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Paper 33
Entered: September 1, 2020

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SNAP INC.,
Petitioner,

v.

BLACKBERRY LIMITED,
Patent Owner.

IPR2019-00714
Patent 8,825,084 B2

Before MICHAEL R. ZECHER, MIRIAM L. QUINN, and AARON W. MOORE, *Administrative Patent Judges.*

QUINN, *Administrative Patent Judge.*

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

I. INTRODUCTION

We instituted *inter partes* review pursuant to 35 U.S.C. § 314 as to claims 1, 2, 5, 6, 9, 10, 12, 13, and 15 of U.S. Patent No. 8,825,084 B2 (Ex. 1001, "the '084 patent"), owned by Blackberry Limited ("Patent Owner"). Paper 9 ("Decision" or "Dec. on Inst."). We have jurisdiction under 35 U.S.C. § 6. This Final Written Decision is entered pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. For the reasons discussed below, Petitioner has shown by a preponderance of the evidence that claims 1, 2, 5, 6, 9, 10, 12, 13, and 15 (the challenged claims) of the '084 patent are unpatentable.

II. BACKGROUND

A. RELATED MATTERS

The parties indicate that the '084 patent was asserted in *BlackBerry Limited v. Snap Inc.*, No. 2:18-cv-02693 (C.D. Cal.). Pet. 1; Paper 5, 2.

Petitioner filed a concurrent *inter partes* review proceeding, IPR2019-00715, involving U.S. Patent No. 8,326,327 B2, which is related to the '084 patent. *Id.*

B. THE '084 PATENT

The '084 patent relates to a system and method for determining an action spot based on the location of a mobile device. Ex. 1001, 1:14–17. The '084 patent discloses that, in order to find events currently occurring proximate to a mobile device's present location, a user must manually search external sources, such as electronic events calendars, Internet sites, and

Internet calendars of businesses or event holders. *Id.* at 3:11–16. The user must then compare the location of the event to the user's current location. *Id.* at 3:16–19.

The '084 patent discloses a system for determining an action spot, i.e., "a location or an event where at least one activity is occurring relative to the current location of another mobile device," by identifying a location where the other mobile device has engaged in documenting action. *Id.* at 3:3–5, 3:28–42. The action spot is located within a predetermined distance from the location of the user's mobile device. *Id.* at 3:28–42. The predetermined distance can be any set distance from the current location of the user's mobile device. *Id.* at 8:32–37. The predetermined distance may be set by a user, mobile device, software, server, or network provider. *Id.* at 8:37–44.

Figure 3, reproduced below, illustrates a screenshot of an interactive map, which includes display screen 102, graphic user interface 206, current location 302, action spots 304, 306, and graphical representations 308 of location landmarks. *Id.* at 5:56–6:31.

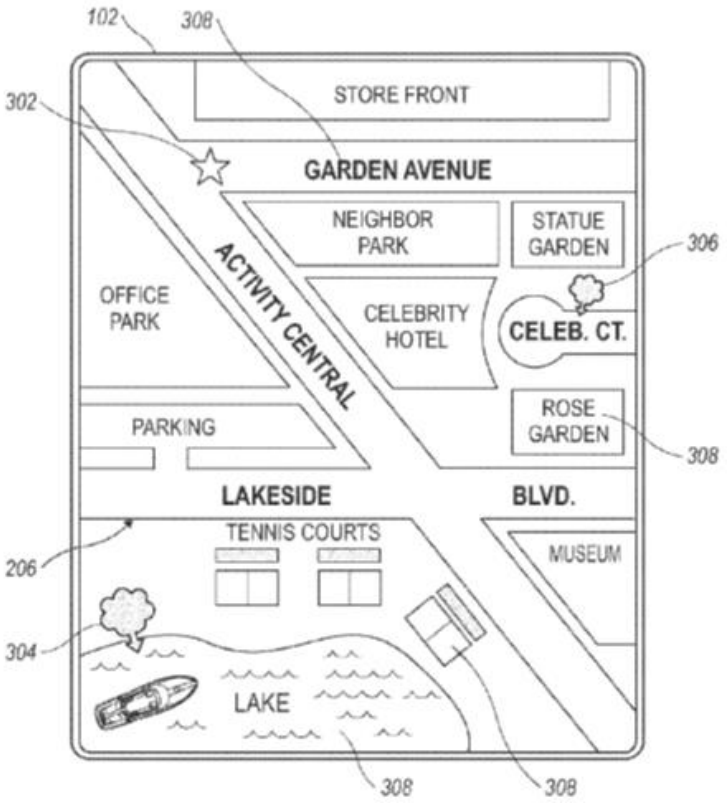


FIG. 3

FIG. 3 is an illustrative implementation of a graphical user interface displaying action spots within a predetermined distance from a current location of a mobile device. Ex. 1001, 1:53–55.

Action spots 304, 306 can have different sizes to indicate the activity level associated with each action spot, wherein a larger size represents more activity. *Id.* at 6:32–34. Activities may include documenting actions, such as messaging, photographing, or video recording. *Id.* at 2:63–67. Activity level may also be indicated by color, graphical-item-sizing, activity icon scheme, or various combinations thereof. *Id.* at 10:26–39.

Figure 10, reproduced below, illustrates a block diagram for implementing a method of retrieving document actions and transmitting data to the mobile device. *Id.* at 7:5–8.

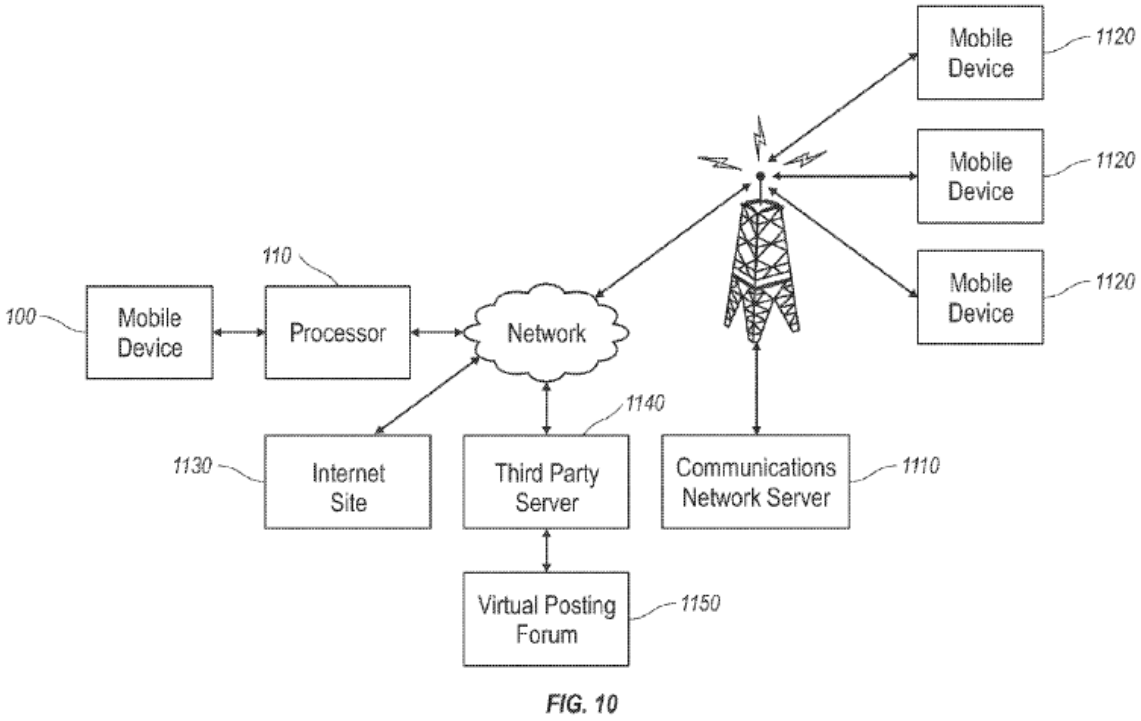


FIG. 10

Figure 10 is a block diagram representing the interaction between a plurality of resources, a mobile device, and a processor configured to determine action spots relative to the location of the mobile device. Ex. 1001, 2:11–14.

The block diagram includes processor 110, which can retrieve data from external server 1110. *Id.* at 7:5–34. Server 1110 monitors documenting actions of other mobile devices 1120 on the same communications network as mobile device 100. *Id.* Server 1110 can monitor location and level of documenting actions, and then transmit action spot locations based on the documenting actions to mobile device 100. *Id.*

Figure 7, reproduced below, illustrates a graphical item identifying a direction in which to travel in order to arrive at the action spot. *Id.* at 12:11–14.

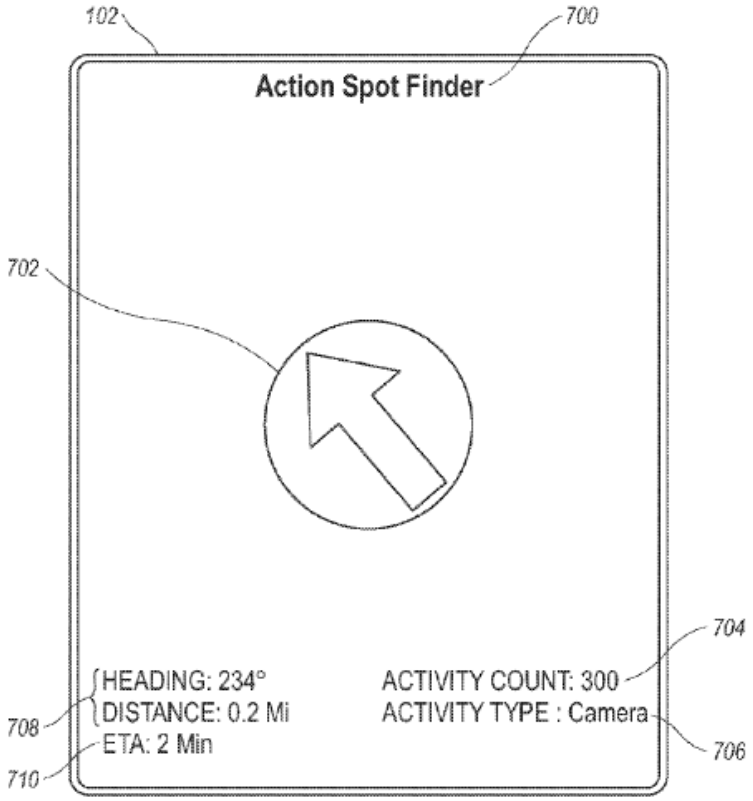


FIG. 7

FIG. 7 is an illustrative implementation of a graphical user interface of a mobile device having a compass showing at least the distance and direction to an action spot proximate to the mobile device. Ex. 1001, 2:1–4.

In Figure 7, graphical user interface 700 includes compass 702 which is pointed in the direction of the nearest action spot proximate to mobile device 100. *Id.* at 12:11–23.

C. ILLUSTRATIVE CLAIMS

Of the challenged claims, claims 1 and 9 are independent. Each of challenged claims 2, 5, 6, 10, 12, 13, and 15 depends directly or indirectly from claims 1 or 9.

Claims 1 and 9 are illustrative and reproduced below.

1. A server configured to:

receive data indicative of a current location of a first mobile device;

determine at least one action spot within a predetermined distance from the current location of the first mobile device, the at least one action spot corresponding to a location where at least one second mobile device has engaged in at least one documenting action, the documenting action including at least one of capturing images, capturing videos and transmitting messages;

transmit the at least one action spot to the first mobile device; and

transmit to the first mobile device, an indication of an activity level at the at least one action spot,

wherein the activity level is based upon at least one of a number of images captured, a number of videos captured, and a number of messages transmitted.

9. A non-transitory computer program product comprising a computer useable medium having computer readable program code embodied therein providing action spots on a first mobile device, the computer program product comprising computer

> readable program code configured to cause the first mobile device to:
>
> determine, via a processor, a current location of the first mobile device;
>
> determine at least one action spot within a predetermined distance from the current location of the first mobile device, the at least one action spot corresponding to a location where at least one second mobile device has engaged in at least one documenting action, the documenting action including at least one of capturing images, capturing videos and transmitting messages; and
>
> display a graphical item on a display of the first mobile device, said graphical item identifying a direction, relative to the current location, in which to travel in order to arrive at the determined at least one action spot, and display a level of activity associated with the at least one action spot, the level of activity based upon at least one of a number of images captured, a number of videos captured, and a number of messages transmitted.

Ex. 1001, 19:30–46; 20:11–36.

D. PROCEDURAL HISTORY

Petitioner filed the Petition on February 22, 2019. Paper 1 ("Pet."). Patent Owner filed a Preliminary Response on June 11, 2019. Paper 8 ("Prelim. Resp."). After considering the parties' filings, we granted the Petition and instituted *inter partes* review on all challenged claims and all grounds asserted. Dec. on Inst. 37. In that Decision on Institution, we clarified the claim construction for the term "action spot" and resolved Petitioner's request for claim construction of the term "predetermined distance." Dec. on Inst. 12–15.

During trial, Patent Owner filed a Patent Owner Response (Paper 13 ("PO Resp.")) and Petitioner filed a Reply (Paper 22 ("Reply")). Patent Owner also filed a Sur-Reply. Paper 25 ("Sur-Reply"). We heard oral argument on June 9, 2020, a transcript of which is filed in the record. Paper 32 ("Tr.").

E. Evidence of Record

Petitioner relies upon the following references as evidence of prior art:

a) *Winkler*: U.S. Patent No. 8,750,906 B2, issued June 10, 2014, filed as Exhibit 1004;

b) *Altman*: U.S. Patent Publication No. 2007/0281716 A1, published Dec. 6, 2007, filed as Exhibit 1006;

c) *Lemmela*: U.S. Patent Publication No. 2008/0250337 A1, published Oct. 9, 2008, filed as Exhibit 1005; and

d) *Crowley*: U.S. Patent No. 7,593,740 B2, issued Sept. 22, 2009, filed as Exhibit 1008.

In addition, Petitioner supports its contentions in the Petition with the Declaration of Dr. Samrat Bhattacharjee. Ex. 1002 ("Bhattacharjee Decl."). With the Reply, Petitioner proffered a Rebuttal Declaration of Dr. Samrat Bhattacharjee. Ex. 1011 ("Bhattacharjee 2d Decl.").

With its Patent Owner Response, Patent Owner provided a Declaration of Patrick McDaniel, Ph.D. Ex. 2001 ("McDaniel Decl."). During trial, Patent Owner proffered a Second Declaration of Patrick McDaniel, Ph.D. Ex. 2003 ("McDaniel 2d Decl.").

F. GROUNDS OF UNPATENTABILITY

The following grounds of unpatentability are at issue (Pet. 2–3):

Claims Challenged	35 U.S.C. §[1]	References
1, 2, 5, 6, 9, 10, 12, 13, 15	103(a)	Winkler, Altman
1, 2, 5, 6	103(a)	Lemmela, Crowley
9, 10, 12, 13,15	103(a)	Lemmela, Crowley, Winkler

III. ANALYSIS

A. CLAIM CONSTRUCTION

In an *inter partes* review filed on or after November 13, 2018, a claim "shall be construed using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. 282(b)." 37 C.F.R. § 42.100(b) (2019). In applying this claim construction standard, we are guided by the principle that the words of a claim "are generally given their ordinary and customary meaning," as understood by a person of ordinary skill in the art in question at the time of the invention. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (*en banc*) (citation

[1] The Leahy-Smith America Invents Act ("AIA"), Pub. L. No. 112–29, 125 Stat. 284, 287–88 (2011), revised 35 U.S.C. § 103, effective March 16, 2013. Because the patent application resulting in the '084 patent was filed before the effective date of the relevant section of the AIA, we refer to the pre-AIA version of § 103 throughout this decision.

omitted). "In determining the meaning of the disputed claim limitation, we look principally to the intrinsic evidence of record, examining the claim language itself, the written description, and the prosecution history, if in evidence." *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 469 F.3d 1005, 1014 (Fed. Cir. 2006) (citing *Phillips*, 415 F.3d at 1312–17). There is a "heavy presumption," however, that a claim term carries its ordinary and customary meaning. *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002) (citation omitted).

1. "action spot"

In our Decision on Institution we preliminarily determined that the term "action spot" refers to a location or event where an activity "is occurring" or "has occurred." Dec. on Inst. 12–14. We started with Patent Owner's lexicography position, which is that the Specification expressly defines the term "action spot" as "a location or an event where at least one activity is occurring relative to the current location of another mobile device." *Id.* at 11–12 (citing Ex. 1001, 3:3–5). We noted the issue with Patent Owner's position: the inconsistency with which the Specification describes the "action spot" as requiring a present ("is occurring") "activity." *Id.* 12–13. We also noted that the claim language did not support Patent Owner's position. *Id.* at 13–14. To summarize the issue: although Patent Owner's definition requires that the "action spot" is where an "activity" "is occurring," the claim language recites that the "action spot correspond[s] to a location where at least one second mobile device *has engaged* in at least one documenting action." Ex. 1001, 19:35–39 (emphasis added). Thus, we

deemed it improper to limit the term "action spot" to locations where activity (which is a documenting action, *id.* at 2:61–65) "is occurring"—to the exclusion of locations where activity has occurred in the past.

During trial, Patent Owner renewed its contention that to "determine" at least one "action spot" is expressly defined in the Specification and that definition controls. PO Resp. 15. In particular, Patent Owner argues that we must construe the term consistent with the lexicographic meaning, especially because the parties agreed to this definition during district court litigation. *Id.* at 15–16. Patent Owner urges we consider two reasons to change our preliminary determination that the "action spot" could refer to locations in which an activity "has occurred": (1) symmetry and consistency between our construction and "the district court's construction"; and (2) the distinction between the Specification's desired "output" (determination of an action spot) which is separate and distinct from the claim's focus on the "input" ("recent documenting actions from other mobile devices"). *Id.* at 16–20. Neither of these arguments is persuasive for us to change our preliminary interpretation of the term "action spot."

We begin with the claim language, which recites "at least one action spot corresponding to a location where at least one second mobile device has engaged in at least one documenting action." Ex. 1001, 19:35–39, 20:22–24. This phrase is part of the recited determining function: "determine at least one action spot." *Id.* And according to Patent Owner, the *determined* action spot is the "output" of the determining function. PO Resp. 17–18. As we understand Patent Owner's argument, defining which

locations may be "action spots" *a priori* is different from the server determining an actual "action spot." *See* Tr. 31:21–15. There may be "input data related to documenting action" that occurred in the past, but the server "determine[s]" the action spot based on the input data. PO Resp. 18. The output then, Patent Owner reasons, is different from the input. *Id.* And, thus, the "action spot" definition from the Specification constrains the "output" (the recited "determine" step) to presently occurring activity. *See id.* (arguing that "the system achieves a solution that seeks to efficiently communicate to the user the 'current happenings' occurring in the vicinity of the user's current location" (emphasis omitted) (citing Ex. 1001, 4:44–48; McDaniel 2d Decl. ¶ 40)).

The importance of this language seems to be that, if the so-called output is limited to presently occurring activity, because of the "is occurring" language in the Specification's definition, then prior art that reports activity not presently occurring would be outside the scope of the claim. *See* PO Resp. 25–25 (arguing that Lemmela's postings accumulated over a two-month span in the past "certainly does not equate to Lemmela's system somehow outputting the user its determination that activity *is occurring* relative to the *current location* of Lemmela's mobile device 50" (emphasis in original)). We are not persuaded by Patent Owner's argument that the claim is so restricted.

The claim language plainly requires determining an "action spot" and further defines what constitutes an "action spot:" "the at least one action spot corresponding to a location where at least one second mobile device has engaged in at least one documenting action." Ex. 1001, 19:35–37. There is

no "input" and "output" distinction in the claim language. Nor is there any term in the claim that warrants divorcing the determined "action spot" from the "action spot" at which a mobile user *has engaged* in activity.

In essence, we have two competing definitions of "action spot," one flowing from the claim language, in which the "action spot" may correspond to locations with past activity, and the Specification definition, which, according to Patent Owner, precludes those locations. Ex. 1001, 3:3–5, 19:35–37. However, in a situation like this where there is little to no evidence that the claim reads on two different concepts of an "action spot"—one an input, the other the output—we conclude that the claim language precludes such an interpretation and the plain meaning controls. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (starting claim construction analysis with the "bedrock principle" that the claims define the invention and the claims are given the ordinary and customary meaning). In our view, the plain meaning is that, when the server determines at least one "action spot," that "action spot" corresponds to a location in which a mobile user has engaged in a documenting action, such as capturing and transmitting a video. The action spot, therefore, can include locations in which activity occurred in the past by the very nature of the verb tense in the verb phrase "has engaged[2]."

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[2] It is worth noting that the limitation concerning the "action spot" and the corresponding location language of the claim (i.e., the phrase containing the "has engaged" language) was recited in the original claims. *See* Ex. 1007, 30.

The patentee's lexicography cannot alter this meaning based on our review of the full record. The Specification describes four implementations of *determined* action spots. Ex. 1001, 4:4–31. This description starts: "[t]he processor can *determine* at least one action spot located within a predetermined distance from the current location of the mobile device (Block 1030)." *Id.* at 4:4–6 (emphasis added). This paragraph, thus, begins the explanation of the process of *determining* the action spot, which is what the claim is directed to. The first implementation is described as "at least one action spot can be *determined* as a location where at least one other mobile device *has engaged* in a documenting action within a predetermined period of time from the time the mobile device arrived at the current location of the mobile device." *Id.* at 4:6–11 (emphases added). This first implementation is consistent with the claim language in that the action spot that the server *determines* is the location where the activity (i.e., documenting action) may have occurred in the past. Although the Specification describes an example of the first implementation as an "action spot" that involves activity in the present tense (e.g., the other mobile device "is composing an email"), the description of the activity is not limited to currently occurring activity, because it is presented as only "an example." *Id.* at 4:11–17.

The fourth implementation is also instructive, as it states that "the at least one action spot can be the location where at least one other mobile device has documented, recorded, accounted, chronicled, or otherwise has taken note of a location or a current happening occurring at the location." *Id.* at 4:28–31. From this passage we learn that the "action spot" may refer

to locations that refer to past activity because the mobile device "has documented" a location. We also infer from this passage that there are two distinct times relevant to the second mobile device: (1) the time at which the mobile device documents a location, regardless of *when* an event takes place ("has documented . . . or otherwise has taken note of a location"); and (2) the time at which an event is happening at a location ("or a current happening occurring at the location"). *Id.* The claimed "action spot" involves the first timing, because the claim focuses on identifying as "action spots" those location at which the second mobile device has captured images or videos and transmitted messages. *Id.* at 19:35–39, 20:22–26. The claim is silent regarding whether documenting the location or the occurrence of an event must be concurrent with the determination step, such that the "action spot" refers only to "current" happenings or "current" mobile device activity.

Patent Owner's reliance on Figures 3 and 4 of the '084 patent do not persuade us otherwise. Patent Owner presents a comparison of those two figures to argue that the determination step outputs an action spot where activity "is occurring," e.g., a musical or concert, but does not report action spots of music events that "'occurred' there on previous days or weeks." PO Resp. 19–20 (citing Ex. 1001, 3:3–5, 4:44–48, 9:31–37; McDaniel 2d Decl. ¶ 41). This argument, however, characterizes the '084 patent disclosure too narrowly, ignoring other embodiments that reflect otherwise. First, the depiction of "action spots" in which a music concert is currently happening does not preclude the depiction of "action spots" in which recent (read here, not current) activity occurred. For instance, the '084 patent provides Figure 5, reproduced below, as an embodiment in which the system determines an

"action spot" where neither a current event, nor a documenting activity, are "currently" happening.

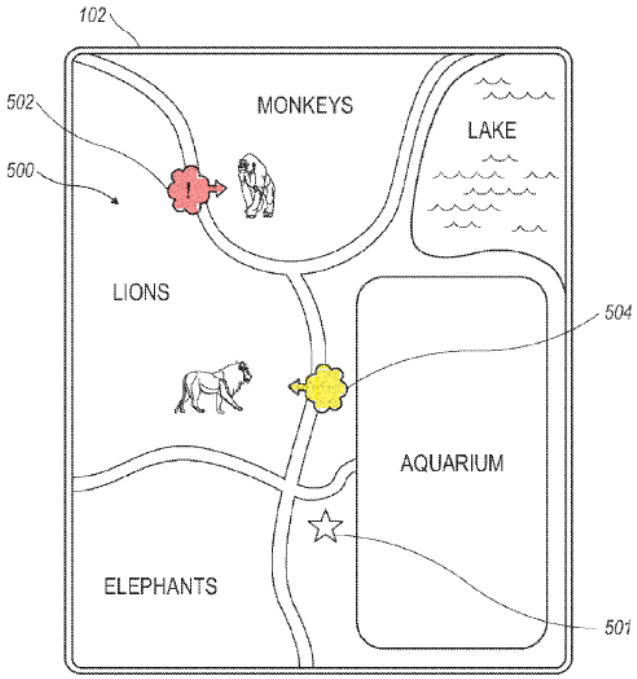


FIG. 5

Figure 5 is an illustrative implementation of a graphical user interface of a mobile device displaying a venue-specific map and action spots, showing highlighted in red the action spot labeled as item 502 and in yellow the action spot labeled as item 504. Ex. 1001, 1:61–63.

According to the Specification, Figure 5 depicts two *determined* action spots 502, 504. Ex. 1001, 11:1–3. The star depicted as item 501 denotes the current location of the mobile user. *Id.* Action spot 502 (highlighted in red) includes an exclamation point, indicating that the activity level at that spot is higher than the activity level of action spot 504

(highlighted in yellow). *Id.* at 11:9–17. The Specification also describes that, although both are displayed actions spots, the identifier of action spot 502 can indicate "that the *most recent* documenting actions are occurring at action spot 502, thereby notifying the user of the mobile device 100 that the *most current* happening is occurring at action spot 502." *Id.* at 11:17–21 (emphasis added). In this embodiment *both* action spots 502 and 504 are displayed (i.e., they are *determined* action spots), but only action spot 502 refers to the location of the *most recent* documenting action. From this explanation we conclude that the server may determine as action spots those locations in which there is documenting activity that occurred in the past, even though there may be more current documenting activity reflecting an event happening "now." *See id.* at 11:21–24 (explaining that exclamation point may indicate that a zookeeper talk or photo opportunity currently is taking place at action spot 502). Thus, we understand the '084 patent disclosure to support the contention that the claimed determination of an "action spot" encompasses determining locations where both a documenting action is occurring or has occurred.

We further find that the language of dependent claim 2 does not support Patent Owner's contention. Claim 2 depends from claim 1, and further recites "wherein the at least one action spot corresponds to a location where at least one other mobile device has engaged in a documenting action is within a predetermined period of time." Ex. 1001, 19:47–50. The language of this claim points out that the activity is permissibly within a past timeframe. Indeed, the Specification describes the predetermined time period as "within the last hour, the last twelve hours, the last twenty-four

hours, the last thirty minutes, or any other time period that is measured from the time the mobile device 100 arrived at the current location 302." *Id.* at 8:44–48. In other words, the server uses a predetermined amount of time to select locations with past-occurring activity falling within the allotted time.[3] Thus, if a mobile device documented a location at midnight on Tuesday, another mobile device arriving at that location at 8 am on Wednesday will display that location as an "action spot," when the server determines that the location has been documented within the predetermined amount of time, such as the last twelve hours.

Dependent claims are presumed to be of narrower scope than the independent claims from which they depend. *AK Steel Corp. v. Sollac & Ugine*, 344 F.3d 1234, 1242 (Fed. Cir. 2003). And an independent claim impliedly embraces more subject matter than its narrower dependent claim. *Intamin Ltd. v. Magnetar Techs., Corp.*, 483 F.3d 1328, 1335 (Fed. Cir. 2007). It cannot be then that dependent claim 2 covers past-occurring activity, but claim 1 would preclude such activity. As the court found in *Alcon Research, Ltd. v. Apotex Inc.*, 687 F.3d 1362, 1367 (Fed. Cir. 2012), a limitation recited in the dependent claim must necessarily meet the correspondingly recited independent claim limitations. For instance, in *Alcon*, the court found that concentrated ranges of an amount of olopatadine recited in dependent claims necessarily must meet the claim 1's limitations

[3] Here we focus on the past-occurring activity for purposes of illustrating our point. But the server may also use a predetermined amount of time of zero, and, then, the determined "action spot" would encompass "current" activity.

of a therapeutically effective amount. *Id.* Similarly, here, the dependent claim 2's use of a predetermined amount of time in the past for the server to determine an "action spot" must necessarily meet the claim 1's limitations of determining an "action spot." That is, the more natural reading of these claims is that claim 1 encompasses present (or "is occurring") activity *and* past activity ("has occurred"), while claim 2 circumscribes the activity to that occurring within a predetermined time period (which definitely includes past activity, e.g., within the last twelve hours). Therefore, our analysis of dependent claim 2 further supports our conclusion that the "action spot" determination required by claim 1 does not preclude activity that "has occurred."

As we did before, therefore, we find that the Specification's attempt to define "action spot" as such is sufficiently unclear because the Specification is not consistent in defining the "action spot" as limited to location where activity "is occurring," and such inconsistency fails to give notice to a person of ordinary skill in the art of the clear meaning of the term. *See In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994) (inventor may define specific terms used to describe invention, but must do so "with reasonable clarity, deliberateness, and precision" and, if done, must "'set out his uncommon definition in some manner within the patent disclosure' so as to give one of ordinary skill in the art notice of the change" in meaning (quoting *Intellicall, Inc. v. Phonometrics, Inc.*, 952 F.2d 1384, 1387–88 (Fed. Cir. 1992))); Dec. on Inst. 13. We also conclude that the claims themselves further preclude adopting Patent Owner's proposed construction.

As for Patent Owner's other argument concerning the desire for symmetry between claim constructions here at the Board and in the district court, we are not persuaded that the argument warrants a different conclusion. As we understand the posture of the "action spot" term in district court litigation, there was no express claim construction of this term during *Markman*. *See* PO Resp. 16; Ex. 2002, 9, 36–38. Indeed, we note that the parties agreed to the term and the district court merely entered that definition as an agreed definition. *Id.* at 9. We do not see the part of the order entering the parties' agreed-to definition as the same as a claim construction analysis and interpretation by the district court. Furthermore, Petitioner argues that the district court interpreted the term in the summary judgment order pertaining to the '084 patent claims. *See* Reply 2–3 (citing Ex. 1012, 40–43, 9 (listing "action spot" and the parties' agreed claim construction without analysis). And that interpretation, according to Petitioner, is consistent with our analysis here, that the claim simply states that an action spot corresponds to a location where a user "has engaged" in documenting activity, with no limits in time. *Id.*; Ex. 1012, 40. Although we do not comment on whether the district court's claim construction analysis parallels our claim construction analysis, we do note that there is no apparent conflict between the district court's determinations and orders and anything we have said here. Accordingly, we are not persuaded that the policy of consistency and symmetry of claim constructions among the Board and the district court is offended by clarifying that the term "action spot" is not limited to "is occurring" activity.

Therefore, according to the full context of the Specification and the plain meaning of the claim language, we maintain that the term "action spot" refers to a location or event where an activity "is occurring" or "has occurred," relative to the current location of another mobile device.

2. "predetermined distance"

In our Decision on Institution, we were not persuaded by Petitioner's proposed construction of the "predetermined distance" as including a "specified distance" requirement. Dec. on Inst. 14–15. Patent Owner responds to our preliminary determination by stating that "[t]he Institution Decision properly assessed this claim phrase and rejected Petitioner's proposed construction." PO Resp. 21. Patent Owner also points out that the "district court rejected Petitioner's attempt to depart from the ordinary meaning and concluded that the claims do not require either a '*specific* distance' or a determination of '*each* action spot.'" *Id.* (citing Ex. 2002, 36–38). Petitioner does not renew its claim construction position, or otherwise argue that we improperly concluded that the claims do not require a "specific distance." *Cf.* Bhattacharjee 2d Decl. ¶¶ 22–24 (stating that conclusions regarding the "predetermined distance" limitations are not affected by the Board's determination that the claim does not require a "specific distance."). We reiterate here our analysis and reach the same conclusion.

Claims 1 and 9 recite the phrase "determine at least one action spot within a predetermined distance from the current location of the first mobile device." Ex. 1001, 19:33–35, 20:20–22. Claim 5 depends from claim 1 and

recites that the "determining of the at least one action spot is based upon a defined distance from the mobile device." *Id.* at 19:58–60. We are not persuaded by Petitioner's argument that claims 1 and 9 require a "specified distance." Pet. 14. These claims describe in plain words, and without qualification, that the action spot must be within a predetermined "distance" from the current location of the first mobile device. There is no restriction as to how that distance is prescribed. The Specification plainly states that the "predetermined distance *can be* within five blocks, ten blocks, ten yards, one hundred yard[s], one hundred feet, thirty feet, ten meters, fifteen meters, five miles, ten miles, twelve miles, twenty miles, or *any other distance* from the current location 302 of the mobile device 100." Ex. 1001, 8:32–37 (emphases added). The language here is non-restrictive, e.g., "can be," and the listing of distances is circumscribed only to the extent that "any other distance" may be used. *Id*. There is no specific distance requirement anywhere in the Specification. And finally, claim 5 confirms that a "defined distance" will be further used for the determining step—leading us to conclude that the independent claim should not be limited to a "specified distance."

Consequently, we determine that the term "predetermined distance" does not require a "specified distance."

3. Conclusion

No other claim terms are in dispute, and therefore, we need not construe any further claim terms. *See, e.g., Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017); *Vivid*

Techs., Inc. v. Am. Sci. & Eng'g, Inc., 200 F.3d 795, 803 (Fed. Cir. 1999) ("[O]nly those terms need be construed that are in controversy, and only to the extent necessary to resolve the controversy.").

B. Level of Ordinary Skill in the Art

In determining the level of ordinary skill in the art, various factors may be considered, including the "type of problems encountered in the art; prior art solutions to those problems; rapidity with which innovations are made; sophistication of the technology; and educational level of active workers in the field." *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995) (internal quotation marks and citation omitted). In that regard, Petitioner proffers that a person having ordinary skill in the art would have had at least a Bachelor of Science degree in computer science, electrical engineering, or an equivalent, and at least two years of experience in the relevant field, e.g., computer networking. Pet. 3–4 (citing Bhattacharjee Decl. ¶¶ 20–22). Patent Owner, through the testimony of Patrick McDaniel Ph.D., proffers a similar level of education and experience, except for adding that the two years of experience may involve either work or research experience in the fields of "computer software, networking, and/or user experience design, or an equivalent subject matter." PO Resp. 14 (citing McDaniel 2d Decl. ¶¶ 17–18).

We note that Petitioner's assessment appears consistent with the level of ordinary skill in the art at the time of the invention as reflected in the '084 patent and the prior art asserted in this proceeding. For example, Lemmela (Ex. 1005) describes a system that presents, on a mobile device

display, locations of interest and information about those locations on a map using location-based postings in a geographic area so that the user is able to view and filter the automatically generated information. Ex. 1005 ¶¶ 7–9, Fig. 7A. We also note that neither party has argued that any particular issue depends on a particular level of ordinary skill in the art. We, therefore, adopt Petitioner's proffered level of ordinary skill in the art and apply it in our obviousness analysis below.

C. Obviousness over Lemmela and Crowley

Although Petitioner presented the Winkler-based ground first, we determined in our Decision on Institution that Petitioner had shown a reasonable likelihood of prevailing on the Lemmela based grounds, and we addressed these grounds first. Dec. on Inst. 16. We follow that same outline here.

1. Overview of Lemmela (1005)

Lemmela is directed to finding interesting locations utilizing location based postings. Ex. 1005 ¶ 7. The method includes creating a group of postings for a geographic area and creating display information for the group, including location information. *Id.* ¶ 11. The method may be implemented on a server that accesses location postings and provides information to a user on a mobile device. *Id.* ¶¶ 38, 43. The mobile device may include a Global Positioning System ("GPS") receiver to determine current location information for the mobile device. *Id.* ¶ 42.

Figure 1, reproduced below, shows example display 20 with a map of an area of interest that may be based on a user's present location. *Id.* ¶ 26.

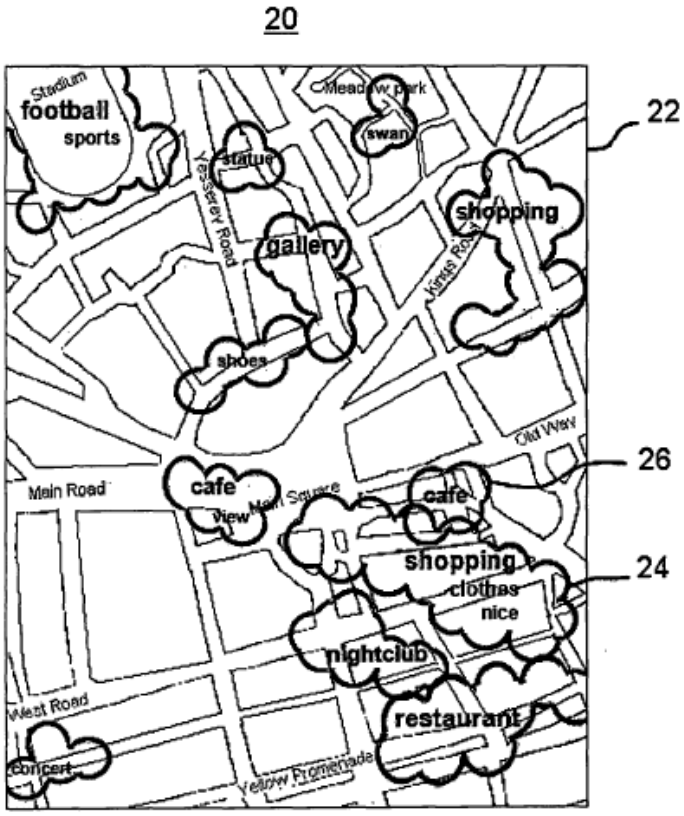


FIG. 1

Figure 1 shows a display of a map of an area of interest. Ex. 1005 ¶ 26.

Location map 22 in Figure 1 may show information and postings about places and activities proximate to the user. *Id.* ¶ 26. Figure 1 indicates areas of interest in the form of clouds 24, 26. *Id.* ¶ 27. The areas of interest may be colored based on information, such as by density of location postings. *Id.* ¶ 28. "Similarly, the shape or shading of clouds may be altered to convey different information." *Id.* For example, the "shaped boundary may be displayed in a color indicating further information about the group, for example indicating a quantitative measure of the postings in

the group." *Id.* ¶ 12. The map may also include a timeline, wherein "[t]he user can freely select the starting and ending times defining the interesting time period." *Id.* ¶ 39, *see also* Fig. 5 (illustrating a display of a device with location based postings). The display of postings may be continuously updated taking into account postings sent during the selected time period. *Id.*

Figure 4, reproduced below, shows steps of implementing the method, including accessing a collection of location postings in step 100 and determining the proximity of postings in step 104 by taking into account both the similarity between the postings and the geographic distance. *Id.* ¶¶ 33–35.

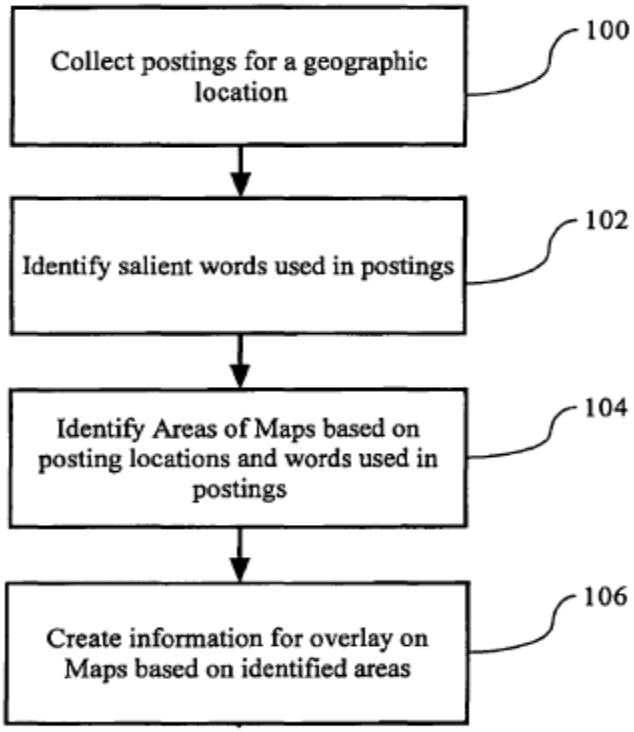


FIG. 4

Figure 4 is a flowchart of steps for creating information for a map overlay. Ex. 1005 ¶ 36.

2. Overview of Crowley (1008)

Crowley discloses a system that establishes connections between users of mobile devices by identifying the locations of related users and sending a message between related users based on proximity. Ex. 1008, 2:31–38. The system may include location engine 102 for identifying the distance between respective users to identify which users are proximate to each other. *Id.* at 12:54–65. Users within a predetermined distance receive messages about each other, wherein the predetermined distance may be a set amount, e.g., ten blocks, or may vary based on location. *Id.* A server may test for all

active acquaintances of a user, retrieve their location coordinates, "check the first member's location against those other locations," and send a message to each relevant member of the group, including the user. *Id.* at 11:3–16.

The system may note locations at which the user has recently checked in, commented on, or written reviews about. *Id.* at 15:60–64. Location databases 110 may correlate information about venues, such as venue names, with geographic coordinates for each location. *Id.* at 14:42–44. The system may identify nearby venues associated with reviews of other members. *See id.* at 14:54–64.

3. Independent Claims 1 and 9

i. "receive data indicative of a current location of a first mobile device" (Claim 1)

Claim 1 recites a server configured to "receive data indicative of a current location of a first mobile device." Ex. 1001, 19:30–32.

Petitioner relies on Lemmela to teach this limitation because it discloses the use of servers: "[t]he present invention may be implemented on a server[.]" Pet. 46 (citing Ex. 1005 ¶¶ 38, 43). Petitioner further argues that Lemmela's system discloses a number of positioning mechanisms, such as GPS, which may determine current device location information. *Id.* at 47 (citing Ex. 1005 ¶¶ 42, 38); *see also* Bhattacharjee Decl. ¶ 58[1b]). Patent Owner challenges these arguments. PO Resp. 30–35. In particular, Patent Owner asserts that the Petition does not identify any teaching of Lemmela's server actually receiving a current location of a mobile device. *Id.* at 30–31. According to Patent Owner, at best, the statement concerning use of a GPS

refer to parts of a mobile device, not a server, and the statement concerning implementation on a server is out-of-context and too generic to be a relevant disclosure. *Id.*

We are persuaded that Lemmela teaches the limitation of a server configured to "receive data indicative of a current location of a first mobile device," as recited in claim 1. We are not persuaded by Patent Owner's arguments that the Petition is deficient because it relies on a server-implementation that is not described in more detail or that the current-location determination is limited to the mobile device. Nor are we persuaded that Lemmela, as a whole, cannot be considered, as we did in our Decision on Institution, to give context to the assertion that Lemmela's server receives the current-location information. We start with an explanation of how Lemmela discloses the context in which the server identified by Petitioner operates.

First, in our Decision on Institution, we gave notice to Patent Owner of Lemmela's disclosure about clouds displayed on the map as evidence that the server receives the current location of the mobile device:

> We are not persuaded by Patent Owner arguments at this juncture. Petitioner points out in connection with one of the "action spot" limitations (element 1[c] in the Petition) that Lemmela illustrates a map of an area of interest which is based on a user's present location. Pet. 49 (citing Ex. 1005 ¶ 26). This teaching reasonably shows that Lemmela's "super-set" of information that is presented via clouds on the map is based on the current location of the mobile device. Indeed, Figure 1 shows the various clouds on the map of a particular city that is displayed because the user is "visiting this particular city." Ex. 1005 ¶ 26. This description teaches or suggests, that a server, which

> Petitioner has pointed out as implementing the system disclosed in Lemmela, has received the current location of the mobile device (such as the city or part of the city the user is visiting) in order to provide the "super-set" of information to the mobile device about the area of interest in the city or part of the city where the mobile device is located.

Dec. on Inst. 23–24. In this passage of our Decision we analyzed the disclosure of the "current location" consistent with the sections in the Petition that address the "current location" limitations. Patent Owner argues that this is an impermissible expansion of our authority because we allegedly relied "on an unpatentability theory that could have been included in a properly-drafted petition, but was not." PO Resp. 32 (citing *In re Magnum Oil Tools Int'l, Ltd.*, 829 F.3d 1364, 1378, 1380–81 (Fed. Cir. 2016)). Patent Owner's concern is misplaced. Our analysis in the Decision and here addresses Petitioner's contentions regarding the "current location," which is recited in what Petitioner labels as limitation [1b] and limitation [1c].

As stated above, for limitation [1b], the Petition identifies Lemmela's server as receiving the information and identifies the mechanisms for determining location information, such as GPS. Pet. 46 (citing Ex. 1005 ¶¶ 38, 43). For limitation [1c], which also recites the "current location," Petitioner identifies that Lemmela's maps are "based on a current location of the viewing user's mobile device." Pet. 49. And Petitioner shows that such a location corresponds to the "map of an area of interest" because Lemmela discloses the map and information displayed as "based on a user's present location." *Id.* (citing Ex. 1005, Fig. 1, ¶ 26). These two teachings, and the [1b] and [1c] claim limitations, are inexorably linked because the claim

language requires that the same "current location" that the server receives is used to determine the at least one action spot. Thus, we do not agree with Patent Owner that consideration of paragraph 26 of Lemmela is outside the scope of the Petition's contentions and impermissibly raises a new unpatentability theory that we cannot rely on in our analysis.

Paragraph 26 of Lemmela *expressly* states that the map displayed on the user device "may be based on a user's present location." Ex. 1005 ¶ 26. Patent Owner's contention regarding paragraph 26 is that it does not expressly state that the *server* actually receives the data indicating the user's *current* location. PO Resp. 33. According to Patent Owner, the server has pre-processed data that need not, and does not, relate to the actual location of the user. *Id.* We determined this argument was unpersuasive at institution and, based on the fully developed record, it remains unpersuasive now. Again, paragraph 26 provides more context than Patent Owner gives credit. Lemmela's example of identifying areas of interest on a map cited in the Petition is in the context of the user's proximity to the location: if the user is visiting this particular city and is searching for information and postings about places and activities proximate to the user. *Id.* Again, Lemmela plainly discloses that the user searches for points of interests "proximate to the user" and, thus, the server must know of the user's current location. *Id.* Although Patent Owner desires we view this in context of a system that has no knowledge of the current location of a user's mobile device, we cannot ignore the background in which Lemmela is poised: "mobile terminals are starting to come equipped with GPS (Global Positioning System) features, location based posting[s] will become more prevalent." *Id.* ¶ 2. Lemmela

plainly discloses that it was known for users of mobile devices to "post" information about a location, "typically about the user's present location." *Id.* Thus, arguing paragraph 38 in isolation, despite being cited in the Petition and pertinent to the disclosure of paragraph 26 that teaches how Lemmela uses the "current location" to display maps of interest to the user, is, in our view, an overly narrow reading of Lemmela's disclosure.

We find that Lemmela teaches or suggests that *a server*, which Petitioner has pointed out as implementing the system disclosed in Lemmela (Ex. 1005 ¶ 38), receives the current location of the mobile device (such as the city or part of the city the user is visiting) (*id.* ¶ 26) in order to provide the information to the mobile device about the area of interest in the city or part of the city where the mobile device is located. For instance, Lemmela teaches that the server implements the "present invention" that "accesses and processes the location postings in order to create information that can then be provided to users through any standard display device, such as web browser, mobile terminal, PDA [personal digital assistant], or even printed out." *Id.* ¶ 38. Patent Owner urges us to focus on the "pre-processing" aspect of the invention in this "present invention" statement of Lemmela. PO Resp. 31–32 (arguing that Lemmela confirms that Lemmela's server performs the backend "pre-processing" operations and the information is stored locally on the mobile device for subsequent access). But this disclosure also provides that Lemmela is directed to *providing* the information to the users through a mobile terminal and PDA. This information together with the background of Lemmela paints the picture that the environment is one in which the mobile devices have GPS capability,

upload location-based postings, and are able also to request points of interest and download the Lemmela map information based on their "present location." *See* Ex. 1005 ¶¶ 2, 38, 25, 26.

We also note and emphasize that Lemmela teaches the invention could "alternatively" be implemented in a mobile terminal—to receive a defined collection of location postings and perform the processing and display itself. *Id.* ¶ 38; *but see* Sur-Reply 10 (arguing that the alternative embodiment is a late theory that should not have been raised, but addressing the merits of this alternative embodiment anyways). In other words, in an embodiment where Lemmela's mobile terminal performs the "pre-processing," there may be no need for the server to determine the location because the mobile terminal is capable of determining this on its own, given its use of GPS technology. *See id.* ¶¶ 40–43; *but see* Sur-Reply 10 (arguing that Lemmela has no explicit description of how the server would provide the defined collection of postings to the mobile device in the alternative embodiment). However, even though Lemmela does not explicitly describe the handshake between the mobile device and the server, this alternative embodiment suggests that the mobile device will send the *current location* to the server that contains the database of location information because the mobile terminal will still need to receive the defined collection of location-based postings to process them. Ex. 1005 ¶ 38 (stating that the mobile device "may be provided an ability to receive some defined collection of location postings"); *see id* ¶ 2 (describing that the postings are placed in a public-accessible database). Thus, Lemmela clearly contemplates, and the Petition sufficiently conveys, that the server must provide either a collection

of location-based postings or the "pre-processed" information that the mobile device requests at the user's present location. Ex. 1005 ¶ 43; *see* Bhattacharjee 2d Decl. ¶ 34; Reply 28.

We find it reasonable to infer from all these disclosures that the mobile device, in the server-implemented embodiments, downloads the Lemmela location-based posting information based on the "present location" of the user. *See* Bhattacharjee 2d Decl. ¶ 34. And, therefore, we conclude that to deliver the information to display on the mobile device, the Lemmela server has received the current location of the mobile device. Bhattacharjee 2d Decl. ¶ 34 ("A person of ordinary skill in the art would have understood that a GPS-enabled device querying the server for information based on the device's current location would involve the server receiving device location information."); ¶ 35 ("Thus, a person of ordinary skill in the art would have understood that a system implementing option (2) above would involve the mobile device sending its location information to the server, in order for the server to provide the device with a 'defined collection' of posts.").

Whether the server uses GPS coordinates or another type of location information is irrelevant to the claim language, which requires neither a particular sender of the location information nor the use of any particular location technology. Nor does the claim require that the current location be provided with any particularity. Lemmela's teaching that "the user is visiting this particular city, and is searching for information . . . about places and activities proximate to the user" (Ex. 1005 ¶ 26), teaches, or at a minimum suggests, that the current location of the user may be the "city" the user "is visiting" (note the present tense) and the server provides the search

results of pre-processed location-posting information pertaining to the city the user is visiting. Ex. 1005 ¶ 26. This amounts to sufficient evidence to support a finding that Lemmela's server teaches or suggests that the server is configured to "receive data indicative of a current location of a first mobile device."

Lastly, we address Patent Owner's argument urging that we view Lemmela as teaching a different system, one in which a user downloads the map and location-posting information before the user visits the city. PO Resp. 34; Reply 9–10. Patent Owner relies on the testimony of Dr. McDaniel who testifies that mobile data networks in the timeframe of Lemmela were slower than today's networks and had less bandwidth. McDaniel Decl. ¶ 68. Dr. McDaniel's testimony, however, focuses on downloading or updating *maps* in portable GPS devices, like Garmin and TomTom, to conclude that it would not be *inherent* to download maps on the go. *Id.*; *see also* Sur-Reply 9 (arguing against inherency). But the information we are concerned with in Lemmela is not the map themselves, but rather, the location-posting information that the server processes and delivers to the mobile device. Ex. 1005 ¶ 43. The location-posting information is *overlaid* on a map. *Id.* ¶¶ 5, 28. The searches that the user can do for "places to eat near the stadium" (*id.* ¶ 3) pertain to location-posting searches, not necessarily a map download. Further, we are more concerned in this ground of *obviousness* with what a person of ordinary skill in the art would have understood Lemmela to teach, not on whether Lemmela *inherently* discloses the limitation. *See W.L. Gore & Assocs., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1555 (Fed. Cir. 1983) ("Inherency and

obviousness are distinct concepts.") (citing *In re Spormann*, 363 F.2d 444, 448 (CCPA 1966)).

Nevertheless, on the present record, Dr. Bhattacharjee explains, and we credit the testimony, that in the Lemmela timeframe mobile devices had limited memory and it would have made sense to download a particular data set, *incrementally* and *only as needed*, which would guarantee that the information is up to date. Bhattacharjee 2d Decl. ¶ 38. In other words, the contention Patent Owner presents of downloading maps and location-based information in advance, without a present need and occupying memory unnecessarily, would *not* have been desirable in light of the more real-time solution of a mobile device communicating a need for the information for the current location and that information being downloaded incrementally.

Thus, we do not agree that the alleged network bandwidth and transmission limitations of wireless networks would have been a reason for a person of ordinary skill in the art to view Lemmela as precluding downloads when a user was at a location and desired the location-posting information overlay that Lemmela offered. Accordingly, we do not credit Dr. McDaniels's testimony in this regard. Rather, we credit Dr. Bhattacharjee's testimony, as stated above, as evidence of what a person of ordinary skill in the art would have understood when reading Lemmela in its entirety. And we find that this testimony was presented properly, within the proper scope of the Reply, as rebuttal to the testimony presented in response by Patent Owner's declarant. *See* Sur-Reply 11 (arguing that Petitioner's explanation of the limited memory tradeoff is a "new theory"); *but see Anacor Pharmaceuticals, Inc. v. Iancu*, 889 F.3d 1372, 1380–81 (Fed. Cir. 2018)

(emphasizing that in an *inter partes* review introduction of new evidence "is to be expected" as long as there is notice of the evidence and an opportunity to respond and that, after the petition, it is proper to present new evidence that is "a legitimate reply to *evidence introduced by the patent owner*" (internal citations omitted) (emphasis added)).

Accordingly, we find that Lemmela[4] teaches or suggests that the server receives current location of a first mobile device, as required by claim 1.

ii. "determine, via a processor, a current location of the first mobile device" (Claim 9)

Claim 9 is directed to a computer program product and recites the program code configured to cause the first mobile device to "determine, via a processor, a current location of the first mobile device." Ex. 1001, 20:11–19. Petitioner argues Lemmela teaches this limitation because it implements its methods and features through mediums that store computer-readable instructions to provide action spots on a mobile device. Pet. 60 (citing Ex. 1005 ¶ 45; Bhattacharjee Decl. ¶ 63[9a]). Petitioner also points to Lemmela's disclosure of the mobile device, including a processor that determines its own location as follows: "GPS receiver 64 receives GPS

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[4] In the Reply, Petitioner argues that it properly relies *also* on Crowley for the "current location" limitation. Reply 29. This is not so. The Petition does not reasonably convey that Petitioner intended to rely on Crowley for the proposition that the server receives the "current location." *See* Pet. 46–48. Thus, we do not address Petitioner's belated contentions that Crowley teaches this limitation. *See* PO Resp. 11–12.

transmissions and communicates with processor 52 to enable the processor to determine current location information for mobile device 50." *Id.* at 61 (citing Ex. 1005 ¶ 42). We note here that claim 9 is broader than claim 1 insofar as claim 1 does not require any particular device to store the program code. Nor does claim 9 require that any particular device (i.e., a server) receive the current location, as required in claim 1. Patent Owner does not address separately this limitation. *See generally* PO Resp.; Sur-reply.

We determine that Petitioner has shown by a preponderance of the evidence that the processor-based mobile device of Lemmela determines its current location and, therefore, teaches this limitation required by claim 9.

iii. "action spot" (Claims 1 and 9)

Claims 1 and 9 each recite "determine at least one action spot within a predetermined distance from the current location of the first mobile device." Ex. 1001, 19:33–35, 20:20–22 (the "determine an action spot" limitation). Claims 1 and 9 further each recite that "the at least one action spot correspond[s] to a location where at least one second mobile device has engaged in at least one documenting action, the documenting action including at least one of capturing images, capturing videos and transmitting messages." *Id.* at 19:35–39, 20:22–26 (the "has engaged" limitation). For ease of reference, we reiterate that the "action spot" term, discussed in Section III.A.1 *supra*, refers to a location or an event where at least one activity is occurring or has occurred, relative to the current location of another mobile device.

Petitioner's analysis, supported by the Bhattacharjee Declaration, demonstrates that Lemmela teaches these limitations because it discloses that a server groups together virtual location-based posts, as the recited "action spots," using common characteristics of the posts, such as salient words. Pet. 47–48, 61 (citing Ex. 1005 ¶¶ 11, 33–35, 38, 42, Fig. 4). Petitioner argues that these posts correspond to the location of the recited "documenting action" that includes "transmitting messages," because the posts were transmitted by mobile devices while at the location about which the posts refer. *Id.* at 48 (citing Ex. 1005 ¶ 33). Furthermore, as stated above with regard to the "current location" discussion, Petitioner points out Lemmela's disclosure of the map display where the groups of posts are presented within the user's present location. *Id.* at 49 (citing Ex. 1005 ¶ 26). Thus, according to Petitioner, Lemmela discloses displaying the groups of posts as "action spots" that are within a predetermined distance from the current location as they are shown to the user in the map displayed based on the user's current location. *Id.* at 48–50. And, according to Petitioner, the displayed post groups or "action spots" correspond to the locations where users have engaged in transmitting messages. *Id.*

Patent Owner challenges Petitioner's assertions concerning Lemmela based on the claim construction argument that the "action spot" term precludes past-occurring activity. For instance, Patent Owner argues that Lemmela's "clouds" superimposed on the map are historical posts (of activity that was detected over previous days or weeks) not indicative that an activity "is occurring" relative to the location of the user's mobile device. *See* PO Resp. 23–26 (citing McDaniel 2d Decl. ¶¶ 51–53). These

arguments, and similar arguments, are unpersuasive because they rely on a claim construction we did not adopt. That is, Lemmela's overlaid clouds are not distinguishable over the claimed "action spot" merely because the clouds include activity that occurred in the past.

Based on the fully developed record, we find that Lemmela teaches determining "at least one action spot within a predetermined distance from the current location of the first mobile device." As shown in Figure 1 of Lemmela, reproduced below, Lemmela displays grouped postings within an area around the current location of the first mobile device (Pet. 50):

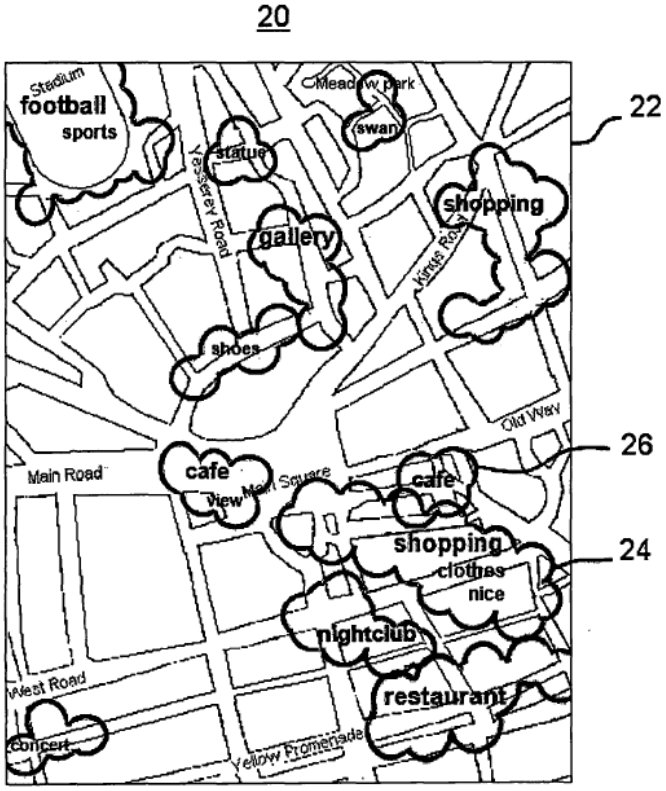


FIG. 1

Figure 1 shows a display of information created by an illustrative embodiment of Lemmela and shows display 20 depicting map 22 of an area of interest and clouds 24 and 26 superimposed over map 22.

The server, according to Petitioner, and we agree, groups virtual location-based posts based on common characteristics, such as postings originating from a certain location that contain a particular, common, salient word. *Id.* at 48 (citing Ex. 1005 ¶¶ 11, 34, 35, 38, Fig. 4). For instance Lemmela describes that the server identifies location-based postings in a given geographic area, scans the postings for common words, and groups them based on the common words to create a display for the group based on the location information and the common words of the group. Ex. 1005 ¶¶ 11, 38 (identifying the server implementation). Lemmela further explains that the common, or salient words, may, in one example, be preselected, such as restaurant, food, etc. *Id.* ¶ 34. Lemmela also explains the use of a clustering algorithm to determine the proximity of the postings to each other. *Id.* ¶ 35. From these disclosures, we understand Lemmela to teach that a displayed cloud shown in Figure 1, such as the restaurant cloud, reflects the area or location where other mobile devices have transmitted posts concerning the restaurants located in that area. These clouds, thus, meet the definition of "action spots" because they refer to locations where a documenting action or posting (read here "activity") is occurring or has occurred relative to the user's current location (read here "current location of another mobile device"). Based on the same disclosures of Lemmela, we also find that the Lemmela clouds meet the "has engaged" limitation because these clouds refer to location where other mobile devices have transmitted

postings (read here the claimed "messages"). Furthermore, as Petitioner argues and we agree, those clouds are located within *an area* around the current location of the first mobile device. Pet. 49–50 (citing Ex. 1005 ¶ 26; Bhatacharjee Decl. ¶ 58[1c]).

As for the recited "predetermined distance," Petitioner *additionally* relies on the teachings of Crowley in combination with those of Lemmela. Pet. 50–54. Although we have determined that the "predetermined distance" does not require a "specific distance," Petitioner's assertions regarding Crowley are nevertheless relevant to our determination because they further highlight that Lemmela's teachings combined with those of Crowley would have resulted in the Lemmela mapped clouds to be located within a certain distance of the "current location" of the first mobile device. *Id.* at 50 (stating that "[i]t would have been obvious to a [person of ordinary skill in the art], however, to modify Lemmela based on the teachings of Crowley such that the determination of action spots was limited to those within a specific distance from the current location of the first mobile device.").

Petitioner asserts, and we agree, that Crowley teaches a server that receives the current location of the mobile device and a specific distance before it determines to which second users it should send the first user's message. *Id.* (citing Ex. 1008, 9:64–65, 11:3–14, 20:62–21:8; Bhattacharjee Decl. ¶ 58[1c]). For instance, Crowley describes a location engine at the server that computes the locations of the active "acquaintances" of the mobile device user to identify which acquaintances are proximate, such as within ten blocks of each other. Ex. 1008, 12:54–65. Crowley further describes that such a distance of ten blocks is "predetermined." *Id.* Based

on the application of such a predetermined distance and the identification of the active "acquaintances," Crowley performs the action of transmitting messages. *Id.* at 11:10–16.

Petitioner then argues, and we agree, that it would have been obvious for a person of ordinary skill in the art to combine the teachings of Lemmela with those of Crowley, as described above, to configure Lemmela to determine only the groups of posts within a specific distance of the first mobile device. *Id.* at 51 (citing Bhattacharjee Decl. ¶ 58[1c]). Such a combination involves, according to Petitioner, combining prior art elements according to known methods to yield predictable results. *Id.* Dr. Bhattacharjee provides testimony to this effect, which we credit, and further explains that Lemmela already discloses how to identify a subset of postings by filtering and processing the location-based postings to create a mapped display. Bhattacharjee Decl. ¶ 58[1c]. As evidenced by Crowley, distance determination is known and combining it with Lemmela would have resulted in beneficially providing the user with the ability to choose a specific distance from her current location where the system would determine the relevant grouped posts. *Id.*; Pet. 52–53. A person of ordinary skill in the art would have appreciated that such a combination would also result in reduced processing by Lemmela's system and would present the user with the "most interesting [groups] from their point of view." *Id.* Pet. 53 (quoting Ex. 1005 ¶ 10).

We address now Patent Owner's argument that the "Petition fails to adequately explain why a [person of ordinary skill in the art] would have been motivated to combine Crowley's teachings with Lemmela *at the time of*

the invention (e.g., at least as early as August 27, 2010)." PO Resp. 39. According to Patent Owner, the Petition casts arguments and evidence using language evocative of hindsight: what the combination "would involve" (in the present time) rather than what "would have happened" in August 2010. *Id.* at 40. Patent Owner further sets forth that arguments about Lemmela and Crowley being in a "similar field" and addressing "similar problems" is not an explanation of a reason to combine, and that alleged internal inconsistencies present further evidence of hindsight. *Id.* at 40–41. We are not persuaded by Patent Owner's arguments.

First, the semantic differences between "would" versus "would have" cannot be superficially applied as an *ipso facto* determination of hindsight. Rather, we attribute to hindsight arguments where the *sole* source of the knowledge as support is the claimed invention. *InTouch Technologies, Inc. v. VGO Commc'ns, Inc.*, 751 F.3d 1327, 1351 (Fed. Cir. 2014) ("It appears that [the expert] relied on the . . . patent itself as her roadmap for putting what she referred to as pieces of a 'jigsaw puzzle' together."); *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1553 (Fed. Cir. 1983) ("To imbue one of ordinary skill in the art with knowledge of the invention in suit, when no prior art reference or references of record convey or suggest that knowledge, is to fall victim to the insidious effect of a hindsight syndrome wherein that which only the inventor taught is used against its teacher."). Here, we have more than what Patent Owner alleges with respect to semantics. The Petition cites testimony that a person of ordinary skill in the art "would have been motivated" to configure Lemmela for "action spot" determination within a specific distance, as taught by Crawley. Pet. 51. The

"would" statements Patent Owner identifies as evidence of hindsight refer to the Petition's statements paralleling the *KSR* framework: "would require nothing more than basic methods already known in the art," "would also yield a predictable result," and "would also involve a simple substitution." *Id.* at 51–52. None of the Petition's statements highlighted by Patent Owner actually address whether the *knowledge* alleged to motivate the combination is gleaned from the '084 patent itself.

Second, we addressed above that Petitioner has set forth a sufficient explanation for *why* a person of ordinary skill in the art would have looked to Crowley in light of Lemmela's server's determination of the location information. We have not relied on the statements in the Petition that set forth the foundation for the references, i.e., that they are analogous art. Their similarities and problems addressed are indicative that they are analogous and we have regarded those statements as such. But that is not the only explanation Petitioner has proffered for why a person of ordinary skill in the art would have combined the teachings of Lemmela and Crowley. We stated above that a person of ordinary skill in the art would have appreciated that combining Crowley's distance determination with Lemmela's server operation would have resulted in beneficially providing the user with the ability to choose a specific distance from her current location where the system would determine the relevant grouped posts. *See* Pet. 52–53. We also noted above that Lemmela would present to the user the points of interest in which the user is most interested. *Id.*

Finally, we do not understand Patent Owner's allegation that the stated motivation to combine "rests upon a flawed theory that abandons

Petitioner's premise" for other elements that are performed by the server. PO Resp. 41. This argument is not developed sufficiently, and is difficult to piece together based on Patent Owner's bare assertions. In any event, we do not see any inconsistencies in the rationale that warrant a finding of hindsight. Petitioner has shown that Crowley's server uses the set distance to identify locations of other users (Pet. 50), and that the server in Lemmela processes the location-based information (*id.* at 47). Both of these operations are server-implemented. Indeed, Petitioner reasons that a modification of Lemmela would have involved adding Crowley's specific distance filter (again, this is performed at the server) to the determination of Lemmela's groups of posts (in the server-based implementation), which would only require performing known methods. *Id.* at 52 (citing Ex. Bhattacharjee Decl. ¶ 58[1c]). We note that the Petition references in this particular discussion the mobile device implementation of the Lemmela process, where the mobile device receives "some *defined collection of location postings*." *Id.* at 51 (citing Ex. 1005 ¶ 38).[5] But we see this as supporting the statement that it was known, as taught by Lemmela, for the server to select a subset of the location-based postings, and process that subset to create the display. What is important here is that Lemmela teaches

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[5] This citation in the Petition belies Patent Owner's argument that we should disregard Petitioner's arguments regarding the mobile device implementation because the Petition does not mention the mobile device embodiment of Lemmela. *See* Sur-Reply 10. In any event, we rely on the Petition's assertions concerning the mobile device implementation for what it was presented, as factual support of the stated reasons to combine the teachings of Lemmela with those of Crowley.

the selection of a subset of postings and that selection process would have been aided by Crowley's distance determination, such that Lemmela's selection process would have involved using the distance from the mobile device as a basis for selecting the subset of the postings. Therefore, we find unpersuasive Patent Owner's arguments of either inconsistency or lack of explanation of the rationale.

Accordingly, we determine that Petitioner has demonstrated by a preponderance of the evidence that Lemmela teaches the "determine an action spot" and "has engaged" limitations of claims 1 and 9. And Petitioner has demonstrated, in the alternative, by a preponderance of the evidence, that the combined teachings of Lemmela and Crowley also teach the "determine an action spot" limitation of claims 1 and 9.

iv. "transmit the at least one action spot" (Claim 1)

Claim 1 recites "transmit the at least one action spot to the first mobile device." Ex. 1001, 19:40–41. Petitioner relies on Lemmela to teach this limitation because it discloses the server providing to users the groups of location postings. Pet. 54 (citing Ex. 1005 ¶ 38; Bhatacharjee Decl. ¶ 58[1d]). Thus, Petitioner concludes that Lemmela teaches transmitting the at least one action spot (Lemmela's cloud information) to the mobile device, as claimed. We agree with Petitioner that Lemmela discloses this limitation. Lemmela teaches that the server performs the processing of the location-based postings that, as we discussed before in connection with the "action spot" limitations, is for the purpose of providing the user the information that is displayed as clouds (i.e., action spots). Ex. 1005 ¶ 38. Patent Owner

does not address separately this limitation. *See generally* PO Resp.; Sur-reply.

We determine that Petitioner has demonstrated by a preponderance of the evidence that Lemmela teaches this limitation.

v. "activity level" limitations (Claims 1 and 9)

Claim 1 recites "transmit to the first mobile device, an indication of an activity level at the at least one action spot, wherein the activity level is based upon at least one of a number of images captured, a number of videos captured, and a number of messages transmitted." Ex. 1001, 19:42–46. Claim 9 similarly recites "display[ing] a level of activity associated with the at least one action spot, the level of activity based upon at least one of a number of images captured, a number videos captured, and a number of messages transmitted." *Id.* at 20:33–36. We refer to these as the "activity level" limitations.

To teach these limitations, Petitioner relies on Lemmela's transmission of the action spot as evidence applicable also to this limitation for claim 1, which also requires transmission. Pet. 54–55. In other words, because Lemmela transmits the action spot, it also transmits the "activity level." As to the "activity level," Petitioner relies on Lemmela's disclosure of the "heat map," in which certain areas are colored based on the information being presented. *Id.* at 55 (citing Ex. 1005 ¶ 28). According to Lemmela, the displayed areas of interest, determined by location postings, may use "[d]ifferent colors" depending on "type of interests (shopping, dining, events, sightseeing, etc.), price ranges, or by density of location

postings." Ex. 1005 ¶ 28. Additionally, Petitioner relies on Lemmela's disclosure that the groups of postings displayed as clouds would have a shaped boundary displayed in a color indicating information about the group, "for example indicating a quantitative measure of the postings in the group." Pet. 55 (citing Ex. 1005 ¶ 12). We agree with Petitioner that Lemmela's teachings convey to a person of ordinary skill in the art that Lemmela's clouds ("action spots") indicate activity level at the locations covered by the clouds because the color differentiators convey a measure of quantity (read here "level") of location-based postings (read here "activity") at the location.

Patent Owner disagrees because the recited "activity level" must reflect "levels of actions" of the mobile devices at the location. PO Resp. 35 (citing Ex. 1001, 9:59–65; Ex. 2002, 39–40). Patent Owner supports this contention with the claim construction order in district court that construes the term "activity level" as "level of actions taken by one or more other mobile devices." Ex. 2002, 40–41. Stated differently, Patent Owner's argument is that the "level of actions" must be commensurate with the amount of *all* the postings at the location, not a subset. In particular, Patent Owner argues that Lemmela filters the location-based postings using salient words, and only those postings comprise the group that is displayed as Lemmela's clouds. PO Resp. 36 (citing Ex. 1005 ¶¶ 7, 25, 34, 35). The "level" displayed, according to Patent Owner, corresponds to level of *salient word commonality* and that Lemmela's density metric skews further this so-called level. *Id.* (citing McDaniel 2d Decl. ¶ 74); Sur-Reply 15 (arguing that Lemmela's "metrics convey information that is far different from a level of

activity at an action spot"). We are not persuaded by Patent Owner's arguments.

The issue here is whether the "level" of activity can include *a subset* of *all* the activity of an action spot, i.e., whether some filtering can be performed on the transmitted messages and still reflect the claimed "activity level." Patent Owner frames its anti-filtering argument with a hypothetical: consider two areas of interest, a stadium and a post office, and that in the stadium, there are 2,000 location-based postings. *See* PO Resp. 36–37 (referring to example in McDaniel 2d Decl. ¶ 74). At the post office, continuing with the hypothetical, there are 200 location-based postings, most of those postings containing salient words relating to mail, such as "envelope, stamp, mail." McDaniel Decl. 2d ¶ 74. According to Dr. McDaniel, the number of postings at the stadium is very high in comparison to the number of postings at the post office, but the salient-word count for the stadium location would be very low (dare we say zero), which pales in comparison with the occurrences of those words in post-office based postings. *Id.* Dr. McDaniel opines that Lemmela's "quantitative measure" would be greater for the post office than for the stadium, because of the omission of post-office based salient words in those postings. *Id.* Yet Dr. McDaniel admits that claims 1 and 9 *do not exclude all forms of filtering*. *Id.*; *see also* PO Resp. at 37. Thus, we are presented with the question of whether, under such a hypothetical, Lemmela's salient word embodiment comports with the required "activity level." We determine that this argument is not commensurate with the scope of claims 1 and 9, and the

hypothetical is not consistent with Lemmela's teachings. We also conclude that the filtering does not defeat Lemmela's teaching of an "activity level."

First, the claim language does not limit the "activity level" as requiring a calculation to account for "all" the number of messages transmitted. *See* Ex. 1001, 19:44–46 (reciting "the activity level *is based upon* at least one of . . . a number of messages transmitted" (emphasis added)). Indeed, as long as the "activity level" is *based upon*, at least in part, the number of messages transmitted, then the claim language is met. Therefore, the claims do not preclude filtering of the transmitted messages and determining an "activity level" based on *filtered* transmitted messages, because those messages are "transmitted messages" and the "activity level" would be based upon those. Again, Patent Owner's declarant admits that claims 1 and 9 do not exclude all forms of filtering. McDaniel Decl. 2d ¶ 74.

Second, there is no evidence that Lemmela's cloud display would work as Dr. McDaniel hypothesizes and, thus, we give no credit to this testimony. As stated above, Lemmela describes using a quantitative measure of the postings, after the postings have been grouped according to their common words. Ex. 1005 ¶ 12. And the commonality factor, itself, ensures that the filtered group of postings is representative of the total number of postings in the area. *See* Bhattacharjee 2d Decl. ¶ 44. We understand from Dr. Bhattacharjee's Declaration, which we credit in this regard, that "the level of salient word commonality may actually be proportional to the number of posts at a location." *Id.* We concur with this testimony as it is consistent with the teachings of Lemmela. Lemmela

describes that its first assessment of *all* the postings is to scan them for common words and group them as such. Ex. 1005 ¶ 11. Such an example is explained with respect to Figures 2A and 2B of Lemmela, stating that "[m]any closely situated public postings 30 are examined based on the words *within them*, typically with particular emphasis on salient words." *Id.* ¶ 31 (emphasis added). It turns out that the most common word is "pizza" (or some synonym of that word), and Lemmela creates the cloud based on postings containing the word "pizza" or some synonym of that word. *Id.* If the most common word is "pizza" and there is a pizza restaurant at that location, it stands to reason that the number of postings that are used to present the cloud are actually proportional to the total number of postings in that area.

In the example provided by Dr. McDaniel, however, the assumption that Lemmela would create a group of stadium postings based on salient words that are not common in the postings for that location is wrong. For instance, Lemmela would display a cloud for "football" at the stadium, because that is the most common word in the postings for the stadium location. *See* Ex. 1008, Fig. 1 (displaying "football" and "sports" as common words in the Stadium cloud). The assumption that the stadium postings would be filtered for words from postings of other locations, such as a post-office, is not supported by Lemmela. Therefore, we find that Lemmela would not display a cloud for the stadium that reflects a low percentage of post-office based words, as argued by Patent Owner.

In any event, the claim language does not reflect any particular manner of calculating or displaying the "activity level," and all that is

required is that the level displayed is "based upon," at least in part, the number of messages transmitted. Here, Lemmela's grouping of postings after scanning for the common word(s) and displaying a quantitative measure of these postings is sufficient to show that the clouds of Lemmela reflect an "activity level" that is based upon the number of transmitted postings.

Accordingly, we determine that Petitioner has demonstrated by a preponderance of the evidence that Lemmela teaches the "activity level" limitations of claims 1 and 9.

vi. "graphical item" limitation (Claim 9)

Claim 9 recites "display[ing] a graphical item on a display of the first mobile device, said graphical item identifying a direction, relative to the current location, in which to travel in order to arrive at the determined at least one action spot." Ex. 1001, 20:28–29 (the "graphical item" limitation).

Petitioner relies on Winkler to teach this limitation because it discloses a display showing a direction of travel to a map element. Pet. 62 (referring back to pages 38–41, where Petitioner lays out arguments that Winkler discloses the limitation recited in claim 9 and citing Exhibit 1004, column 13, lines 21–31). Petitioner further explains that Winkler teaches an embodiment in which a user attempts to walk toward a store, and the system changes a map element's color to indicate that the user is heading in the right direction. *Id.* Petitioner proffers that a person of ordinary skill in the art would have understood at the time of the invention that a "real-time map update" based on "user movements along a route" would likely include a

graphical display of the correct direction in which to travel. Pet. 63 (citing Bhattacharjee Decl. ¶ 63[9d]). Winkler's display of directions, therefore, according to Petitioner, would have allowed devices to display the locations of the grouped posts, along with directions to those locations. *Id.*

Patent Owner challenges these assertions on two distinct bases. First, Patent Owner argues that Winkler's "graphical element" represents the location itself, and does not provide directions. PO Resp. 42; Sur-Reply 13. Second, Patent Owner argues that Petitioner's reasons for combining the teachings of Lemmela with those of Winkler are conclusory, vague, and are insufficient to understand the combination. PO Resp. at 43–44. We address each argument as we set forth our analysis for why Winkler's disclosure, combined with Lemmela, teaches the "graphical item" limitation.

We begin with a brief overview of Winkler and a discussion of the Winkler embodiment relied on by Petitioner. Winkler describes various ways to present information on a user interface of a mobile device that displays a map, with map elements. Ex. 1004, code (57). Map elements are tags that display the location of one of the users of the system, and that act as an interface to launch a communication session between or among two or more users. *Id.* at 2:8–12. Winkler's map elements may be associated with a location, but also correspond to the user's friends, family members, contacts, or members of a group associated with the mobile device user. *Id.* at 2:16–29. What is important in Winkler is the ability to dynamically update the display based on geographical movement of friends, family members, contacts, or group members into and out of a displayed region on a map. *Id.* at 2:29–33. Winkler, however, explains that the presented

information does not necessarily need to be on a map application. *Id.* at 12:63–65. One example Winkler provides is that of having up-to-date locations for all the friends in a user's address book, which gives the mobile device the ability to sort the address book based on the locations of the friends, from closest friend to farthest friend. *Id.* at 12:65–13:3. In this context of Winkler's dynamic update of the displayed geographical movement, Winkler describes three scenarios. The first and second scenarios are not relevant to the instant case because Petitioner does not rely on these to account for the "graphical item" limitation of claim 9. The first scenario describes the feature of using the map element displayed on the map to initiate an instant messaging session between the user and the friend that added the map element to the map. *Id.* at 13:5–12. The second scenario describes the feature of pinning the location of a bar on the map and receiving alerts (via changes in appearance of the pin from red to green) when a friend arrives at the bar. *Id.* at 13:13–20.

Petitioner relies on the third scenario to explain how Winkler accounts for the "graphical item" limitation of claim 9. This third scenario describes a user tagging the location of a T-Mobile store on the map, where the map element now corresponds to the location of the T-Mobile store. *Id.* at 13:21–24. The user's display shows the map with the added map element. *Id.* "The user attempts to walk to the store." *Id.* at 13:24–25. As the user is walking to the store, the map element changes colors, indicating to the user that the user is heading in the correct direction. *Id.* at 13:25–27. As the user gets closer to the store, the display changes to an expanded view of the map,

to provide a more detailed view of the map "based on her location in relation to the store." *Id.* at 13:27–31.

We find this third scenario teaches that the Winkler map element is a tag icon on a map, i.e., a graphical item on the display of the map. And, we agree that this map element represents the location of the store that the user is walking towards. But the same map element changes colors to provide direction in real-time so that the user can understand whether he/she is heading in the right direction. Patent Owner urges us to view the map element as failing to identify a direction in which to travel. PO Resp. 42. This argument, however, ignores the implementation of the color-changes of that map element that *do* provide an indication of direction on the map. The claim language does not require the "direction" to be in any particular format or level of specificity. An indication that the user is walking in the appropriate direction, by showing a color that signifies so, is still an identification of a direction in which to travel. It is especially telling that the Winkler display zooms in the map as the user gets closer to the store, further pointing out that the user will see more details about the route there. Ex. 1005, 13:27–31.

We also are not persuaded by Patent Owner's argument that the change in color only indicates "past movement." PO Resp. 42. We do not view Winkler as providing only feedback of "past movement." As we already explained, Winkler describes the display changes as dynamic and reflecting the current location of the users. *See also* Bhattacharjee 2d Decl. ¶ 60 (stating that Winkler's system updates the direction as the user walks (i.e, changes her current location)). If anything, Winkler provides real-time

direction information as the user is walking. And to do so, it takes into account where the user has been and the travel direction in which he/she is headed. *Id.* Again, claim 9 does not require any particular format of the identified "direction" or whether the information must be provided with any relative timing to when the user is approaching the action spot. Accordingly, we are not persuaded by Patent Owner's first argument.

As to Patent Owner's second argument concerning the motivation to combine the teachings of Lemmela with those of Wrinkler, we are not persuaded that the Petition is vague, conclusory, or otherwise without sufficient explanation. Petitioner first sets forth that both Lemmela and Winkler disclose real-time map updates. Pet. 63 (citing Bhattacharjee Decl. ¶ 63[9d]). Petitioner also proffers evidence, in the form of testimony of Dr. Bhattacharjee, which we credit, that a person of ordinary skill in the art would have understood at the time of the invention "that a 'real-time map update' based on 'user movements along a route' would likely include a graphical display of the correct direction in which to travel." *Id.* This testimony is unrebutted and its premise is reasonable. That is, starting with Lemmela's disclosure that the mobile device is equipped with a map application that provides directions, it suggests to a person of ordinary skill in the art that there would be a graphical display (after all, it is showing the user a map, which is a graphical display) showing the correct travel direction. Petitioner further expands on how to account for Winkler's teaching of the color-changing map element: it would allow devices to display the locations of grouped posts, along with directions to those locations. *Id.* at 63–64 (citing Bhattacharjee Decl. ¶ 63[9d]). Petitioner

posits that Lemmela and Winkler's similarities and problems addressed would have presented a person of ordinary skill in the art with reason for their combination: modifying the Lemmela-Crowley system to provide users with directions to action spots, as taught by Winkler, would have improved the usefulness and convenience of the Lemmela-Crowley system. *Id.* at 64–65 (citing Bhattacharjee Decl. ¶ 63[9d]). We see no evidence to the contrary, and the evidence presented is neither vague nor conclusory.

Indeed, Petitioner points to Lemmela as informing the alleged "usefulness and convenience." For instance, Petitioner points out that Lemmela helps users "easily pinpoint locations which are the most interesting from their point of view," and that providing directions to an interesting location is one way of pinpointing it. *Id.* at 65 (citing Ex. 1005 ¶ 10); Bhattacharjee Decl. ¶ 63[9d] (testifying also that Lemmela at paragraph 9 states that its solution is helpful for aiding in directed exploration)). We agree that Lemmela further explains the usefulness of adding to the cloud and salient word display the ability for the user to receive directions to a particular point of interest.

We understand Patent Owner to argue that clouds are irregular and are different from a pin at a discrete location, such as the pin on the T-Mobile store's location on a map. PO Resp. 44. This argument does not take into account, however, that Lemmela's clouds are overlays on a map, and that map locations are discrete locations, such as a pizza restaurant or a cafe. *See* Reply 30 (citing Ex. 1005 ¶ 27, Figs 2A–2B). Thus, we see no reason to discredit the use of a pin-type element color change in combination with Lemmela's clouds to provide an indication of direction.

Finally we address a passing reference (i.e., a footnote) to the prosecution history as "inform[ing] why the claimed graphical item identifying an actual direction (e.g., an arrow, a compass, etc.) is distinct from merely changing the color of a location pin." PO Resp. 43 n.1 (citing Ex. 1007, 159). We are not persuaded that statements in the '084 patent prosecution history informs our determination here because the applicant's *arguments* addressed in addition to the "graphical item," the limitation of "displaying a level of activity associated with the at least one action spot." *See* IPR2019-00714, Exhibit 1001, 20:31–33 (reciting the limitation in claim 9 of the '084 patent). In addition, it seems that the applicant attempted to equate the "graphical item" to a compass, which the cited prior art does disclose (US 2010/0248746, Fig. 6, ¶ 57 (stating that the restaurant is 3 miles straight ahead and Figure 6 showing a graphical display with a compass pointing in the northward (straight ahead) direction and identifying 3 miles distance). Thus, we find that the arguments presented regarding the "graphical item" did not distinguish over the prior art, was an ineffective disavowal, if at all, and included arguments directed to other limitations recited in the claim. For these reasons, we give no weight in this proceeding to the alleged prosecution history statements of the '084 patent.

Consequently, we determine that Petitioner has demonstrated a reasonable likelihood of prevailing on its assertion that the combination of Lemmela and Winkler teaches the "graphical item" limitation of claim 9.

vii. Conclusion

Having addressed all the limitations of the independent claims in view of the parties' arguments and evidence, we conclude that Petitioner has shown by a preponderance of the evidence that (1) claim 1 is unpatentable over the combination of Lemmela and Crowley, and (2) claim 9 is unpatentable over the combination of Lemmela, Crowley, and Winkler.

4. Dependent Claims 2 and 10

Claim 2 depends from claim 1, and further recites "wherein the at least one action spot corresponds to a location where at least one other mobile device has engaged in a documenting action is within a predetermined period of time." Ex. 1001, 19:47–50. Claim 10 depends from claim 9, and recites the same limitation. *Id.* at 20:37–40.

Petitioner relies on Lemmela to teach these limitations because it discloses that users may "filter postings based on criteria such as time[.]" Pet. 57 (citing Ex. 105 ¶ 8); *see also id.* 65 (relying, for claim 10, on the Petition's discussion of claim 2). Figure 5 of Lemmela, reproduced below, and annotated by Petitioner, shows a time window (indicated by the red box):

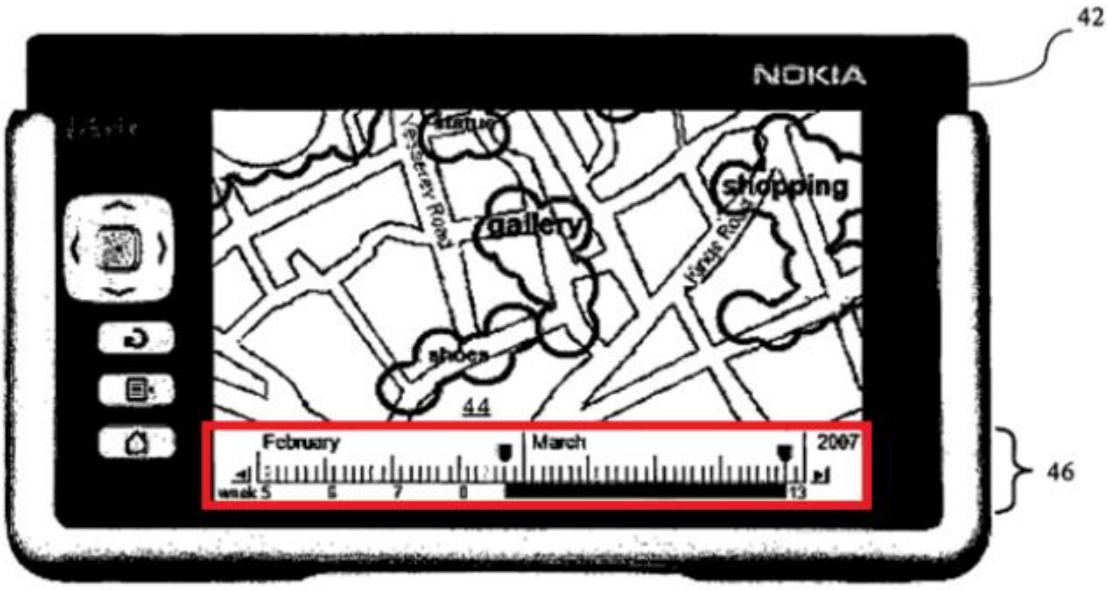


FIG. 5

Figure 5 illustrates a Nokia 770 internet table 42 displaying timeline 46. Ex. 1005 ¶ 39; *see also* Pet. 57.

According to Petitioner, and we agree, Lemmela teaches that the user adjusts the time window using timeline 46, which results in the displayed clusters, filtered according to the time period. Pet. 57 (citing Ex. 1005 ¶ 39). We also agree that this timeline defines the starting and ending time of the time period the user is interested in. *Id.* Therefore, we conclude that the display adjustments based on the timeline adjustment will reflect the postings that were sent during the selected time periods. *Id.* Patent Owner does not address separately these claims. *See generally* PO Resp.; Sur-reply.

Therefore, we determine that Petitioner has demonstrated by a preponderance of the evidence that (1) claim 2 would have been obvious

over Lemmela and Crowley, and (2) claim 10 would have been obvious over Lemmela, Crowley, and Winkler.

5. Dependent Claim 5

Claim 5 depends from claim 1, and further recites, "wherein the determining of the at least one action spot is based upon a defined distance from the mobile device." *Id.* at 19:58–60. Petitioner relies on the arguments and evidence presented for the "determine an action spot" limitation recited in claim 1, where the limitation requires the determination to account for a "predetermined distance from the current location of the first mobile device." Pet. 58. We addressed above, in Section III.C.3.iii, that Petitioner had shown by a preponderance of the evidence that the combination of Lemmela and Crowley teaches the "determine an action spot" limitation because it would have been obvious to modify Lemmela's server processing of location-based postings to include Crowley's distance use, for example, two blocks from the mobile device. This distance meets the claim 5 requirement of a "defined distance from the mobile device." Thus, the same analysis of claim 1 applies equally here. Patent Owner does not address separately the limitation of claim 5. *See generally* PO Resp.; Sur-reply. For the same reasons, therefore, we determine that Petitioner has shown by a preponderance of the evidence that claim 5 is unpatentable over Lemmela and Crowley.

6. Dependent Claim 6

Claim 6 depends from claim 1, and further recites, "wherein the indication comprises one or more graphical icons identifying a relative level

of documenting action occurring at the at least one action spot." Ex. 1001, 19:61–64. To teach this limitation, Petitioner relies on Lemmela's disclosure of the "heat map" and that certain areas would be colored based on the information being presented. Pet. 58–59 (citing Ex. 1005 ¶ 28). Lemmela discloses that the different colors displayed would be based on the density of location postings. Ex. 1005 ¶ 28. Petitioner further relies on the disclosure of the "shaped boundary" of a graphical icon, which may be used to indicate a relative level of documenting action within the group, because these boundaries may be displayed in a color that indicates "a quantitative measure of the postings in the group." Pet. 59 (citing Ex. 1005 ¶ 12, Fig. 1). In essence, Petitioner's arguments and evidence mirror the arguments and evidence presented for the "activity level" limitation recited in claim 1. We agree that the same evidence presented for the "activity level" limitation supports the finding that the indication of an "activity level" of claim 1 supports the limitation of claim 6. For example, for claim 1, we determined that Lemmela's change in color of the cloud boundaries or the cloud colors in the heat map would convey the "activity level" because it was based on the number of messages transmitted at the location of the cloud on the map. Claim 6 recites that the indication comprises at least one or more graphical icons. Lemmela's shaped boundaries that change color are a graphical icon for the "action spot" or Lemmela's cloud. And these shaped boundaries displayed with certain colors indicate the relative level of documenting activity, as the color corresponds to a quantitative measure of the postings at the cloud location.

Patent Owner relies on the same arguments raised concerning the "activity level" limitation of claim 1—that Lemmela's teachings refer to level of salient word commonality, not of a relative level of documenting actions—to rebut Petitioner's arguments and evidence for claim 6. PO Resp. 38–39. For the same reasons we stated already, this argument is not persuasive.

Patent Owner further challenges Petitioner's assertions on the basis that the documenting actions are historical in nature and, therefore, are not "occurring" at the action spot. *Id.* at 39. This argument reflects Patent Owner's claim construction position that the claims would exclude documenting actions that occurred in the past, say in previous days. As we explained in our claim construction analysis, Patent Owner's proposed construction is not persuasive because it seeks to limit the "action spot" activity to only "presently" occurring. *See supra* Section III.A1. Accordingly, the arguments presented by Patent Owner are not persuasive because they are based on a claim construction we did not adopt.

We determine that Petitioner has demonstrated by a preponderance of the evidence that claim 6 is unpatentable over Lemmela and Crowley.

7. Dependent Claim 12

Claim 12 depends from claim 9, and further recites "wherein the display of the graphical item on the display of the first mobile device further comprises sizing a graphical item associated with the at least one action spot in accordance with a range of activity occurring at the at least one action spot." Ex. 1001, 20:47–52. To teach this limitation, Petitioner relies on

Lemmela's disclosure of sizing a graphical item, such as the word icons superimposed on the clouds. Pet. 66 (citing Ex. 1005 ¶ 29). The size of the word icons indicates a range of activity; for instance, the word "shopping" looming large on the cloud shown in Figure 1 shows that this is a common term in many of the location postings for the area. *Id.* We agree that this sizing of the words superimposed on the cloud shows a range of activity—that many location postings include this common word. Patent Owner does not address separately this limitation. *See generally* PO Resp.; Sur-reply.

Based on the evidence presented, we determine that Petitioner has demonstrated by a preponderance of the evidence that claim 12 is unpatentable over Lemmela, Crowley, and Winkler.

8. Dependent Claim 13

Claim 13 depends from claim 9, and further recites, "wherein the level of activity is based upon at least one of a number of images being captured, a number of videos being captured, or a number of messages being transmitted from the at least one action spot for a given period of time." Ex. 1001, 20:53–58. We have addressed the "activity level" limitation in connection with claim 9 above. Claim 13 merely adds the timing requirement for the transmitted messages. Petitioner points to Lemmela's disclosure of the timeline in the Nokia device, discussed earlier with respect to dependent claims 2 and 10. Pet. 67–68. Petitioner argues that Lemmela's timeline allows a user to adjust the time window during which he or she chooses to view location postings. *Id.* at 68 (citing Ex. 1005 ¶ 39). We agree, as we did before, that this timeline allows a user to set a time period

for the displayed activity via the clouds. As Lemmela states, "if the posting is sent during [a selected] time period, it is taken [into] account in the display." Ex. 1005 ¶ 39. This disclosure leads us to conclude, as Petitioner contends, that Lemmela uses the timeline set by the user to adjust the display of clouds to reflect only the location-based postings transmitted during the set time period with the displayed common words and cloud colors (read here "activity level"). As Petitioner surmises, and we agree, if a posting pertaining to the cloud area is not transmitted within the set time period, the display would not account for it. Pet. 68. Thus, we agree with Petitioner that Lemmela teaches the timing requirement for the transmitted messages required by claim 13. Patent Owner does not address separately this claim, but arguments that could have been directed to the recited subject matter have been addressed above in connection with the discussion of the "activity level" limitation of claim 9.

Based on the evidence presented, we determine that Petitioner has demonstrated by a preponderance of the evidence that claim 13 is unpatentable over Lemmela, Crowley, and Winkler.

9. Dependent Claim 15

Claim 15 depends from claim 9, and further recites "wherein the displayed directions further include[ ] a map displayed on a graphical interface on a display of the first mobile device." Ex. 1001, 20:64–67. Petitioner relies on the same arguments and evidence presented for claim 9 in connection with the "graphical item" limitation to account for the limitation of claim 15. Pet. 69. In short, Petitioner argues that Winkler

teaches providing directions to an action spot on a map displayed on a mobile device's map application. *Id.* We agree. As we stated already, Winkler teaches that the indication of a direction in which to travel will be displayed to a user in the form of a map element that changes color. Winkler's map element is displayed on a map, and as the user gets closer, the map view will be expanded to show further detail of the user's location in relation to the store. Ex. 1004, 13:21–31. Patent Owner does not address separately this claim, but arguments that could have been directed to the recited subject matter have been addressed above in connection with the discussion of the "graphical item" limitation of claim 9.

Based on the evidence presented, we determine that Petitioner has demonstrated by a preponderance of the evidence that claim 15 is unpatentable over Lemmela, Crowley, and Winkler.

D. OBVIOUSNESS OVER WINKLER AND ALTMAN

The Petition sets forth that Winkler teaches all the limitations of independent claims 1 and 9, except that for limitations reciting "within a predetermined distance," where Petitioner relies on Altman. Pet. 16–30, 34–41. For dependent claims 2, 6, 10, 12, 13, and 15, Petitioner relies exclusively on Winkler as teaching the further recited limitations. *Id.* at 31–33, 42–46. For dependent claim 5, Petitioner relies on Altman for teaching a "defined distance." *Id.* at 32.

In our Decision on Institution, we determined that Petitioner had not demonstrated a reasonable likelihood of prevailing in showing that independent claims 1 and 9 would have been obvious over Winkler and

Altman. Dec. on Inst. 32–35. In particular, we found wanting Petitioner's assertions concerning Winkler's disclosure of the "determine an action spot" limitation. *Id.* More specifically, we found that Winkler tracks comments *about* locations displayed as map elements, but does not track *the location* of the comments—whereas the claim language requires that the "action spot" is the location where a mobile device has engaged in a documenting action. *Id.* at 35. Petitioner addressed the Winkler ground in the Reply. Reply 9–21. Patent Owner responds that the Winkler grounds continue to be deficient over Petitioner' s explanations in the Reply, which allegedly raise new arguments and evidence that should have been included in the Petition. Sur-Reply 17–24. We address these issues below in connection with our determination that Petitioner has not shown by a preponderance of the evidence that Winkler teaches the "determine an action spot" limitation and that certain arguments presented in the Reply are outside the scope of a proper Reply as they shift the theory of obviousness in contravention of due process and our rules of procedure.

1. Overview of Winkler (Ex. 1004)

Winkler is entitled "Dynamic Elements on a Map Within a Mobile Device, Such As Elements That Facilitate Communication Between Users." Ex. 1004, code (54). Winkler is directed to a system for generating and displaying graphical elements on a mobile device map so that a mobile device user may identify concentrations of other mobile device users at one or more locations. *Id.* at 1:66–2:5, 2:47–49. Winkler describes a system that includes a server which displays or presents information to mobile device

users, including mapping components that generate a map and map elements. *Id.* at 4:43–51. The system may generate a map element based on an input identifying a location of a user's mobile device. *Id.* at 10:10–19. The system may display map elements based on events that occur proximate to a user's mobile device or at a location associated with the map element. *Id.* at 2:16–19. The system may modify the appearance of a map element when a certain number of mobile device users comments on a location or event. *Id.* at 2:20–24, 10:40–44.

Figure 5, reproduced below, shows a flow diagram illustrating routine 500 for updating a map element within a mobile device. Ex. 1004, 10:7–9.

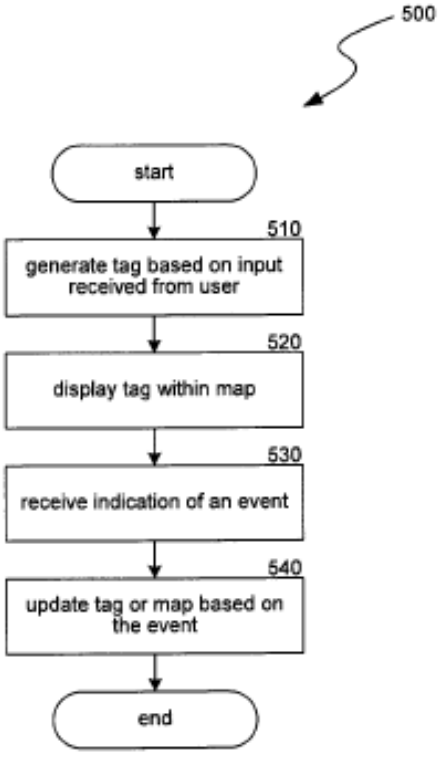


FIG. 5

FIG. 5 is a flow diagram illustrating a routine for updating a map element within a mobile device. Ex. 1004, 1:52–53.

Figure 5 shows a system generating a map element based on input received from a user in step 510. *Id.* at 10:10–11. The system displays the map element on a map in step 520. *Id.* at 10:32–33. The system receives an indication of an event at the location of the map element, for example detecting comments added to the map element in step 530. *Id.* at 10:40–45. The system transmits instructions to the mobile device to modify the element alerting the user that an event has occurred at step 540. *Id.* at 10:54–64.

The map element may be a certain color, size, or design. *Id.* at 11:5. The system may modify the map element to indicate the occurrence of an event, such as a friend adding a comment to the map element. *Id.* at 11:6–10. Additional event occurrences may include an amount of activity in a certain region above a threshold value or an amount of activity within a period of certain time. *Id.* at 11:35–46. The system may dynamically adjust or modify the map element by changing the color or brightness of the map element or changing the map element to a different element. *Id.* at 11:15–26.

Figure 7A, reproduced below, shows a map with various types of map elements. *Id.* at 12:2–12:11.

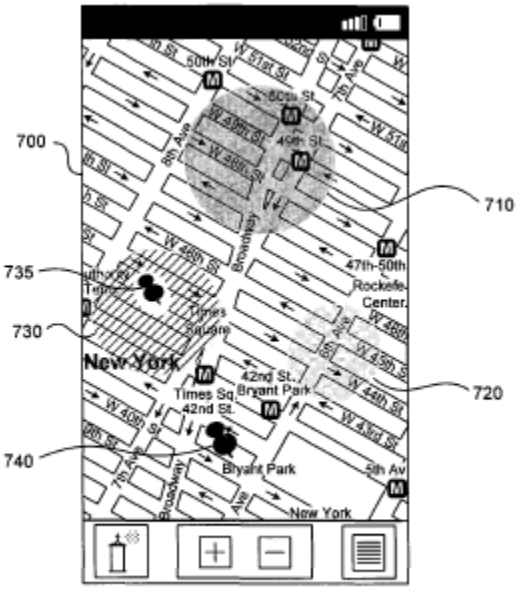


FIG. 7A

Figure 7A illustrates an example mobile device screen used to dynamically display information about elements on a map. Ex. 1004, 1:57–59.

Figure 7A shows map 700 displayed on a mobile device with two highlighted zones, 710, 720, tagged location 735, and hot zone 730. *Id.* at 12:4–5, 12:32–38. Highlighted zones 710, 720 may show increasing or decreasing concentrations of elements on the map or concentrations of comments by users at a location. *Id.* at 12:5–10. Hot zone 730 around tagged location 735 "may indicate a certain amount or frequency of activity around or related to the location," including comments from other mobile users. *Id.* at 12:36–40. The display of hot zones or map elements may dynamically change based on events or time. *Id.* at 12:44–54.

In a specific example, Winkler describes a map application that displays a map element corresponding to a store's location. *Id.* at 13:22–24. "As the user approaches the store, the system causes the map element to

change colors, indicating to the user that the user is heading in the correct direction." *Id.* at 13:21–27. The system may also expand the view of the map as the user reaches a certain distance in relation to the store. *Id.* at 13:27–31.

2. Independent Claims 1 and 9

After reviewing the fully developed record, we determine that Petitioner has not demonstrated by a preponderance of the evidence that claims 1 and 9 are unpatentable over Winkler and Altman.

i. "determine an action spot" limitation

The Petition relies solely on Winkler as teaching this limitation. Petitioner states that Winkler's network servers include "mapping components" that "generate map and map elements." Pet. 17 (citing Ex. 1004, 4:45–48, 5:61–64). Those map elements, the Petition argues, teach the recited "action spots." *Id.* (discussing the "determine an action spot" limitation and citing Bhattacharjee Decl. ¶ 48[1c]). Those map elements, according to Petitioner, further "correspond to locations where 'events' have occurred." *Id.* at 18 (citing Ex. 1004 2:16–18, 10:40–42). Petitioner block quotes Winkler's disclosure of the "events" emphasizing one of these in italics as follows:

> movement of another mobile device near to, or proximate to a tagged location, such as movement to within a pre-selected range of a map element,
>
> movement of a user's mobile device near, to, or proximate to the user's tagged location,

> *a certain frequency or amount of activity in a certain region, such as above a threshold value,*
>
> a certain frequency or amount of activity within a certain time period,
>
> a certain frequency or amount of activity around a certain tagged item on a map,
>
> a certain frequency or amount of activity after a time period has lapsed,
>
> movement of a threshold number of mobile devices near, to, or proximate to the user's tagged location, and/or
>
> when the time of placement of a map element exceeds a threshold time, and so on.

Id. (citing Ex. 1004, 11:36-54 (emphasis in original)). Petitioner, relying on Dr. Bhattacharjee's testimony, then states that this quoted passage shows that an "event" can correspond to device activity. *Id.* (citing Bhattacharjee Decl. ¶ 48[1c]). That activity, according to Petitioner, corresponds to "activity at another user's mobile device." *Id.* (citing Ex. 1004, 11:43–49, 59–61). Lastly, before concluding that Winkler teaches the "determine an action spot limitation," Petitioner states that Winkler's activity can correspond to mobile devices transmitting messages, such as by commenting on a location or sending emails or texts. *Id.* at 18–19 (citing Ex. 1004, 2:20–22, 8:7–18).

The problem with Petitioner's explanations is that they do not characterize Winkler's disclosure accurately and, when read in the proper context of Winkler's disclosure, they do not show that the transmission of messages occurs at the location that is the "action spot." The claim requires that the "action spot" correspond to the location where the second mobile

device has engaged in at least one documenting action, such as transmitting messages. None of Petitioner's citations to Winkler or the Petition's explanations show that Winkler's map elements and the message transmissions occur at the same location.

We start this analysis by explaining the portions of Winkler on which the Petition relies. First, Petitioner alludes to Winkler's servers generating the map elements to be presented to the users via the mobile device. This is disclosed by Winkler. Ex. 1004, 4:45–48, 5:61–64 (discussing the content server that provides instructions to the mobile device to display the map elements). Second, Petitioner alludes to Winkler's events occurring at the map element. Winkler states that the system "updates, modifies, alters and/or changes displayed elements based on events that occur at or proximate to a user's mobile device, [the] other's mobile devices, or at a location associated with the element." *Id.* at 2:16–19.[6] In this passage, we understand Winkler to refer to events related to three specific locations that cause the map elements to change their appearance: (1) the location of the user's mobile device; (2) the locations of other user's mobile devices; and (3) a location associated with the element. Recall in our discussion of Winkler earlier that Winkler dynamically updates the map elements to account for the location of the mobile devices. *See id.* 12:44–54. Thus, we pause here to ascertain that map elements corresponding to locations (1) and (2) are dynamic locations, because they change as the users move. Location

[6] Although Petitioner cited only up to line 18 of column 2, we provide the entire sentence here for a more complete analysis.

(3) refers to a tag that the *user* places on the map on a specific location, say, a coffee shop. *Id.* at 6:18–22. Petitioner did not provide this level of explanation in the Petition, but we provide the explanation here for context.

Now we turn to what happens during Winkler's events. Winkler states that the system receives an indication of an event at the mobile device or at the location of the map element. *Id.* at 10:40–42. In particular, Winkler describes four instances of events: (1) detecting other users proximate to the location of the map element; (2) detecting additional comments added to the map element; (3) detecting the user moving closer to the map element; and (4) detecting the temporal position of a map element relative to other map elements. *Id.* at 10:41–47. Thus, for a map element that is a tag on a specific location—coffee shop, for instance—Winkler would detect the user's or the user's friends' proximity to the coffee shop, or would detect additional comments added to the tag of the coffee shop. The fourth event identified above would be triggered if movement of a friend that has been tagged on the map is detected at the coffee shop. Because the Petition indicates that the "activity" in Winkler corresponds to mobile devices transmitting messages, such as by commenting on a location or sending emails or texts, we view one of the above-listed events as the most relevant to our discussion—the detection of additional comments added to the map element.

Regarding this "activity," Petitioner added emphasis to one event in particular: *a certain frequency or amount of activity in a certain region, such as above a threshold value*. Pet. 17 (quoting Ex. 1004, 11:43–44). And two other parts of the list of events were cited as evidence that the

"activity" occurs at another user's mobile device: (1) a certain frequency or amount of activity within a certain time period; and (2) a certain frequency or amount of activity around a certain tagged item on a map. *Id.* (citing Ex. 1004, 11:43–49). Petitioner also cites to the following portion of Winkler as supporting this notion of "activity" at another user's mobile: "The system may also alert a user who created the hidden map element of any activity at another user's mobile device." *Id.* (citing Ex. 1004, 11:59–61). We understand from these portions that Winkler will trigger a change of the map element when a threshold amount of comments are added to a certain tag location. However, the reference to another user's mobile "activity" in Winkler is with respect to the *movement* of the user relative to a tagged location ("map element"). For instance, Winkler describes that in the case of "hidden" map elements, the display will reveal the map element to the user approaching the tagged location (or "map element"), and will notify the friend of the user who tagged the location in the first place. *Id.* at 11:55–65. These "hidden" map element passages do not address any action of transmissions by other mobile devices at the tagged locations ("map elements").

For the "transmitting messages" part of the claim, we understand the Petition to rely on portions of Winkler to improperly *assume* mobile devices comment on a tagged location while on location. For instance, in the passage Petitioner relies on, Winkler describes that the map element changes in appearance when a certain number of comments about a location are received from mobile device users, thereby indicating the location is popular. *See* Pet. 17 (citing Ex. 1004, 2:20–22). In the second passage

Petitioner relies on, Winkler describes the messaging mode of the system. *Id*. (citing Ex. 1004, 8:7–18). But before describing in more detail that passage, it is worth providing additional context. Winkler allows users to communicate with each other by using the map elements. Specifically, Winkler's user taps on the map element that corresponds to the tagged coffee shop location visited by a friend to display the comments about the coffee shop and further communication options. Ex. 1004, 7:35–49. Winkler retrieves information from a table that stores messages or comments by particular users. *Id.* 7:49–54. That table shows that a friend added a comment *to the pindrop* located at specific location stating "Cool place." *Id.* Table 1. The user, seeing the friend's comment, can reply to the posted commentary. *Id*. 7:62–63. Once again, these passages are not explained in this level of detail in the Petition, but we include the explanation here for context, as it explains why Petitioner has taken the cited passages out of context.

The passage that Petitioner does rely on shows that Winkler updates the posted commentary with the reply. *Id*. 8:7–18. Specifically, the added reply is updated in the table previously retrieved, which shows that a different user added another comment *to the same pindrop*, 15 minutes later stating "There soon." *Id*. Table 2. That is, the users are entering comments about the coffee shop by tapping the pindrop of the coffee shop location displayed on the map, without any need to be present or currently located at the coffee shop to do so. Indeed, the replier is not there, as the message states "There soon." There is no evidence proffered by Petitioner in any of

these passages that the other mobile user's "activity" that Winkler detects as events requires that the comments are entered while present at the location on which the user is commenting. The location that Winkler tracks for the comments is that of the pindrop. There is no disclosure that, in addition to tracking the comments for each pindrop, Winkler also collates the transmitted messages based on the location at which they were transmitted. Although Winkler tracks the locations of the users, it does not track the location of the users at the time they enter the comments. In conclusion, and as we stated in our Decision on Institution, Winkler tracks comments *about* a location, but does not track comments made while *at* the location.

In Reply, Petitioner argues that the identified "events" occurring "in a certain region" or "around a certain tagged item on a map" together would have been understood by a person of ordinary skill in the art as the "event" because it "can include documenting activity occurring at the element's location." Reply 10–11 (citing Bhattacharjee 2d Decl. ¶ 73). Petitioner then goes on to expand on three scenarios for Winkler's Figure 5 that would teach a map element as an action spot—curing the deficiencies noted above. *Id.* at 12–21. Petitioner footnotes this expansion as arguments in the Reply that build on the Petition's initial analysis within a ground. Reply 12–13 n.4 (citing *Intellectual Ventures II LLC v. Ericsson Inc.*, 685 F. Appx. 913, 919–22 (Fed. Cir. 2017). We are not persuaded that these belated arguments presented by Petitioner in its Reply are proper.

There is a difference between expanding on allegations made in the Petition, and changing the thrust of an initial obviousness position. What Petitioner has done here falls under the latter category. The Petition lacks

any allegation that a newly-disclosed *combination of events* (a new obviousness theory) would result in the claimed "action spot." *See* Sur-Reply 18–21 (Patent Owner arguing that Petitioner now presents a number of combinations of unique pairings of conditions that are a shift in the position presented in the Petition). Furthermore, Petitioner's new positions presented for the first time in its Reply reflect substantive deficiencies that do not remedy the fact that Winkler does not track the location of users at the time they transmit a comment.

For instance, Petitioner's Scenario 1 concocts a hypothetical of two users, with mobile devices X and Y, being within a preselected distance from each other (one event) and, coincidentally, user with mobile device Y (as a "hidden" element) engages in "documenting activity" (purportedly another event). *See* Reply 14–17. Even if we assumed that Winkler discloses that a user could be a "hidden" element, which it does not,[7] the documenting activity Petitioner relies on fails to meet the "determine an action spot" limitation.[8] Petitioner has identified the transmission of messages or comments as the documenting activity. Pet. 18 ("'Activity' can correspond to mobile devices transmitting messages, such as by commenting on a location, or sending emails or texts"). Comments are entered by users *about* the location, and the comment is entered into the tag. *See* Ex. 1004,

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[7] Ex. 1004, 11:56–58 (stating that a "location is associated with a hidden map element"). Winkler does not use "location" to refer to "users."
[8] The Petition relied on the "hidden" element to state generally that Winkler discloses "activity at another user's mobile device." Pet. 18 (quoting Ex. 1004, 11:60–61). No further explanation or mapping was provided.

1:10–12, 2:19–23, 6:26–29, 8:7–9, 12:38–41. Petitioner's Scenario 1 is vague in identifying what is the documenting activity in which Y has engaged. Indeed, Petitioner's Scenario 1 only states that device Y is "engaging in documenting activity at this location" (i.e., at the alleged "action spot" location). Reply 17. With such a vague assertion, there is insufficient evidence to ascertain whether the location of Y would indeed be an "action spot" per the theory advanced in the Petition.

Nevertheless, the claim language requires that the documenting action and the location of the action spot are the same location. Recall, however, that Winkler does not track comments, messages, or texts by the location at which those are transmitted by a user. Petitioner did not identify what would Y comment on, or to whom would Y communicate. The omission is significant. If we assumed that Y is sending a *comment* to X at the "action spot" location (which again, Winkler only describes commenting on "locations" not users), as explained earlier, device Y uses the communication mode accessed by tapping on the map element of device X (by tapping on the screen the tag that belongs to the person he or she wants to communicate with). Ex. 1004, 7:49–8:27. As for emails or texts or other messages sent directly to X, Winkler accesses the device's client applications (email, instant messaging, etc.)—with no disclosure whatsoever that Winkler captures the location at which those messages are transmitted. *See id.* 8:39–45.

So, even assuming that device Y is engaging in a documenting action that Winkler detects as an event, i.e., a comment on a map element, such a communication is entered in the table for the location of device X, not at the

location where Y, the mobile device that transmits the comment, is located. That is, in the best case scenario, and with a hindsight viewpoint, X and Y must share the same location while Y is transmitting the message to X, which defies logic—why would Winkler teach that a user would add a comment on another user's map element when both are standing at the same location?

Scenario 2 fares no better. In this scenario, Petitioner leverages again the "hidden" map element embodiment, which again, was not explained in the Petition for the proposition now alleged—that the "hidden" map element may identify a "user" and become an action spot simply because another user may *approach and document* from that location. Again, the Petition identifies the commenting or messaging as the "activity," but now Petitioner relies on the approach of a user in proximity to a "hidden" map element. In other words, Petitioner has shifted which activity constitutes the "activity" performed by *other mobile users*. The Reply now relies on a hypothetical other mobile user performing two "activities" concurrently, approaching the tagged location, although hidden at this point, and documenting from that location. This Scenario 2 also requires two devices on the same spot, one is hidden while the other "engages in documenting activity there." Reply 17 (asserting the documenting action generally, with no detail or explanation as to whom is the device transmitting messages or what location the user is commenting on). Because the location X is hidden, there is no visible map element for Y to enter a comment into that location. And if the map element for X is not visible, there is no way for Y to communicate with it. Therefore, Scenario 2 is not only impermissible new mappings of Winkler to

the elements of the claim, but it is an unworkable example untethered from the reality of how Winkler operates.

Scenario 3 is flawed for the same reasons identified above in connection with Scenario 2. Scenario 3 also presupposes the hindsight requirements of approaching a map element within a predetermined distance and adding an undisclosed documenting action at the same location of the map element. Reply 19–21. We do not belabor the same explanations of shifting theories and vague allegations concerning the alleged documenting activity that might result in an "action spot." Petitioner's assertions in the Reply with regard to Winkler depart significantly from the theory of obviousness and mapping disclosed in the Petition. As our reviewing court has stated, "[o]nce the Board identifies new issues presented for the first time in reply, neither this court nor the Board must parse the reply brief to determine which, if any, parts of that brief are responsive and which are improper." *Acceleration Bay, LLC v. Activision Blizzard, Inc.*, 908 F.3d 765, 775 (Fed. Cir. 2018) (citing the Office Patent Trial Practice Guide, 77 Fed. Reg. 48,756, 48,767 (Aug. 14, 2012))

We, therefore, determine that Petitioner has not shown by a preponderance of the evidence that Winkler teaches or suggests the "determine an action spot" limitation of claims 1 and 9. We do not address other deficiencies present in Petitioner's Reply arguments concerning the Winkler ground. But we do repeat that, in addition to the noted deficiencies, the scenarios presented in the Reply for the "determine an action spot" limitation are all outside the scope of a proper challenge to Patent Owner's Response. *See Ariosa Diagnostics v. Verinata Health, Inc.*, 805 F.3d 1359,

1367–68 (Fed. Cir. 2015) (finding reasonable the Board's judgment about when a Reply contention crosses the line from the responsive to the new).

The theories presented in the three scenarios identified above combine "events" never before disclosed in the Petition as meeting the claim elements and the corresponding explanations are vague, thereby making it difficult to ascertain their merits. We view Petitioner's new explanations in its Reply as indicative of hindsight, where Petitioner has selected a combination of modes of operation in Winkler and has taken liberties with describing these modes that can only be guided by the claim limitations themselves.

For at least the reasons summarized above, we determine that Petitioner has not shown by a preponderance of the evidence that independent claims 1 and 9 are unpatentable over Winkler and Altman. We further determine, that by virtue of their dependency, Petitioner has not shown by a preponderance of the evidence that claims 2, 5, 6, 10, 12, 13, and 15 are unpatentable over Winkler and Altman.

IV. CONCLUSION

In summary:

Claims	35 U.S.C. §	References	Claims Shown Unpatentable.[9]	Claims Not Shown Unpatentable
1, 2, 5, 6, 9, 10, 12, 13, 15	103(a)	Winkler, Altman		1, 2, 5, 6, 9, 10, 12, 13, 15
1, 2, 5, 6	103(a)	Lemmela, Crowley	1, 2, 5, 6	
9, 10, 12, 13, 15	103(a)	Lemmela, Crowley, Winkler	9, 10, 12, 13, 15	

V. ORDER

Accordingly, it is hereby:

ORDERED that claims 1, 2, 5, 6, 9, 10, 12, 13, and 15 of the '084 patent have been proven to be unpatentable;

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

[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) (2019).

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