition illustrates system 100 for informing the situation status of "subscribers proximate to the situation" 132, 134 (blue), who may have been affected by

a disaster. *Id.*; *see also* Ex. 1005 ¶ 19. As shown in the above annotated Figure 1 of Gage, "Situational Network" (red) comprises "Disaster Response System 120," "Disaster Region 110," and concerned parties 135 (participants), wherein Disaster Response System 120 is shown external to Disaster Region 110. Pet. Reply 13.

As shown in the above annotated Figure 1 of Gage, Petitioner shows that "Disaster Response System 120" connects with various participants to form "Situational Network." Pet. Reply 12–13 (citing Pet. 34; Ex. 1003 ¶ 104). As we find that the claims do not require that the disaster response system be external to the situational network, we do not find availing Patent Owner's contention that Gage's Disaster Response System 120 cannot also be a "situation authority" because such would require Disaster Response System 120 to be outside of or external to itself. PO Resp. 13–15. Thus, we agree with Petitioner that there are no "contradictory assertions" in the Petition, contrary to Patent Owner's argument. Pet. Reply 12–13.

Having reviewed all of Petitioner's assertions regarding this limitation in claim 8, as well as the supporting evidence, and Patent Owner's contentions and supporting evidence on the contrary, by a preponderance of the evidence, we determine that Petitioner has shown that Gage teaches a "situation authority," i.e., "external entity," as recited in claim 8.

On this record, and by a preponderance of the evidence, we determine that Petitioner has shown that Gage teaches or suggests a "method of providing situation related information to a situation authority via a situational network" employing the steps recited in claim 8.

vi. Independent claim 13

Claim 13 recites a "system for accessing situation related information" comprising "a central server, corresponding to a situation authority" that is configured to perform the steps similar to those in claim 1, including "receive an indication of an occurrence of a situation," "form a situational network related to the occurrence of the situation," "present a roll call query," "receive a status response," and "aggregate the status responses." *See* Ex. 1001, 35:10–36:3. Claim 13 further recites a "database corresponding to the central server for storing the responses and the roll call list." *Id.* at 36:4–5.

Petitioner generally refers to its arguments with respect to claim 1. Pet. 36–39. Further, Petitioner contends that "Gage discloses 'a centralized disaster response system' providing 'situational status,'" wherein the disaster response system "includes a 'disaster response server' (*central server*)." *Id.* at 36 (citing Ex. 1005 ¶¶ 8–10). Petitioner asserts that Gage also explains that the disaster response system is implemented in "server 120." *Id.* at 36–37 (citing Ex. 1005 ¶¶ 21, 47).

Petitioner then contends that Gage discloses "data store 261 coupled to . . . disaster response system 230 . . . configured to 'store digital information.'" Pet. 38 (citing Ex. 1005 ¶ 34, Fig. 2). According to Petitioner, Gage's database "has a corresponding entry for each response, and relates the status responses to the mobile devices (*roll call list*)." *Id.* at 39 (citing Ex. 1003 ¶¶ 116–117).

Patent Owner provides generally the same arguments as those for claim 1 discussed above in section II(D)(3)(a)(ii) that the Petition fails to demonstrate that Gage teaches the claimed "situational network." PO Resp.

4–12. Patent Owner further relies on the same argument as those for claim 8 discussed above in section II(D)(3)(a)(v) that Petition fails to demonstrate that Gage teaches the claimed "situation authority." *Id.* at 12–15.

As discussed above in sections II(D)(3)(a)(ii) and (v), we find Patent Owner's arguments unavailing. We have reviewed Petitioner's explanations and supporting evidence regarding the limitations of claim 13 (Pet. 36–39). On this record, and by a preponderance of the evidence, we determine that Petitioner has shown that Gage teaches or suggests a system for accessing situation related information: comprising "a central server, corresponding to a situation authority" that is configured to perform the steps recited in claim 13.

vii. Dependent claims 3–7, 10–12, 15, and 16

Claims 3–7 depend directly from claim 1, claims 10–12 depend directly from claim 8, and claims 15 and 16 depend directly from claim 13. Ex. 1001, 34:30–45, 34:65–35:7, 36:12–18. Hence, claims 3–7 incorporate all of claim 1's limitations, claims 10–12 incorporate all of claim 8's limitations, and claims 15 and 16 incorporate all of claim 13's limitations. *See* 35 U.S.C. § 112 ¶ 4.

Petitioner provides detailed explanations as to how Gage teaches or suggests the limitations recited in dependent claims 3–7, 10–12, 15, and 16, citing Dr. Cooperstock's testimony for support. Pet. 39–43 (citing Ex. 1005 ¶¶ 8, 9, 11, 19, 21, 23, 25, 27, 28, 31–32, 37–39, Figs. 1, 3; Ex. 1003 ¶¶ 119, 121, 123–128, 131–132, 135, 138).

As to claim 4, Patent Owner relies on the same argument as those for claim 8 and 13 that Gage fails to teach the claimed "situation authority" (PO Resp. 12–15), with which, as discussed above in section II(B)(3)(a)(iv) and

(v), we do not agree. Patent Owner does not present arguments addressing the specific merits of Petitioner's contentions with respect to dependent claims 3, 5–7, 10–12, 15, and 16. *See generally* PO Resp.

Having reviewed Petitioner's arguments and supporting evidence in the complete record, we conclude Petitioner has demonstrated by a preponderance of the evidence that Gage teaches or suggests the subject matter in dependent claims 3–7, 10–12, 15, and 16.

viii. Ground 1 Conclusion

In light of the above analysis, we determine that Petitioner's evidence and arguments are sufficient to demonstrate, by a preponderance of the evidence, that claims 1, 3–8, 10–13, 15, and 16 under Ground 1 would have been obvious over Gage.

b. Asserted Obviousness of Claims 2, 9, and 14 over Gage and Mitchell (Ground 2)

Petitioner asserts that claims 2, 9, and 14 would have been unpatentable over Gage and Mitchell. Pet. 44–49. In particular, Petitioner contends that a POSITA reading Gage, "would have understood that there could be many reasons for a subscriber to fail to respond to the disaster response system queries" (*id.* at 44), and "would have sought out references similar to Gage that additionally teach techniques for enabling other users or subscribers to provide status updates for non-responsive subscribers" (*id.* at 45).

According to Petitioner, "Mitchell discloses a similar system as Gage," wherein "an 'intelligent headcount system' . . . 'ensur[es] that all persons have been accounted for . . . in real time in response to an emergency or disaster declaration" (Pet. 45 (citing Ex. 1013 ¶ 11)), wherein

the POSITA "would have been motivated to modify Gage to enable accounted for (responsive) subscribers to provide information relating to the status of unaccounted for (nonresponsive) subscribers, as taught by Mitchell." *Id.* at 46 (citing Ex. 1003 ¶¶ 142–144).

In the Patent Owner's Response, Patent Owner asserts that "[f]or the reasons detailed *supra*, Gage fails to disclose all the elements of independent claims 1, 8, and 13 upon which claims 2, 9, and 14, respectively, depend," wherein "[t]he Petition fails to assert Mitchell . . . overcomes the deficiencies" of Gage. PO Resp. 15; *see also* PO Sur-reply 14–15 (stating same).

As discussed above in Section II(D)(3)(a), we find unavailing Patent Owner's contentions that Gage fails to disclose all the elements of independent claims 1, 8, and 13 from which claims 2, 9, and 14 respectively depend. We have also reviewed Petitioner's arguments and supporting evidence that the combination of Gage and Mitchell teaches the limitations of claims 2, 9, and 14. Pet. 44–49.

Further, we have reviewed Petitioner's explanations and supporting evidence regarding Petitioner's proffered reasoning to combine the references, and we agree with and adopt them as our own. As Petitioner asserts, "Mitchell discloses a similar system as Gage," wherein a POSITA "would have been motivated to modify Gage to enable accounted for (responsive) subscribers to provide information relating to the status of unaccounted for (nonresponsive) subscribers, as taught by Mitchell." Pet. 45–46 (citing Ex. 1003 ¶¶ 142–144). Because Patent Owner does not separately address Petitioner's proffered reasoning for combining the

references, the Petitioner's positions regarding the combination of references stand unopposed as a part of this trial.

Based on the record during trial, we conclude that Petitioner has demonstrated by a preponderance of the evidence that the combined disclosures in Gage and Mitchell teaches the subject matter in dependent claims 2, 9, and 14, and that Petitioner has shown that a POSITA would have had a reason to combine the teachings of Gage and Mitchell. As such, we determine that Petitioner has provided articulated reasoning with rational underpinnings that would support a conclusion of obviousness for claims 2, 9, and 14.

In light of the above analysis, we determine that Petitioner's evidence and arguments are sufficient to demonstrate, by a preponderance of the evidence, that claims 2, 9, and 14 under Ground 2 would have been obvious over Gage and Mitchell.

E. Asserted Obviousness of Claims 1, 3, 4, 6–8, 10–13, and 15 over Shida (Ground 3); and of claims 2, 5, 9, 14, and 16 over Shida and Sinha (Ground 4)

Petitioner contends that claims 1, 3, 4, 6–8, 10–13, and 15 of the '345 patent would have been obvious over Shida. Pet. 12, 49–68. Petitioner also contends that dependent claims 2, 5, 9, 14, and 16 would have been obvious over Shida in further view of Sinha. *See id.* at 12, 68–78. Because the Gage ground (Ground 1) and the Gage-Mitchell ground (Ground 2) together are dispositive as to all challenged claims 1–16 (*see supra* Sections II(B)(3)(a)-(b)), we do not reach Petitioner's challenge of claims 1, 3, 4, 6–8, 10–13, and 15 based on obviousness over Shia (Ground 3) or of claims 2, 5, 9, 14, and 16 based on obviousness over Shia and Sinha (Ground 4). *See SAS Inst. Inc. v. Iancu*, 138 S. Ct. 1348, 1359 (2018) (holding a petitioner "is entitled

to a final written decision addressing all of the claims it has challenged"); *Bos. Sci. Scimed, Inc. v. Cook Grp. Inc.*, 809 F. App'x 984, 990 (Fed. Cir. 2020) (non-precedential) (recognizing that "[t]he Board has the discretion to decline to decide additional instituted grounds once the petitioner has prevailed on all its challenged claims").

III. MOTION TO AMEND ANALYSIS

In an *inter partes* review, amended claims are not added to a patent as of right, but rather must be proposed as a part of a motion to amend. 35 U.S.C. § 316(d). In its Contingent Motion to Amend, Patent Owner moves to substitute original claims 1–16 with proposed substitute claims 17–32, respectively (contingent upon a finding of unpatentability with respect to the original challenged claims 1–16). MTA 1. Petitioner opposes the addition of the substitute claims, asserting, among other reasons, that the proposed substitute claims are unpatentable as obvious and as patent ineligible under 35 U.S.C. § 101. Opp. 1–24.

The Board must assess the patentability of proposed substitute claims "without placing the burden of persuasion on the patent owner." *Aqua Prods., Inc. v. Matal*, 872 F.3d 1290, 1328 (Fed. Cir. 2017) (en banc); *see also Lectrosonics, Inc. v. Zaxcom, Inc.*, IPR2018-01129, Paper 15 at 3–4 (PTAB Feb. 25, 2019) (precedential).

Petitioner must prove that the proposed substitute claims are unpatentable by a preponderance of the evidence. *Bosch Auto. Serv. Sols., LLC v. Matal*, 878 F.3d 1027, 1040 (Fed. Cir. 2017); *Lectrosonics*, Paper 15 at 3–4.

As explained further below, having considered the arguments and evidence presented by the parties at trial, we determine Patent Owner has

met its statutory and regulatory burden for proposed substitute claims 17–32 by a preponderance of the evidence, however, Petitioner has met its burden of showing, by a preponderance of the evidence, that the proposed substitute claims are unpatentable.

A. Whether Patent Owner Has Met Statutory and Regulatory Requirements

Patent Owner bears the burden to show, by a preponderance of the evidence, that its motion to amend complies with the requirements of 35 U.S.C. § 316(d)(1), (3) and 37 C.F.R. § 42.121(a)(2), (a)(3), (b)(1), and (b)(2). 37 C.F.R. § 42.121(d)(1).

For the reasons discussed below, Patent Owner has shown by a preponderance of the record that it has satisfied the statutory and regulatory requirements associated with filing a motion to amend. *See* 37 C.F.R. § 42.121(e)(1).

1. Reasonable Number of Substitute Claims

A motion to amend must propose a reasonable number of substitute claims. 35 U.S.C. § 316(d)(1)(B); 37 C.F.R. § 42.121(a)(3).

Patent Owner has shown it proposes a reasonable number of substitute claims because it proposes one substitute claim for each of originally challenged claims 1–16. MTA 4, 23–28 (App. A). Petitioner does not argue otherwise. *See generally* Opp.; Pet. Sur-reply MTA.

2. Responsive to Ground of Unpatentability

A motion to amend must respond to a ground of unpatentability involved in the proceeding. 37 C.F.R. § 42.121(a)(2)(i).

Patent Owner has responded to a ground of unpatentability involved in this proceeding by contending that the proposed substitute claims are

patentable over the references asserted in the Petition's challenges. MTA 4, 19–21; Pet. 12. Petitioner does not argue that the Motion is nonresponsive. *See generally* Opp.; Pet. Sur-reply MTA.

3. Scope of Amended Claims

A motion to amend may not enlarge the scope of the claims of the patent. 35 U.S.C. § 316(d)(3); 37 C.F.R. § 42.121(a)(2)(ii).

Patent Owner's Motion does not enlarge the scope of the claims of the patent because the Motion only adds narrowing limitations. *See* MTA 5–6, App. A. Petitioner does not argue otherwise. *See generally* Opp.; Pet. Sur-reply MTA.

4. New Matter

A motion to amend may not introduce new subject matter. 35 U.S.C. § 316(d)(3); 37 C.F.R. § 42.121(a)(2)(ii).

Patent Owner's Motion identifies where each limitation in the proposed substitute claims has support in U.S. Patent App. No. 14/861,340 (the "'340 application"), which is the application from which the '345 patent issued. *See* MTA 6–17 (citing Ex. 1002, *passim*); *see also* Ex. 1001, code (21). Patent Owner's Motion also identifies where each limitation in the proposed substitute claims has support in U.S. Patent App. No. 11/924,711 (the "'711 application"), which is the first non-provisional application in the chain of priority of the '345 patent. *See* MTA 6–17 (also noting that "[t]here is continuity of disclosure from this first non-provisional application through the chain of straight-continuation/divisional applications up to the application which resulted in the 345 Patent.") (citing Ex. 2008, *passim*); *see also* Ex. 1001, code (60).

The test for sufficiency of a written description is whether the disclosure "'clearly allow[s] persons of ordinary skill in the art to recognize that [the inventor] invented what is claimed.'" *Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010) (en banc). The disclosure must "reasonably convey[] to those skilled in the art that the inventor had possession of the claimed subject matter as of the filing date." *Id*. Possession means "possession as shown in the disclosure" and "requires an objective inquiry into the four corners of the specification from the perspective of a person of ordinary skill in the art." *Id.*

Here, Patent Owner's citations to the '340 and the '711 applications sufficiently support the proposed substitute claims. *See* MTA 6–17. Petitioner does not argue that the '340 application or the '711 application fails to provide written description support for the proposed substitute claims. *See* Opp.; Pet. Sur-reply MTA.

For these reasons, Patent Owner has met its burden to show by a preponderance of the evidence that the proposed substitute claims contain no new matter.

B. Petitioner's Challenges for Proposed Substitute Claims 17–32

Patent Owner's Motion to Amend proposes substitute claim 17 which amends original claim 1 to additionally recite "forming a situational network related to the occurrence of the situation <u>by establishing an event node hosted by an event node server within a N-dimensional social network and connecting the event node to a plurality of existing nodes within the N-dimensional social network, said plurality of existing nodes corresponding</u> with a plurality of participant devices . . . ." (MTA App. A (underlining highlighting newly added limitations)). Further, in claim 17, the newly

introduced "event node" is involved in the subsequent steps of "presenting a roll call query by the event node to each of the plurality of existing nodes corresponding with the plurality [of] participant devices, said roll call query soliciting a reply related to a status of the participant," and "receiving at the event node a status response from one or more of the participants." *Id.*

The Motion to Amend also proposes substitute claim 24 which amends original claim 8 to additionally recite similar newly added limitations. *Id.* More particularly, claim 24 amends original claim 8 to additionally recite "receiving, by a participant device, a roll call query sent by an event node established within an N-dimensional social network by an event node server of the situation authority, said roll call query soliciting a reply related to a status of a participant," and "sending the status response to the event node of the [[central]] situation authority." *Id.*

The Motion to Amend additionally proposes substitute claim 29 which amends original claim 13 to additionally recite similar newly added limitations. *Id.* More particularly, claim 29 amends original claim 13 to additionally recite "a central server, corresponding to a situation authority, configured to receive an indication of an occurrence of a situation, [[form]] from a situational network related to the occurrence of the situation by establishing an event node hosted by the central server within a N-dimensional social network and connecting the event node to a plurality of existing nodes within the N-dimensional social network, said plurality of existing nodes corresponding with a plurality of participant devices determined to be geographically proximate to the situation," "present by the event node a roll call query to each of the plurality of participant devices,"

and "receive at the event node a status response from one or more of the participants." *Id.*

Petitioner opposes the addition of the substitute claims by asserting that the proposed claims are patent ineligible under 35 U.S.C. § 101 and unpatentable as obvious, which we analyze below. Opp. 1–24. Petitioner bears the ultimate burden to show that any proposed substitute claims are unpatentable. 37 C.F.R. § 42.121(d)(2).

We evaluate these challenged below.

1. Patent Eligibility

Petitioner contends that the proposed substitute claims are patent ineligible under 35 U.S.C. § 101. *See* Opp. 2–3. In particular, Petitioner contends that proposed substitute claim 17, which is representative, is merely directed to: "*collecting* data ('receiving an indication' and 'receiving . . . a status response')," "*manipulating* data ('forming a situational network' and 'aggregating the status responses')," and "*presenting* certain results ('presenting a roll call query' and providing 'a roll call list')." *Id.* at 3–4. According to Petitioner, each of these steps "comprises nothing more than routine data manipulation." *Id.* at 4.

a. Principles of Law

Inventions for a "new and useful process, machine, manufacture, or composition of matter" generally constitute patent-eligible subject matter. 35 U.S.C. § 101 (2018). However, the U.S. Supreme Court has long interpreted 35 U.S.C. § 101 to include implicit exceptions: "[l]aws of nature, natural phenomena, and abstract ideas" are not patentable. *Alice Corp. v. CLS Bank Int'l*, 573 U.S. 208, 216 (2014).

In determining whether a claim falls within an excluded category, we are guided by the Court's two-step framework, described in *Mayo Collaborative Services v. Prometheus Laboratories, Inc.*, 566 U.S. 66 (2012), and *Alice*. *Alice*, 573 U.S. at 217–18 (citing *Mayo*, 566 U.S. at 75–77). In accordance with that framework, we first determine what concept the claim is "directed to." *See Alice*, 573 U.S. at 219 ("On their face, the claims before us are drawn to the concept of intermediated settlement, *i.e.*, the use of a third party to mitigate settlement risk."); s*ee also Bilski v. Kappos*, 561 U.S. 593, 611 (2010) ("Claims 1 and 4 in petitioners' application explain the basic concept of hedging, or protecting against risk.").

Concepts determined to be abstract ideas, and thus patent ineligible, include certain methods of organizing human activity, such as fundamental economic practices (*Alice*, 573 U.S. at 219–20; *Bilski*, 561 U.S. at 611); mathematical formulas (*Parker v. Flook*, 437 U.S. 584, 594–95 (1978)); and mental processes (*Gottschalk v. Benson*, 409 U.S. 63, 67 (1972)). Concepts determined to be patent eligible include physical and chemical processes, such as "molding rubber products" (*Diamond v. Diehr*, 450 U.S. 175, 191 (1981)); "tanning, dyeing, making water-proof cloth, vulcanizing India rubber, smelting ores" (*id.* at 182 n.7 (quoting *Corning v. Burden*, 56 U.S. 252, 267–68 (1854))); and manufacturing flour (*Benson*, 409 U.S. at 69 (citing *Cochrane v. Deener*, 94 U.S. 780, 785 (1876))).

In *Diehr*, the claim at issue recited a mathematical formula, but the Court held that "a claim drawn to subject matter otherwise statutory does not become nonstatutory simply because it uses a mathematical formula." *Diehr*, 450 U.S. at 187; *see also id.* at 191 ("We view respondents' claims as

nothing more than a process for molding rubber products and not as an attempt to patent a mathematical formula."). Having said that, the Court also indicated that a claim "seeking patent protection for that formula in the abstract . . . is not accorded the protection of our patent laws, . . . and this principle cannot be circumvented by attempting to limit the use of the formula to a particular technological environment." *Id.* at 191 (citing *Benson* and *Flook*); *see also, e.g., id.* at 187 ("It is now commonplace that an *application* of a law of nature or mathematical formula to a known structure or process may well be deserving of patent protection.").

If the claim is "directed to" an abstract idea, we turn to the second step of the *Alice* and *Mayo* framework, where "we must examine the elements of the claim to determine whether it contains an 'inventive concept' sufficient to 'transform' the claimed abstract idea into a patent-eligible application." *Alice*, 573 U.S. at 221 (internal quotation marks omitted). "A claim that recites an abstract idea must include 'additional features' to ensure 'that the [claim] is more than a drafting effort designed to monopolize the [abstract idea].'" *Id.* (alterations in original) (quoting *Mayo*, 566 U.S. at 77). "[M]erely requir[ing] generic computer implementation[] fail[s] to transform that abstract idea into a patent-eligible invention." *Id.*

b. USPTO Section 101 Guidance

In January 2019, the U.S. Patent and Trademark Office ("USPTO") published revised guidance on the application of 35 U.S.C. § 101. *See* 2019 Revised Patent Subject Matter Eligibility Guidance, 84 Fed. Reg. 50 (Jan. 7, 2019) ("2019 Guidance" or "2019 Revised Guidance"), updated by USPTO, October 2019 Update: Subject Matter Eligibility (available at https://www.uspto.gov/sites/default/files/documents/peg_oct_2019_update.p

df) ("Update"); *see also* October 2019 Patent Eligibility Guidance Update, 84 Fed. Reg. 55942 (Oct. 18, 2019) (notifying the public of the availability of the Update). "All USPTO personnel are, as a matter of internal agency management, expected to follow the guidance." 2019 Guidance, 84 Fed. Reg. at 51; *see also* October 2019 Guidance Update at 1. The Manual of Patent Examining Procedure ("MPEP") now incorporates this revised guidance and subsequent updates at Section 2106.

Under MPEP § 2106, we first look to whether the claim recites the following:

> (1) any judicial exceptions, including certain groupings of abstract ideas (i.e., mathematical concepts, certain methods of organizing human activities such as a fundamental economic practice, or mental processes); and
>
> (2) additional elements that integrate the judicial exception into a practical application.

MPEP §§ 2106.04(a), (d).

Only if a claim (1) recites a judicial exception and (2) does not integrate that exception into a practical application, do we then look to whether the claim:

> (3) adds a specific limitation beyond the judicial exception that is not "well-understood, routine, [and] conventional activity" in the field; or
>
> (4) simply appends well-understood, routine, conventional activities previously known to the industry, specified at a high level of generality, to the judicial exception.

MPEP § 2106.05(d).

c. Step 2A, Prong 1

Patent eligibility under 35 U.S.C. § 101 is a question that we resolve pursuant to the 2019 Revised Guidance.

Petitioner contends that, under Step 2A, Prong 1, "the substitute claims describe a mental process as well as a method of organizing human activity." Opp. 7. In particular, Petitioner contends that "[p]resenting a 'roll call query' to geographically proximate participants and then receiving and aggregating status responses from those participants are operations that can be performed in the human mind." *Id.*

We find Petitioner's contentions availing. As Petitioner points out, proposed substitute claim 17 recites receiving indication data, forming a network for aggregating data, presenting solicitation data, and then receiving and aggregating the responsive data, which simply amounts to the collection, manipulation, and presentation/display of data. Opp. 3–4. In fact, Patent Owner's expert, Dr. Rubin acknowledges that "forming a situational network" and "aggregating the status responses" as claimed comprise a form of data manipulation. Ex. 1027, 57:18–58:2 ("Q. So forming a situational network, that's creating logical connections. . . . In order to create logical connections, you have to manipulate data. Is that fair? A. Yes"), 58:22–59:8 ("Q. So when you're aggregating that data, that's sort of manipulating that data into a list. Is that fair? A. Yes."). Further, as Petitioner points out, Dr. Rubin acknowledges that the "event node" and "event node server" that Patent Owner seeks to add into substitute claim 17 "amounts to nothing more than 'manipulating data somehow to make [the] attributes' that define the event node." Opp. 5 (citing Ex. 1027, 59:9–15 ("Q. . . . to establish an event node, . . . forming logical object that has attributes . . . That's

manipulating data somehow to make those attributes, fair? A. Yes."); 41:17–20).

The collection, manipulation and display of data has been found to be an abstract process. *See Elec. Power Grp., LLC v. Alstom S.A.,* 830 F.3d 1350 (Fed. Circ. 2016); *Trinity Info Media, LLC v. Covalent, Inc.*, 72 F. 4th 1355 (Fed. Cir. 2023). Here, the collection, manipulation and display of data may be performed by a user based on his or her own judgment and creativity or managing interaction between people following certain guidelines or rules. For example, upon receiving an indication of an occurrence of a situation, users may form a list of participant devices proximate to the situation and collect pertinent information from the participants at the devices using their own judgment, creativity, or simply by following certain guidelines or rules. The fact that forming a situational network related to the occurrence may be done with "an event node established by event node server within a N-dimensional social network" and connecting/linking the event node with "existing nodes corresponding with a plurality of participant devices" does not affect the conclusion that this step may also be performed by the users themselves. As such, we conclude that the claim recites both mental processes, and also the abstract idea of managing interaction between people (*see Interval Licensing LLC v. AOL, Inc.*, 896 F.3d 1335 (Fed. Cir. 2018)). Managing interaction between people is a subcategory of certain methods of organizing human activity, which, along with mental processes, is recognized as an abstract idea under the Guidance. *See* 2019 Guidance, 84 Fed. Reg. at 52.

As illustrated below, we determine that the italicized portions of proposed substitute claim 17 recite concepts that can be performed in the

human mind and/or with pen and paper and/or that is a method of managing interactions between people:

> Claim 17:
>
> *receiving an indication of an occurrence of a situation* (i.e., a user such as an emergency responder receiving an alarm that a disaster is occurring);
>
> *forming a situational network related to the occurrence of the situation by establishing an event node* hosted by an event node server *within a N-dimensional social network and connecting the event node to a plurality of existing nodes within the N-dimensional social network, said plurality of existing nodes corresponding with a plurality of participant devices determined to be geographically proximate to the situation*, each of the participant devices *corresponding to a participant in the situational network* (i.e., the emergency responder, with a pen a paper, creates a list of people related to the disaster, designate a point of contact, and draws up a chart establishing an N-dimensional connections between the point of contact and the people geographically proximate to the disaster);
>
> *presenting a roll call query by the event node to each of the plurality of existing nodes corresponding with the plurality participant device*s, *said roll call query soliciting a reply related to a status of the participant* (i.e., the designated point of contact asking the people in the list as to their status);
>
> *receiving at the event node a status response from one or more of the participants* (i.e., the emergency responder receiving a response from those contacted concerning their status); and
>
> *aggregating the status responses from responsive participants into a roll call list* (i.e., the emergency responder compiling the status responses from people called into a spreadsheet).

(Emphases added).

Thus, proposed substitute claim 17 is directed to a mental process that "can be performed in the human mind, or by a human using a pen and paper" (*see* MPEP § 2106.04(a)(2)(III); *CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1372 (Fed. Cir. 2011)), and/or a method of managing interaction between people (*see Interval Licensing*, 896 F.3d at 1335).

We must still determine whether the abstract idea is integrated into a practical application, namely whether proposed substitute claim 17 applies, relies on, or uses the abstract idea in a manner that imposes a meaningful limit on the abstract idea, such that the claims are more than a drafting effort designed to monopolize the abstract idea. *See* MPEP §§ 2106.04(a), (d).

Having determined that proposed substitute claim 17 recites a mental process or a method of managing personal behavior, which is an abstract idea, we proceed to Step 2A, Prong 2.

d Step 2A, Prong 2

We next (1) identify whether there are any additional recited elements beyond the abstract idea, and (2) evaluate those elements both individually and collectively to determine whether they integrate the exception into a practical application.

The 2019 Guidance Update addresses how we consider evidence of improvement that is presented to us. The 2019 Guidance Update states:

> *[T]he evaluation of Prong Two requires the use of the considerations (e.g.[,] improving technology*, effecting a particular treatment or prophylaxis, implementing with a particular machine, etc.) *identified by the Supreme Court and the Federal Circuit, to ensure that the claim as a whole "integrates [the] judicial exception into a practical application* [that] will apply, rely on, or use the judicial exception in a

> manner that imposes a meaningful limit on the judicial exception, such that the claim is more than a drafting effort designed to monopolize the judicial exception."

2019 Guidance Update 11 (emphasis added).

Petitioner contends that under Step 2A, Prong 2, proposed substitute claim 17's abstract idea "is not integrated into a practical application" because "forming a network to gather status responses from a social network may link the judicial exception to a technical field but does not add any 'meaningful limitation to the claim.'" Opp. 7–8. In particular, Petitioner contends that the substitute claims implement the abstract idea using conventional networking technology and thus lack an inventive concept. *See id.* at 8 ("The '345 patent does not describe any unusual or unconventional manner for receiving and transmitting the claimed data, and in any event, 'sending' and 'receiving' data over a network is 'not even arguably inventive.'"), 9 ("The specification explains that its situational network and 'N-dimensional social network' are all implemented using 'available hardware and technologies generally known in the art.'"), 10 ("The components for performing [the claimed] functions, moreover, are arranged in a conventional architecture . . . .").

Patent Owner argues that the substitute claims "use an unconventional network architecture," wherein "[t]he situational network created using this network architecture results in improved network efficiency and a reduction in the network resources needed," resulting in "something that was not attainable using conventional network architecture." PO Reply MTA 3 (citing Ex. 1001, 16:53–57, 24:46–62). In particular, Patent Owner argues that "the claims do not merely aggregate status responses –they claim specific steps that improve the underlying network technology used for

doing so." *Id.* According to Patent Owner, the claimed invention of the '345 patent improves the computer network, regardless of whether conventional components are used. *Id.* at 3–4. Patent Owner argues that "substitute claim 17 recites a specific type of situational network," and "delineates the network's structure and function," wherein "this implementation of a situational network allows for 'increas[ed] processing speed and reduc[ed] resource requirements such as CPU speed and memory size." *Id.* at 4–5 (citing Ex. 1001, 16:53–57).

We find Patent Owner's arguments unavailing. As discussed, proposed substitute claim 17 merely recite steps, as italicized and reproduced above, "forming" a network for collecting data, "presenting" data, "receiving" data, and "aggregating" data, each of which is part of a mental process or of a method of managing interaction between people. Further, the non-italicized portions of the proposed substitute claim 17 reproduced above merely describes that the event node is "hosted by an event node server within a N-dimensional social network" and the existing nodes corresponding with "a plurality of participant devices." However, such descriptions of a network being formed by connecting an established event node to existing nodes does not improve any technology or technical field. Moreover, although the event node is established on an "event node server," and the existing nodes are "participant devices," a "server" and "participant devices" are simply computing devices provided for accessing, manipulating, and displaying data, and thus, their recitations in the claims does not improve the functioning of the computing devices themselves. *See* MPEP § 2106.05(a). Here, the recited concept is merely a conventional

computing device technique for displaying and accessing data, to then manipulate the data. *Id.*

Although Patent Owner argues that proposed substitute claim 17 "recites a specific type of situational network," which "allows for 'increas[ed] processing speed and reduc[ed] resource requirements such as CPU speed and memory size" (PO Reply MTA 4–5), proposed substitute claim 17 merely recites forming a situational network for aggregating data by establishing an event node and then connecting the event to existing nodes within the social network to aggregate data therefrom. Thus, at best, any such improvement is merely an improvement in the collection, manipulation and display of data (i.e., an abstract idea), which is still an abstract idea. *See, e.g., Synopsys, Inc. v. Mentor Graphics Corp.*, 839 F.3d 1138, 1151 (Fed. Cir. 2016) ("[A] claim for a *new* abstract idea is still an abstract idea."). "[U]nder the *Mayo/Alice* framework, a claim directed to a newly discovered law of nature (or natural phenomenon or abstract idea) cannot rely on the novelty of that discovery for the inventive concept necessary for patent eligibility." *Genetic Techs. Ltd. v. Merial L.L.C.*, 818 F.3d 1369, 1376 (Fed. Cir. 2016) (citations omitted).

We agree with Petitioner that the substitute claims merely implement the abstract idea using conventional networking technology. *See* Opp. 8–10. As Petitioner points out, the '345 patent teaches that entities receiving and sending the data "can use 'devices generally known to those skilled in the art." *Id.* at 8–9 (citing Ex. 1001, 4:35–40). Further, according to Petitioner, the "situational network" and "N-dimensional social network" are implemented "using 'available hardware and technologies generally known in the art.'" *Id.* at 9 (citing Ex. 1001, 4:35–40, 6:1–7, 6:60–62, 7:38–43,

10:7–10, 15:42–50). Merely adding a generic computing device to perform abstract ideas does not integrate those ideas into a practical application. *See* MPEP §§ 2106.04(a), (d) (citing 2019 Revised Guidance, 84 Fed. Reg. at 55).

We find that using a generic computing device such as a "server" or a "participant device" in a known process (collecting, manipulating and displaying data) is not providing additional elements that apply or use the judicial exception beyond generally linking the use of the judicial exception to a particular technological environment, but rather merely a tool used to implement data processing, which is an abstract idea. That is, "the abstract idea itself cannot supply the invention concept" (*see Trading Techs. Int'l v IBG LLC*, 921 F.3d 1084 (Fed. Cir. 2019)). Here, the claims recite no technological improvement beyond the use of a server and participant device in a conventional networking process. Absent an improvement to the functioning of a computer or to any other technology or technical field, we agree with the Petitioner that the use of a generic computing device to perform conventional collection, manipulation and display of data still falls within the judicial exception. That is, the mere application of generic computer components that are recited at a high degree of generality to an abstract idea does not amount to a technical solution to a problem rooted in computer technology, and thus, the claims are not directed to any technological solution other than computer data processing.

Because the proposed substitute claims recite an abstract idea that is not integrated into a practical application, the claims are directed to an abstract idea, and we proceed to Step 2B.

e. Step 2B

Because we determine the claims are directed to an abstract idea, we next analyze the claims under step two of Alice (i.e., step 2B of the Office Guidance) to determine if there are additional limitations that individually, or as an ordered combination, ensure the claims amount to "significantly more" than the abstract idea. *Alice*, 573 U.S. at 217–18 (citing *Mayo*, 566 U.S. at 77–79). Here, Petitioner points out that the claims recite elements that collect, manipulate and display data using "devices generally known to those skilled in the art." Opp. 8–10. The Specification of the '345 patent supports Petitioner's argument that the claimed system comprises generic computer components that are configured to perform the generic computer functions (i.e., collecting, manipulating and displaying data), and thus, do not amount to significantly more than the abstract idea. *See* Ex. 1001, 4:35–40 (stating that "[u]sers 250 are connected via the situational network 3000 using devices 402 such as cell phones . . . personal computers, network servers . . . or other devices generally known to those skilled in the art that enable connection to, from and through the computer network 900"), 6:1–7 (describing that PIAs contain GPS or other geographic positioning devices "generally understood by those skilled in the art"), 6:60–62 (stating that "the situational network may also be formed using a decentralized architecture, such as a peer-to-peer network understood by one of skill in the art"), 7:38–43 (stating that "those skilled in the art will recognize that any of the available architectures (e.g., centralized, peer-to-peer, or combination thereof) may be used to form and sustain the various embodiments of the situational network"), 10:7–10 (stating that "an authorization request may be sent to the PIA using a wide variety of hardware and technologies generally

known in the art"), 15:42–50 (stating that "a node of the NDSN 100 may be implemented using a wide variety of available hardware and technologies generally known in the art").

Although Patent Owner argues that the substitute claims "use an unconventional network architecture" and "claim specific steps that improve the underlying network technology used for doing so" (PO Reply MTA 3–5), forming a network for aggregating data by establishing an event node and then connecting the event to existing nodes to aggregate data therefrom does not "pertain[] to an improvement to the functioning of a computer or to another technology without reference to what is well-understood, routine, conventional activity." *See* MPEP § 2106.04(d)(1)). "If it is asserted that the invention improves upon conventional functioning of a computer, or upon conventional technology or technological processes, a technical explanation as to how to implement the invention should be present in the specification." MPEP § 2106.05(a). As described above, the '345 patent does not support that an "unconventional network architecture" is used. E.g., Ex. 1001, 7:38–43 (stating that "those skilled in the art will recognize that any of the available architectures (e.g., centralized, peer-to-peer, or combination thereof) may be used to form and sustain the various embodiments of the situational network").

Moreover, the Specification mentions participant "devices" and "event node server" only in general terms. *See* Ex. 1001, 4:35–40, 33:43–52. The Specification does not explain how these devices forming a network to perform activities such as collecting, manipulating and displaying and data in various forms, improves a computer or another technology. *Id.* Rather, we determine that the application of an "event node server" and

"participant devices" is an insignificant post-solution step for forming a network in the performance of an abstract idea. That is, the Specification does not provide the detail necessary to be an "improvement" of a computer or technology apparent to a person of ordinary skill in the art. MPEP § 2106.04(d)(1).

In sum, considered individually or taken together as an ordered combination, the claim elements fail "to 'transform' the claimed abstract idea into a patent-eligible application." *Alice*, 573 U.S. at 221 (quoting *Mayo*, 132 S.Ct. at 1294, 1298). Beyond the abstract idea, the claims merely recite "well-understood, routine conventional activit[ies]," either by requiring conventional computer activities or routine data-gathering steps. *Alice*, 573 U.S. at 225 (quoting *Mayo*, 132 S.Ct. at 1294) (alterations in original); *see also Electric Power*, 830 F.3d at 1353–1354 (Fed. Cir. 2016) (the "process of gathering and analyzing information of a specified content, then displaying the results" using "off-the-shelf, conventional computer, network, and display technology for gathering, sending and presenting the desired information" are 'insufficient to pass the test of an inventive concept in the application' of an abstract idea").

For at least the above reasons, we conclude, under the 2019 Revised Guidance, that proposed substitute claim 17, considered as a whole, is directed to a patent-ineligible abstract idea that is not integrated into a practical application and does not include an inventive concept. Further, proposed substitute independent claims 24 and 29 similarly recite establishing an "event node" hosted by a "server" within an N-dimensional social network, connecting the event node to a "plurality of existing nodes"

within the N-dimensional social network, and thus are similarly directed to a patent-ineligible abstract idea.

Accordingly, we determine, that Petitioner has shown by a preponderance of evidence that that proposed substitute claims 17, 24, and 28, and claims 18–23, 25–28, and 30–32 depending respectively therefrom are patent ineligible.

2. Claim Construction

"event node"

Proposed substitute claim 17 recites "an event node hosted by an event node server within a N-dimensional social network," proposed substitute claim 24 recites "an event node established within an N-dimensional social network," and proposed substitute claim 29 recites "an event node hosted by the central server within a N-dimensional social network." *See* MTA App. A.

Patent Owner asserts that the Specification of the '345 patent "provides a definition for an event node." MTA 18. Specifically, Patent Owner points to disclosure in the '345 patent that "the situation network may be established using the framework of an N-dimensional social network (NDSN)," and that "a 'situation or event itself may also be associated with a node on the SitNet, ***known as event node*** for the SitNet… that propagates up-to-date information on the situation to PIA [Personal Information Aggregators] of the NDSN connected to the event node.'" *Id.* (citing Ex. 1001, 7:52–66). Based on this disclosure, Patent Owner asserts that "an event node is defined in the specific[ation] as a type of node that communicates up to date information in a NDSN. . . . an event node is a

node within an NDSN providing up-to-date information regarding an event or situation via peer-to-peer communication with other nodes." *Id.*

Petitioner argues that Patent Owner's proposed additional limitations requiring an event node to be "within an NDSN providing up-to-date information regarding an event or situation via peer-to-peer communication with other nodes" are "not present in the amendments and therefore should not be interpreted to be required by the claims." Opp. 1–2. Petitioner points out that Patent Owner's declarant, Dr. Rubin, "has rejected such limitations, indicating instead that an event node is simply a data structure or 'object with attributes that defines [an] event.'" *Id.* (quoting Ex. 1027, 33:2–7, 41:17–20).

We decline to adopt Patent Owner's construction for the term "event node" in the proposed substitute claims. In particular, although Patent Owner points to disclosures in the '345 patent for providing a "definition for an event node" (MTA 18 (citing, *e.g.*, Ex. 1001, 7:52–66)), these disclosures merely describe exemplary functionality of the event node.

One disclosure in the '345 patent referenced by Patent Owner provides that "***[f]or example***, an entity, such as a trusted provider of information (e.g., a news source such as CNN or weather.com), establishes an event node in an NDSN that propagates up-to-date information on the situation to PIAs of the NDSN connected to that event node." Ex. 1001, 7:61–66 (emphasis added). In fact, the '345 patent also discloses that "[i]n one embodiment, the SitNet can be formed ***in the absence of an event node***, such as in a de-centralized (peer-to-peer) architecture." *Id.* at 8:9–12 (emphasis added). Here, the '345 patent appears to indicate that event nodes are employed in embodiments with centralized, rather than peer-to-peer

architectures. Accordingly, the "peer-to-peer communication with other nodes" part of Patent Owner's proposed claim construction contradicts, or at least fails to find support in, the Specification of the '345 patent.

For the reasons discussed above, we conclude that an "event node" is not limited to "a node within an NDSN providing up-to-date information regarding an event or situation via peer-to-peer communication with other nodes." *See* MTA 18.

With this understanding in mind regarding limitations reciting an "event node" in the proposed substitute claims, we turn to Petitioner's grounds of unpatentability.

3. Obviousness

Petitioner contends that proposed substitute claims 17–32 would have been obvious based on newly asserted grounds that parallel the originally asserted grounds in the Petition, but with the addition of either Issa[7] (Ex. 1029) or Kraft[8] (Ex. 1030). *See* Opp. 13–25.

a. Asserted Obviousness of Substitute Claims 17, 19–24, 26–29, 31, and 32 over Gage and Issa (New Ground 1); of Substitute Claims 18, 25, and 30 over Gage, Issa and Mitchell (New Ground 2)

Petitioner contends that proposed substitute claims 17, 19–24, 26–29, 31, and 32 would have been obvious over Gage (Ex. 1005) and Issa (New Ground 1), and that proposed substitute claims 18, 25, and 30 would have been obvious over Gage, Issa, and Mitchell (Ex. 1013) (New Ground 2). Opp. 11–18.

[7] US 7,730,216 B1, issued June 1, 2010.
[8] US 7,747,648 B1, issued June 29, 2010.

Before analyzing Petitioner's obviousness contentions in detail, we summarize the asserted new art to Issa below.

i. Issa

Issa is titled "System and Method of Sharing Content Among Multiple Social Network Nodes Using an Aggregation Node," and relates to "communication and controlled sharing of digital content among networked users" and more particularly to "creation of an improved sharing network for relaying data among linked nodal members of a social network" and "aggregating content and/or associated metadata within a pre-existing social network for internal and/or external access via a virtual peer." Ex. 1029, codes (54), (57), 1:8–13. Issa describes an ad hoc network which may be a hybrid P2P network that conforms to a virtual peer representation accessible as a single node from outside the given social network nodes, whereby members of a pre-existing social network may selectively activate embedded latent peers and link to an aggregation node to form the hybrid P2P network. *Id.* at code (57). Content is shared in a controlled distribution according to level rights among participating network nodes. *Id.*

Issa's Fig. 2, reproduced below, provides an interconnection schematic diagram of a social network including a social network circuit portion, and Issa's Fig. 5, reproduced below, provides a block diagram representation of network interaction in a social network circuit (such as that of Fig. 2), linked to an aggregation node for establishing a virtual peer configuration. *Id.* at 4:41–54.

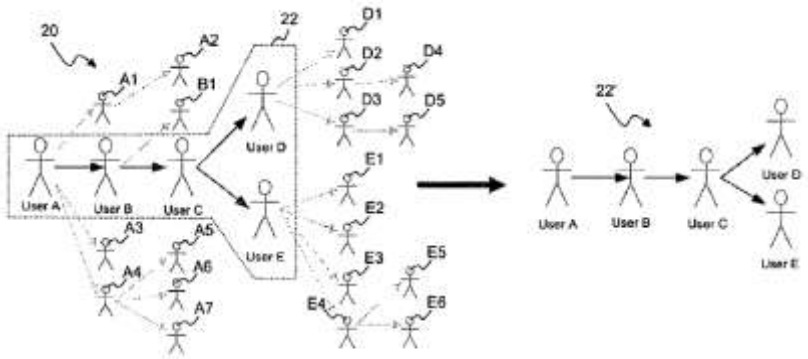


FIG. 2

Fig. 2 illustrates a social network 20 with an overlay depicting a social network circuit 22, as shown from the point of view of a "User A." *Id.* at 4:41–43, 8:45–47.

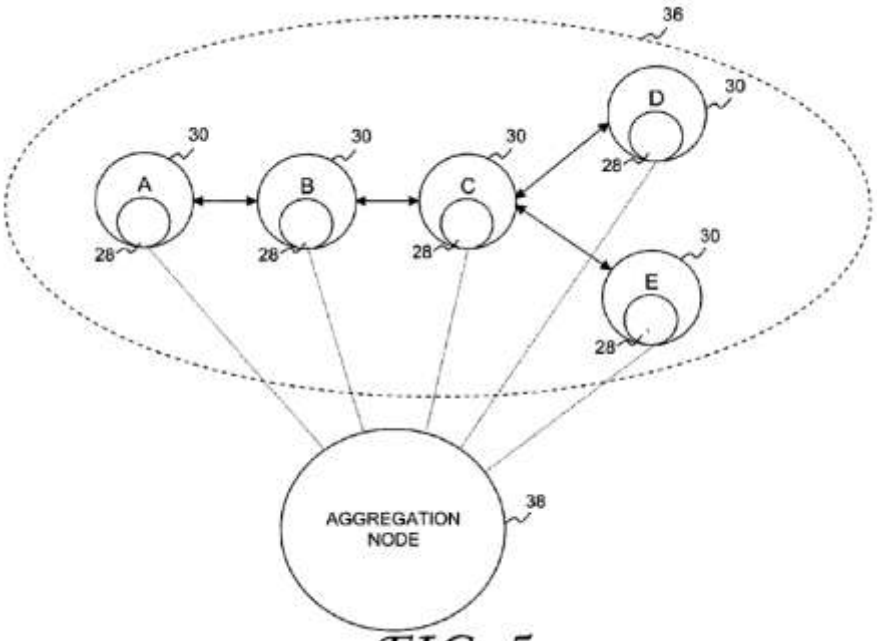


FIG. 5

Fig. 5 provides a block diagram representation of network interaction in a social network circuit (such as that of Fig. 2), linked to an aggregation node 38 for establishing a virtual peer configuration. *Id.* at 4:51–54, 12:50–55.

In Fig. 5, clients A, B, C, D and E are intended to correlate with social network circuit members such as those in Fig. 2. *Id.* at 12:33–49. Users A-E are part of a pre-established social network circuit 36, in which each of the

nodes is already communicating with other nodes via the network infrastructure provided by the circuit. *Id.* Each user's client contains an IM client 30 and an embedded peer 28. *Id.* at 12:50–67. The members of social network 36 may selectively decide in whole or in part to form an additional content sharing network, at which time latent peers 28 become active and are communicatively coupled to aggregation node 38 as part of the process of forming a virtual peer (which is a logical construct enabling a number of virtual peer members to appear as a single node in the P2P content sharing system). *Id.* In operation, aggregation node 38 helps create the virtual peer by coordinating identification and invitation among members in a social network instance. *Id.*

Aggregation node 38 may comprise a centralized server and/or a proxy server. *Id.* at 13:8–10. Aggregation node 38 may also be represented as a supernode. *Id.* at 13:19–20. Peers 28 participating in social network 36 may be connected to aggregation node 38 by a local or network connection. *Id.* at 13:21–39. For example, peers 28 may be connected to aggregation node 38 via a direct communication link such as a wired connection or a local wireless connection. *Id.* Alternatively, peers 28 may be connected to aggregation node 38 directly or indirectly via one or more nodes in social network 36. *Id.* Peers 28 may also be connected to aggregation node 38 over the Internet, a Wide Area Network (WAN), a Local Area network (LAN), or a cellular network. *Id.*

To provide efficient content sharing and additional functions such as forming and playing content playlists and distributing digital content within a social network in a controlled fashion, aggregation node 38 operates to obtain selected digital content and/or metadata describing all or a portion of

a number of different content pieces shared by the participating nodes. *Id.* at 13:40–59. Aggregation node 38 combines (or aggregates) the metadata and/or content into a single collection of data (a metadata catalog) for the virtual peer. *Id.* Thereafter, aggregation node 38 may serve content discovery requests from participating nodes or nodes external to the virtual peer or the social network by using the metadata catalog. *Id.*

ii. Asserted Obviousness of Substitute Claims 17, 19–24, 26–29, 31, and 32 over Gage and Issa (New Ground 1)

Petitioner points out that the substitute claims "only add the concepts of (1) establishing an event node and (2) connecting the event node to 'N-dimensional social network' nodes." Opp. 11. Petitioner contends that "[b]oth concepts, however, were well-known in the art and are described in Issa." *Id.* (citing Ex. 1028 ¶¶ 27–31). Petitioner contends that although "Gage describes forming the situational network within a network of existing nodes," and "does not explicitly disclose an event node connecting an 'N-dimensional social network,'" Issa cures Gage's deficiency with respect to the newly added limitations in claim 17. *Id*. at 12. Petitioner relies on the same contentions for proposed substitute independent claims 24 and 29. *See id.* at 17.

Specifically, Petitioner asserts that Issa's framework in which an aggregation node facilitates the aggregation and sharing of content with respect to connected social network nodes, in combination with Gage, teaches the newly added limitations. *See* Opp. 12–15 (citing Ex. 1028 ¶¶ 43–52; Ex. 1029, Title, Abstract, 1:28–53, 2:57–3:39, 4:1–8, 8:60–9:20, 12:33–14:15, 14:27–15:23, 15:55–16:23, Fig. 5; Ex. 1005 ¶¶ 9, 19, 40–45). Petitioner specifically argues that Issa discloses the connection of a

particular node to a plurality of nodes in an N-dimensional social network as recited in claim 17 because Issa explains that its virtual peer and aggregation node framework may be implemented with "pre-existing or dynamically created social network technologies [that] include Friend-Of-A-Friend (FOAF) social networks" which may be "a hybrid peer-to-peer (P2P) network." *Id.* at 13–14 (citing Ex. 1029, 2:55–66, 3:20–24, 8:4–6, 8:60–9:20, 12:16–13:59, 14:27–36, Fig. 5; Ex 1028 ¶¶ 45–48). Petitioner also argues that "Issa's aggregation node and virtual peer functionality as implemented with Gage's disaster response system renders obvious establishing an '*event node hosted by an event node server*'" where the "*event node* [is] associated with the disaster," because in response to the occurrence of a disaster, the combined system "would have formed a situational network using the functionality described in Gage by establishing an aggregation node and virtual peer as described in Issa." *Id.* at 14–15 (citing Ex. 1005 ¶¶ 9, 19, 40–45; Ex. 1028 ¶¶ 44–52). Petitioner contends that "[t]he combined Gage-Issa disaster response system connects to other nodes of an N-dimensional social network as described in Issa" where the "social network nodes would have corresponded to the geographically proximate subscriber devices described in Gage." *Id.* at 15 (citing Ex. 1029, 1:28–53, 2:55–66, 8:60–9:20, 12:16–13:59, Fig. 5; Ex. 1028 ¶¶ 49–50).

Petitioner reasons that one of ordinary skill in the art "would have been motivated to combine Gage and Issa to provide a more-efficient process for obtaining and aggregating status indicator responses and providing those aggregated responses to better inform relief workers." *Id.* at 15 (citing Ex. 1028 ¶ 34; Ex. 1005 ¶¶ 7, 11, 21). Alternatively, Petitioner argues that one "would have been motivated to implement Issa's aggregation

node and social-network interactions with Gage's disaster response system to quickly and efficiently notify friends and family." *Id.* at 16 (citing Ex. 1028 ¶ 35; Ex. 1029, 13:40–59; Ex. 1005, Abstract, ¶¶ 2, 6–8, 19, 20, 23, 37, 38). Moreover, Petitioner argues that one "would have also known how to combine Gage and Issa and would have recognized that implementing Issa would have amounted to a predictable variation of Gage." *Id.* at 16–17 (citing Ex. 1028 ¶ 37).

Patent Owner responds that Petitioner has not shown that proposed substitute independent claims 17, 24, and 29 are rendered obvious by Gage and Issa. PO Reply MTA 6–10. In particular, Patent Owner argues that the proposed substitute claims "still require a 'situational network'" and "Gage's system does not meet the requirements of a situational network to be 'created in response' to an event or situation. . . . [t]he network disclosed by Gage is pre-existing and does not read on the substitute claims of the 345 Patent." *Id.* at 6–7. Patent Owner repeats its contention with respect to Gage as applied to claims 1–16. *Id.* at 7–9 (citing Ex. 1001, 4:3–7; Ex. 1027, 56:8–16, 15:15–22).

Patent Owner further contends that "Issa does not teach a situational network and further fails to cure the deficiencies in Gage to render the independent substitute claims obvious." PO Reply MTA 10. In particular, Patent Owner argues that "Issa does not teach the connections among within the network are 'created in response' to an event or situation. Rather it teaches the connections are created because users want to share content with other users within the network." *Id.* (citing Ex. 1029, 13:21–63).

We find Patent Owner's arguments regarding Gage unavailing. In particular, although we agree with Patent Owner that the proposed substitute

claims "still require a 'situational network'" (PO Reply MTA 6–7), we do not agree that "Gage's system does not meet the requirements of a situational network to be 'created in response' to an event or situation." *Id.* By arguing that Gage's alleged situational network is not a network created in response to an event or situation because the connections within it exists prior to the event or situation (*id.*), Patent Owner is relying on its proposed claim construction of "situational network" as excluding pre-existing networks, with which, as discussed above in Section II(B)(1), we do not agree.

We find availing Petitioner's reliance on Gage for disclosing a "situational network," as the contention is consistent with the teachings of Gage. As discussed above regarding claim 1 (original Ground 1) in Section II(D)(3)(a), we find availing Petitioner's reliance on Gage for teaching a disaster recovery system that establishes multiple communication/ information transmission options to enable subscribers to communicate with the disaster response system. *See* Ex. 1005 ¶¶ 25, 36–38. Thus, although Patent Owner also contends that Issa does not teach a "situational network" and further "fails to cure the deficiencies in Gage" (PO Reply MTA 10), we find no deficiencies with Petitioner's reliance on Gage for teaching the "situational network."

We also find availing Petitioner's reliance on Issa for curing Gage's deficiency with respect to the newly added limitations in claims 17, 24, and 29. Opp. 12, 17. In particular, we find availing Petitioner's reliance on Issa to "explicitly disclose an event node connecting an 'N-dimensional social network.'" *Id.* Specifically, as Petitioner points out, Issa explains that its virtual peer and aggregation node framework may be implemented with pre-

existing or dynamically created social network technologies which may be "a hybrid peer-to-peer (P2P) network." *Id.* at 13–14; *see* also Ex. 1029, 2:55–66, 3:20–24, 8:4–6, 8:60–9:20, 12:16–13:59, 14:27–36, Fig. 5; Ex 1028 ¶¶ 45–48. We find availing Petitioner's contention that, in the combination of Gage and Issa, the disaster response system connects to other nodes of an N-dimensional social network, where the social network nodes would have corresponded to the geographically proximate subscriber devices described. Opp. 15; *see also* Ex. 1029, 1:28–53, 2:55–66, 8:60–9:20, 12:16–13:59, Fig. 5; Ex. 1028 ¶¶ 49–50).

We also find availing Petitioner's contention that one of ordinary skill in the art would have been motivated to combine Gage and Issa. Opp. 15. Petitioner's contention is supported by Dr. Cooperstock's testimony that, such application would "provide a more-efficient process for obtaining and aggregating status indicator responses and providing those aggregated responses to better inform relief workers." *Id.*; Ex. 1028 ¶ 34; *see also* Ex. 1005 ¶¶ 7, 11, 21. We also find availing Dr. Cooperstock's testimony that the POSITA would have been motivated to implement Issa's aggregation node and social-network interactions with Gage's disaster response system "to quickly and efficiently notify friends and family." Ex. 1028 ¶ 35; *see also* Ex. 1029, 13:40–59; Ex. 1005, Abstract, ¶¶ 2, 6–8, 19, 20, 23, 37, 38). We agree with Petitioner that the POSTIA would have also known how to combine Gage and Issa and would have recognized that implementing Issa would have "amounted to a predictable variation of Gage." Opp. 16.

Having considered the parties' arguments and the entirety of the record since our Preliminary Guidance, we determine that a preponderance of the evidence indicates that the combined disclosures in Gage and Issa

teaches the subject matter in proposed substitute independent claims 17, 24, and 29, and that Petitioner has shown that a POSITA would have had a reason to combine the teachings of Gage and Issa. As such, we determine that Petitioner has provided articulated reasoning with rational underpinnings that would support a conclusion of obviousness for proposed substitute claim 17, 24, and 29.

Patent Owner does not present arguments addressing the specific merits of Petitioner's contentions with respect to proposed substitute dependent claims 19–23, 26–28, 31, and 32. *See generally* PO Reply MTA.

Having reviewed Petitioner's arguments and supporting evidence in the complete record, we conclude Petitioner has demonstrated by a preponderance of the evidence that Gage teaches or suggests the subject matter in proposed substitute dependent claims 19–23, 26–28, 31, and 32.

In light of the above analysis, we determine that Petitioner's evidence and arguments are sufficient to demonstrate, by a preponderance of the evidence, that proposed substitute claims 17, 19–24, 26–29, 31, and 32 would have been obvious over Gage and Issa.

iii. Asserted Obviousness of Substitute Claims 18, 25, and 30 over Gage, Issa and Mitchell (New Ground 2)

With respect to New Ground 2, Patent Owner relies on its arguments regarding New Ground 1 and further submits that "Mitchell adds no relevant disclosure to cure these deficiencies." PO Reply MTA 11.

As discussed above regarding New Ground 1 in Section III(B)(3)(ii), we find no deficiencies with Petitioner's reliance on Gage and Issa for teaching the subject matter of proposed substitute independent claims 17, 24, and 2. Having considered the parties' arguments and the entirety of the

record since our Preliminary Guidance, we determine that a preponderance of the evidence indicates that the combined disclosures in Gage and Issa in view of Mitchell teaches the subject matter of proposed substitute dependent claims 18, 25 and 30 respectively depending form claims 17, 24, and 29.

Accordingly, we determine that Petitioner's evidence and arguments are sufficient to demonstrate, by a preponderance of the evidence, that proposed substitute claims 18, 25, and 30 would have been obvious over Gage, Issa, and Mitchell.

b. Asserted Obviousness of Substitute Claims 17, 19, 20, 22–24, 26–29, and 31 over Shida and Kraft (New Ground 3); of Substitute Claims 18, 21, 25, 30, and 32 over Shida, Kraft, and Sinha (New Ground 4)

Petitioner contends that proposed substitute claims 17, 19, 20, 22–24, 26–29, and 31 would have been obvious over Shida and Kraft (New Ground 3), and that proposed substitute claims 18, 21, 25, 30, and 32 would have been obvious over Shida, Kraft, and Sinha (New Ground 4). Opp. 18–24. Because the Gage-Issa ground (New Ground 1) and Gage-Issa-Mitchell ground (New Ground 2) collectively are dispositive as to all proposed substitute claims 17–21, we do not reach Petitioner's challenge of substitute claims 17, 19, 20, 22–24, 26–29, and 31 over Shida and Kraft (New Ground 3), and of substitute claims 18, 21, 25, 30, and 32 over Shida, Kraft, and Sinha (New Ground 4). *See SAS*, 138 S. Ct. at 1359.

c. Conclusion on Petitioner's Patentability Challenges based on Obviousness for Proposed Substitute Claims

For the above reasons, we determine that Petitioner has shown by a preponderance of evidence that the subject matter of proposed substitute claims 17–32 would have been unpatentable.

IV. CONCLUSION[9]

For the foregoing reasons, we conclude that Petitioner has shown by a preponderance of the evidence that original claims 1–16 of the '345 patent are unpatentable.

Although Patent Owner has met its regulatory burden for proposed substitute claims 17–32, Petitioner has shown that proposed substitute claims 17–32 would have been unpatentable by a preponderance of the evidence.

We, therefore, deny Patent Owner's Motion to Amend as to the request to add substitute claims 17–32.

[9] 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. 16,654 (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).

In summary:

Claims	35 U.S.C. §	Reference(s)	Claims Shown Unpatentable	Claims Not Shown Unpatentable
1, 3–8, 10–13, 15, 16	103	Gage	1, 3–8, 10–13, 15, 16	
2, 9, 14	103	Gage, Mitchell	2, 9, 14	
1, 3, 4, 6–8, 10–13, 15	103	Shida[10]		
2, 5, 9, 14, 16	103	Shida, Sinha[11]		
Overall Outcome			1–16	

[10] We do not reach this ground because we have determined the challenged claim to be unpatentable under another ground. *See supra* Section II(D)(3).
[11]We do not reach this ground because we have determined the challenged claim to be unpatentable under another ground. *See supra* Section II(D)(3)

Motion to Amend Outcome	Claim(s)
Original Claims Cancelled by Amendment	
Substitute Claims Proposed in the Amendment	17–32
Substitute Claims: Motion to Amend Granted	
Substitute Claims: Motion to Amend Denied	17–32
Substitute Claims: Not Reached	

V. ORDER

For the reasons given, it is

ORDERED that, based on the preponderance of the evidence, claims 1–16 of the ’345 patent have been shown to be unpatentable;

FURTHER ORDERED that Patent Owner’s Motion to Amend is denied as to the request to add proposed substitute claims 17–32 to the ’345 patent; and

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

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