

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SNAP INC.,
Petitioner,

v.

BLACKBERRY LIMITED,
Patent Owner.

IPR2019-00715
Patent 8,326,327 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
Granting Patent Owner's Motion to Amend
35 U.S.C. § 318(a)

I. INTRODUCTION

We instituted *inter partes* review pursuant to 35 U.S.C. § 314 as to claims 1–3, 8–11, 13–15, and 20 of U.S. Patent No. 8,326,327 B2 (Ex. 1001, “the ’327 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 1–3, 8–11, 13–15, and 20 (the challenged claims) of the ’327 patent are unpatentable. We also *grant* Patent Owner’s Motion to Amend.

II. BACKGROUND

A. RELATED MATTERS

The parties identify *BlackBerry Limited v. Snap Inc.*, No. 2:18-cv-02693 (C.D. Cal.), as a related matter. *See* Pet. 1; Patent Owner Mandatory Notices (Paper 5) 2. Petitioner has also filed a petition in IPR2019-00714 requesting *inter partes* review of U.S. Patent No. 8,825,084 B2, which was filed as a continuation of the ’327 patent.

B. THE ’327 PATENT

The ’327 patent relates to a system and method for determining an action spot based on the location of a mobile device. *See* Ex. 1001, 1:8–10. Specifically, the ’327 patent discloses determining an “action spot” by identifying a location where mobile devices have engaged in “documenting action.” *See id.* at 3:21–35. The action spot is located within a

“predetermined distance” from the location of the user’s mobile device. See *id.* at 3:64–66.

Figure 3, reproduced below, illustrates a screenshot of an interactive map, which includes display screen 102, graphical user interface 206, current location 302, action spots 304 and 306, and graphical representations 308 of location landmarks. See Ex. 1001, 5:47–58.

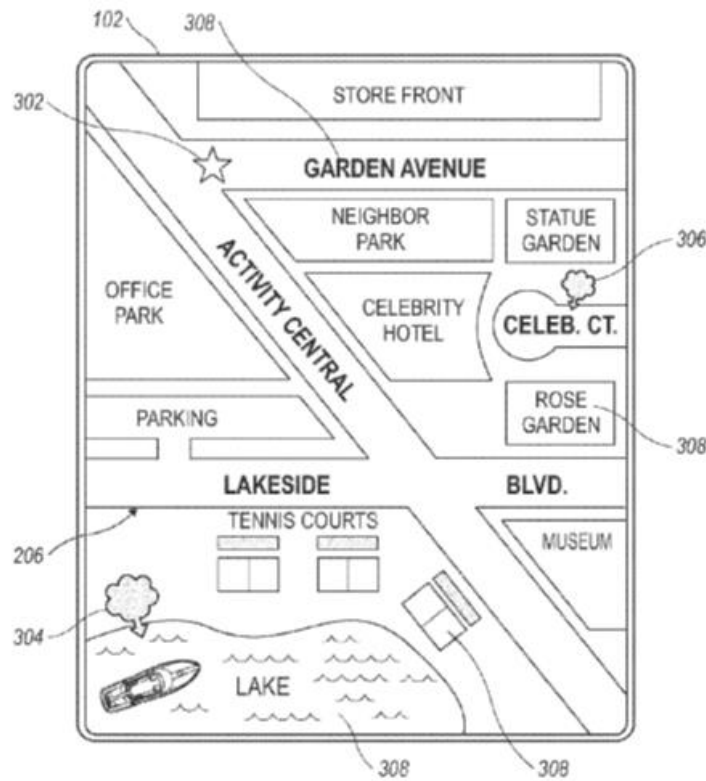


FIG. 3

“FIG. 3 is an illustrative implementation of a graphical user interface displaying an action spot within a predetermined distance from a current location of a mobile device.” Ex. 1001, 1:46–48.

The action spots can have different sizes to indicate the associated activity level; for example, a larger size may represent more activity. See Ex. 1001, 6:23–39.

Figure 7 of the '327 patent, reproduced below, shows “compass” 702 identifying the direction in which to travel to arrive at an action spot. See *id.* at 12:1–16.

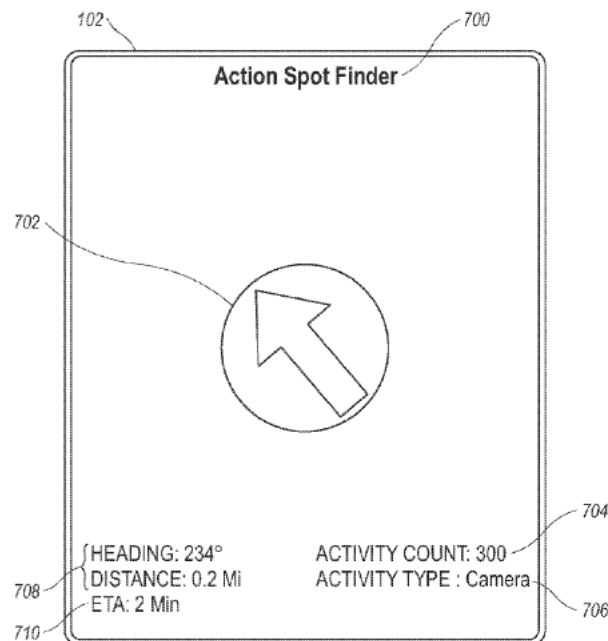


FIG. 7 illustrates “a graphical user interface of a mobile device having a compass showing at least the distance and direction to an action spot.” Ex. 1001, 1:61–64.

C. ILLUSTRATIVE CLAIMS

Of the challenged claims, claims 1, 10, and 13 are independent. Each of challenged claims 2, 3, 8, 9, 11, 14, 15, and 20 depends directly or indirectly from at least one of claims 1, 10, or 13.

Claims 1, 10 and 13 are reproduced below.

1. A mobile device comprising:
 - a display; and
 - a processor module communicatively coupled to the display and configured to receive executable instructions to:
 - display a graphical user interface on the display;
 - receive data indicative of a current location of the mobile device;
 - determine at least one action spot within a predetermined distance from the current location of the mobile device, the at least one action spot corresponding to a location where at least one other mobile device has engaged in documenting action within a predetermined period of time;
 - signify the at least one action spot on the graphical user interface; and
 - provide an indication of activity level at the at least one action spot.
10. A method for providing action spots on a mobile device comprising:
 - determining, via a processor, a current location of the mobile device;
 - determining at least one action spot within a predetermined distance from the current location of the mobile device, the at least one action spot corresponding to a location where at least one other mobile device has engaged in documenting action within a predetermined period of time;
 - displaying a graphical item on the display of the 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.
13. A method for providing action spots on a mobile device comprising:
 - determining, via a processor, a current location of the mobile device;

determining at least one action spot within a predetermined distance from the current location of the mobile device, the at least one action spot corresponding to a location where at least one other mobile device has engaged in documenting action within a predetermined period of time;

signifying the at least one action spot with a graphical item on a display of the mobile device;

marking the graphical item according to an activity level with at least one action spot.

Ex. 1001, 19:18–35, 20:2–15, 20:24–37.

D. PROCEDURAL HISTORY

Petitioner filed the Petition on February 22, 2019. Paper 1 (“Pet.”). Patent Owner filed a Preliminary Response on June 14, 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 in the Petition. Dec. on Inst. 25. 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 terms “predetermined distance” and “display the image with the at least one action spot.” Dec. on Inst. 7–11.

During trial, Patent Owner filed a Patent Owner Response (Paper 14 (“PO Resp.”)) and Petitioner filed a Reply (Paper 22 (“Reply”)). Patent Owner also filed a Sur-Reply. Paper 27 (“Sur-Reply”).

During trial, Patent Owner also filed a Non-Contingent Motion to Amend seeking replacement of original claim 2 with substitute claim 21. Paper 13 (“Motion” or “MTA”). Petitioner filed its Opposition to the

Motion to Amend. Paper 24 (“MTA Opp.”). We issued Preliminary Guidance at Patent Owner’s Request. See MTA, 1; Paper 26, (“PG”). Thereafter, Petitioner filed a Reply (Paper 30 (“MTA Reply”)) and Patent Owner filed a Sur-Reply (Paper 32 (“MTA Sur-Reply”)).

We heard oral argument on June 9, 2020, by video only, a transcript of which is filed in the record. Paper 36 (“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 Application Publication No. 2007/0281716 A1, published Dec. 6, 2007, filed as Exhibit 1006;
- c) *Lemmela*: U.S. Patent Application Publication No. 2008/0250337 A1, published Oct. 9, 2008, filed as Exhibit 1005;
- d) *Crowley*: U.S. Patent No. 7,593,740 B2, issued Sept. 22, 2009, filed as Exhibit 1008; and
- e) *Waldman*: U.S. Patent Application Publication No. 2011/0199479 A1, published Aug. 18, 2011, filed as Exhibit 1011.

In addition, Petitioner supports its contentions in the Petition with the Declaration of Dr. Samrat Bhattacharjee. Ex. 1002 (“Bhattacharjee Decl.”). Petitioner also proffered a Rebuttal Declaration of Dr. Samrat Bhattacharjee. Ex. 1020 (“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
1–3, 8, 10, 11, 13–15	103(a)	Winkler, Altman
1–3, 8, 13–15	103(a)	Lemmela, Crowley
10, 11	103(a)	Lemmela, Crowley, Winkler
9, 20	103(a)	Lemmela, Crowley, Waldman

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

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 ’327 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 Final Written Decision.

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 would have been 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 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. 8–9. 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 8 (citing Ex. 1001, 2:63–65; McDaniel Decl. ¶ 53). 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.* 8–9. We also noted that the claim language did not support Patent Owner’s position. *Id.* 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, 19:27–30 (emphasis added). Thus, we deemed it improper to limit the term “action spot” to locations where activity (which is a documenting action, *id.* at 2:55–63) “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. 15–16. 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.* 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 16–21. 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, 19:28–31, 20:8–11, 20:30–33. 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. 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.” Tr. 31:1–15 (arguing that “inputs of course can be from the past,” “[b]ut the output is an assessment, based on those inputs, whether activity is presently occurring at the action spot.”). There may be “input data related to documenting action” that occurred in the past, but the claimed determination of an “action spot” is based on the input data. PO Resp. 19. 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, 4:35–44; McDaniel 2d Decl. ¶¶ 39, 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. 23–26 (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 other mobile device has engaged in documenting action within a predetermined time period.” Ex. 1001, 19:28–31. 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, 2:63–65, 19:28–31. 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

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, 3:64–4:23. 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 3:64–66 (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

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, 34. All references to the page numbers in the prosecution history of the ’327 patent refer to the page numbers inserted by Petitioner in the bottom, right-hand corner of each page in Exhibit 1007.

of the mobile device.” *Id.* at 3:66–4:4 (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” (see *id.* 4:4–10)), the description of the activity is not limited to currently occurring activity, because that is presented as only “an example.”

The fourth implementation is also instructive as it states that “the at least 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 4:19–23. 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 locations at which the second mobile device has engaged in documenting actions, which the Specification describes as text messaging, emailing, blogging, posting a message on a social networking Internet site, or any

other documenting action. *See id.* at 2:55–58. 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 ’327 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, 2:63–65, 4:35–44, 9:23–39; McDaniel 2d Decl. ¶ 41). This argument, however, characterizes the ’327 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 ’327 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.

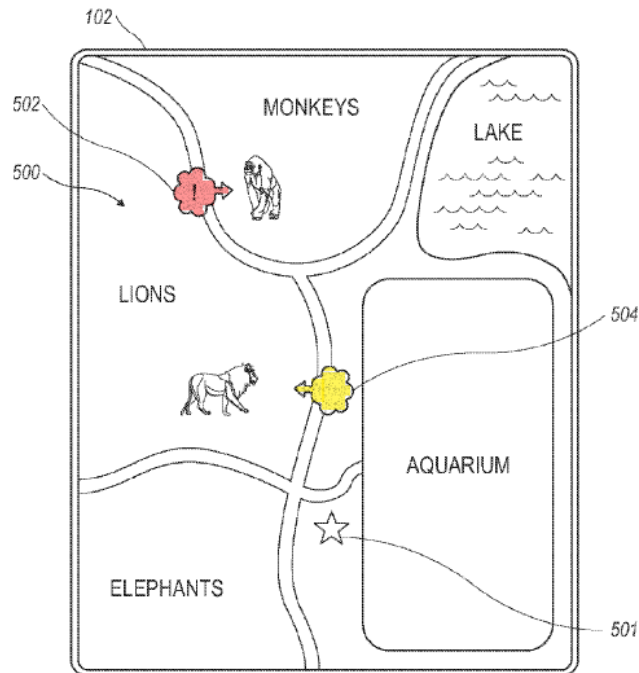


FIG. 5

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, 1:54–56.

According to the Specification, Figure 5 depicts two *determined* action spots 502, 504. Ex. 1001, 10:59–61. 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 10:67–11:4. The Specification also describes that, although both are displayed action 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 11:8–11 (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 11:11–14 (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 ’327 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 additional claim language does not support Patent Owner’s contention. Claim 1, for instance, recites that “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, 19:29–31. This claim language 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 8:35–39. 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.

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. 8–9. We also conclude that the language of 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

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.

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. 17; 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. PO Resp. 9. We do not see the parties’ agreed-to definition as the same as a district court claim construction analysis and interpretation. See Ex. 1026, 3 (identifying the “action spot” as an agreed-to-definition). Furthermore, Petitioner argues that the district court analyzed the claim language in the summary judgment order pertaining to the ’327 patent claims, noting that the plain meaning of the claim language does not require any automatic, periodic, or timely updates of action spot information. See Reply 3–5 (citing Ex. 2005, 40–43). 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. 2005, 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. 9–10. 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. 22. 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 determination of ‘*each action spot*.’” *Id.* (citing Ex. 2002, 36–38) (emphasis in original). 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. ¶¶ 21–23 (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, 10, and 13 each recites the phrase “determine at least one action spot within a predetermined distance from the current location of the mobile device.” Ex. 1001, 19:26–28, 20:6–7, 20:28–29. Claim 8 depends from claim 1 and further recites that the “determining of the at least one action spot is based upon a defined distance from the mobile device.” *Id.* at

19:59–61. We are not persuaded by Petitioner’s argument that claims 1, 10, and 13 require a “specified distance.” Pet. 16. 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, 8:23–28 (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 8 confirms that a “defined distance” will be further used for the determining step—leading us to conclude that the “predetermined distance” of the independent claims should not be limited to a “specified distance.”

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

3. “display the image with the at least one activity spot”

In our Decision on Institution, we determined that the phrase “display the image with the at least one activity spot” needed no construction. Dec. on Inst. 10–11. Neither party raises this limitation again during the trial. Accordingly, we maintain that the phrase needs no express construction.

4. 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 Ex. Bhattacharjee Decl. ¶¶ 20–22). Patent Owner, through the testimony of Dr. McDaniel, 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 '327 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. 15. 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.

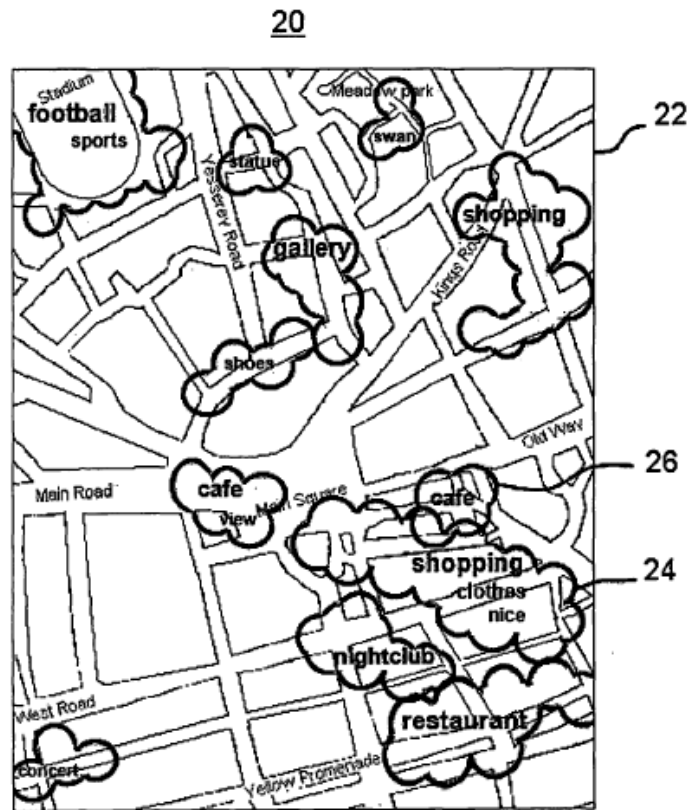


FIG. 1

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 id.* 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.

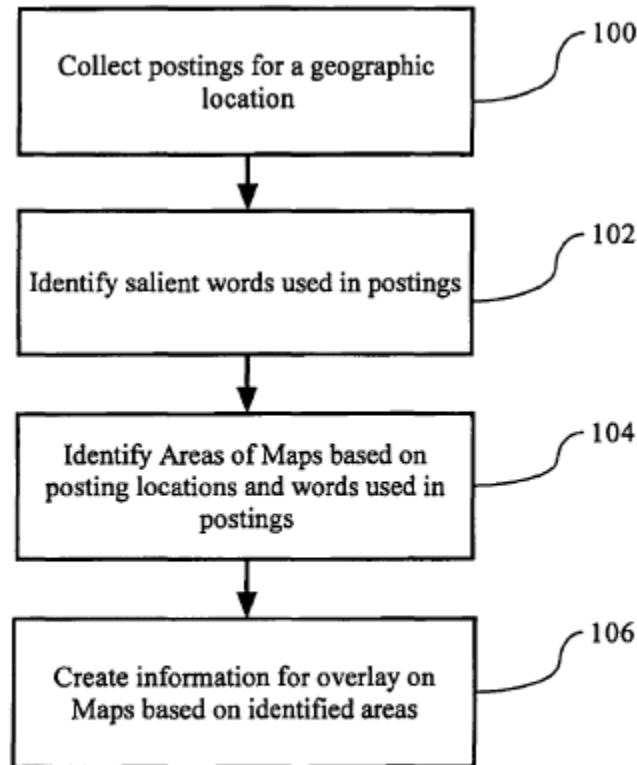


FIG. 4

Figure 4 is a flowchart of steps for creating information for a map overlay. See 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, 10, and 13

Petitioner argues independent claims 1 and 13 together as obvious over the combined teachings of Lemmela and Crowley. *See* Pet. 43–55, 58 (referring for claim 13 to the analysis of claim 1). Petitioner addresses in a separate ground independent claim 10, which relies on the addition of Winkler’s teachings. *Id.* at 60–65. We address all independent claims together as they recite overlapping subject matter, noting where appropriate the claim language that is different.

i. “a display” and “a processor module” (Claim 1)

Claim 1 is directed to “[a] mobile device comprising:” “a display” and “a processor module communicatively coupled to the display and configured to receive executable instructions.” Ex. 1001, 19:18–21.

Petitioner argues that Lemmela teaches this limitation by pointing out that Lemmela’s mobile device includes a processor and a display. Pet. 43–44

(citing Ex. 1005 ¶ 41, Fig. 6). We agree with Petitioner that Figure 6 of Lemmela teaches the mobile device comprising a display and a processor module, as claimed. See Bhattacharjee Decl. ¶ 62[1b]. Patent Owner does not address this limitation.

We determine that Petitioner has shown by a preponderance of the evidence that Lemmela teaches “a display” and “a processor module communicatively coupled to the display and configured to receive executable instructions,” as recited in claim 1.

ii. *“display a graphical user interface on the display” (Claim 1)*

Claim 1 recites the instruction to “display a graphical user interface on the display.” Ex. 1001, 19:23. Petitioner argues that Lemmela teaches this limitation because Lemmela describes a graphical user interface (GUI) that allows a user to interact with the device and modify displays shown on the mobile device’s display. Pet. 44 (citing Ex. 1005 ¶ 41; Bhattacharjee Decl. ¶ 62[1c]). Patent Owner does not address this limitation. We agree that Petitioner’s evidence (Ex. 1005 ¶ 41) shows that Lemmela teaches this limitation. *Id.*

We determine that Petitioner has shown by a preponderance of the evidence that Lemmela teaches to “display a graphical user interface on the display,” as recited in claim 1.

iii. *“receive data indicative of a current location of the mobile device” (Claim 1) and “determining via a processor, a current location of the mobile device” (Claims 10 and 13)*

Claim 1 recites executing instructions to “receive data indicative of a current location of the mobile device.” Ex. 1001, 19:24–25. Claims 10 and

13 each recites the step of “determining, via a processor, a current location of the mobile device.” Ex. 1001, 20:4–5, 20:26–27.

Petitioner argues that Lemmela teaches this limitation because Lemmela discloses a number of positioning mechanisms, such as GPS, which the mobile device can take advantage of to determine current location information. Pet. at 45 (citing Ex. 1005 ¶ 42); *see also* Bhattacharjee Decl. ¶ 62[1d]). We agree with Petitioner because the mobile device of Lemmela includes a GPS receiver that receives GPS transmissions and communicates with the processor to enable the processor to determine current location information for the mobile device. *Id.* Patent Owner does not address this limitation.

We determine that Petitioner has shown that Lemmela teaches the limitations recited in claims 1, 10, and 13 that require either receiving data indicative of or determining a current location of the mobile device.

iv. “action spot” (Claims 1, 10, and 13)

Claims 1, 10, and 13 each recites “determin[ing] at least one action spot within a predetermined distance from the current location of the mobile device.” Ex. 1001, 19:26–28, 20:6–6–7 (the “determine an action spot” limitation). Claims 1, 10, and 13 each further recites that “the at least one action spot correspond[s] to a location where at least one other mobile device has engaged in documenting action within a predetermined period of time.” *Id.* at 19:28–31, 20:8–11, 20:30–33 (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 the teachings of Lemmela in view of Crowley's teachings account for these limitations. Pet. 45–52. Addressing first the “determine an action spot” limitation, we note Petitioner's argument that Lemmela's mobile device is configured to determine “action spots.” *Id.* at 45 (citing Bhattacharjee Decl. ¶ 62[1d]). Lemmela's groups of virtual location-based posts correspond to the recited “action spots.” *Id.* These posts originate from a certain location that contains a particular common, salient word. *Id.* at 45–46 (citing Ex. 1005 ¶¶ 11, 33, 34–35, 38, Fig. 4). These posts also correspond to the location of the recited “documenting action,” such as transmitting messages, because the posts (read here “messages”) are transmitted from mobile devices. *Id.* at 46 (citing Ex. 1005 ¶ 33). Furthermore, with regard to the “current location,” 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 48 (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. And, according to Petitioner, the displayed posts 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) that are not indicative of an activity that "is occurring" relative to the location of the user's mobile device. *See* PO Resp. 23–26 (citing McDaniel 2d Decl. ¶¶ 52–55). For example, Patent Owner argues that Figure 5 of Lemmela confirms that the "shoe" cloud would appear at 4am on a holiday closure date or at other times long after the store is closed and no activity "is occurring" in the area signified by the "shoe" cloud. *Id.* at 25–26 (citing Ex. 1005, Figs. 3A-3C, 5, ¶¶ 43–44, McDaniel 2d Decl. ¶ 54). These arguments, and similar arguments, are unpersuasive because they rely on a claim construction for "action spot" that 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. 48):

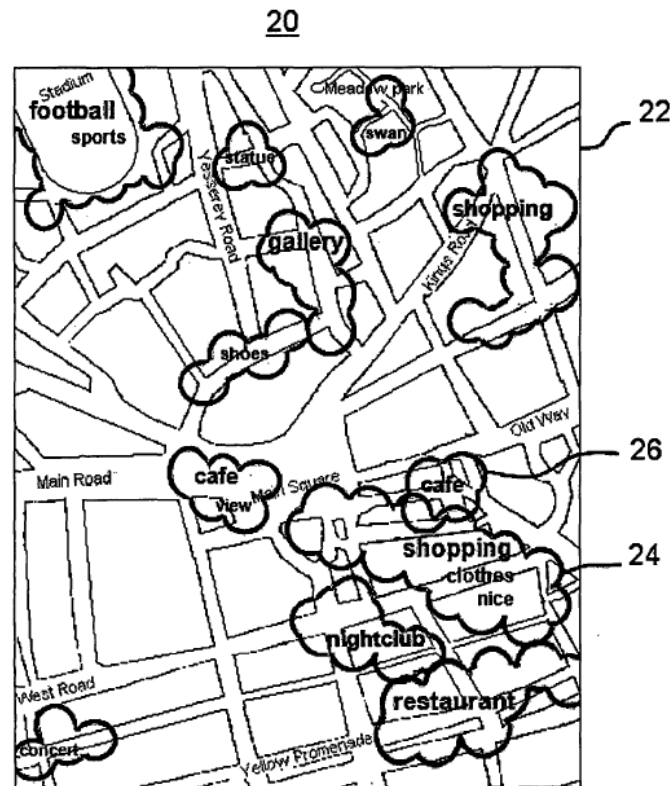


FIG. 1

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.

Lemmela's mobile device, 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 45–46 (citing Ex. 1005 ¶¶ 11, 34, 35, 38, Fig. 4). For instance, Lemmela describes that a mobile device receives a defined collection of location-based postings and processes them to create the cloud display. Ex. 1005 ¶ 38. That processing involves scanning the location-based postings in a geographic area for common words, and grouping 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. 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 restaurant(s) 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 “documenting action”). As Petitioner argues and we agree, those clouds are located within *an area* around the current location of the first mobile device. Pet. 47–49 (citing Ex. 1005 ¶ 26; Bhattacharjee Decl. ¶ 62[1e]).

As for the recited “predetermined period of time” recited in the “has engaged” limitation, Petitioner argues, and we agree, that Lemmela discloses a timeline that allows users to adjust the time window for the display. *Id.* at 46–47 (citing Ex. 1005, Fig. 5, ¶ 39). Figure 5 of Lemmela, reproduced

below, and annotated by Petitioner, shows the time window (indicated by the red box):

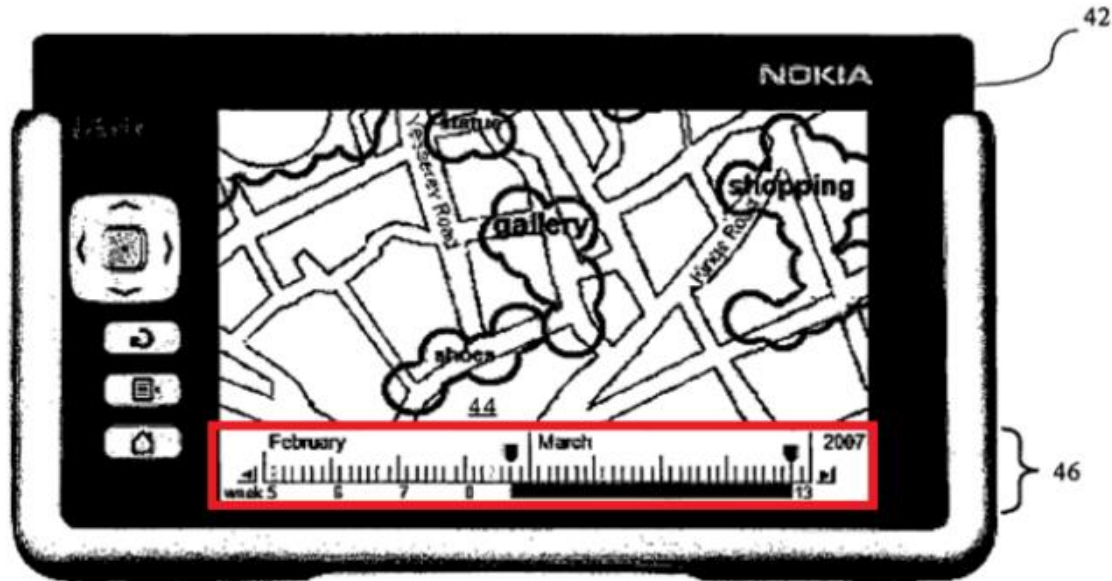


FIG. 5

Figure 5 illustrates a Nokia 770 internet table 42 displaying timeline 46. Ex. 1005 ¶ 39.

We agree with Petitioner that this timeline allows users to “filter the posting clusters presented on a map view 44.” Ex. 1005 ¶ 39. If a post is sent during the selected time period, Lemmela takes it into account in the display. *Id.* 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.* Accordingly, we agree that Lemmela’s clouds, when adjusted to a specific time frame by

the user, correspond to postings that were transmitted within “a predetermined period of time,” according to the claim language.

As for the recited “predetermined distance,” Petitioner *additionally* relies on the teachings of Crowley in combination with those of Lemmela. Pet. 49–52. 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 48–49 (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 system 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.* at 49 (citing Ex. 1008, 9:64–65, 11:3–14, 20:62–21:8; Bhattacharjee Decl. ¶ 62[1e]). 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 to a user, such as within ten blocks of each other. Ex. 1008, 11:3–14, 12:53–65. Crowley further describes that such a distance of ten blocks is “predetermined.” *Id.* at 12:60–61. 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 50 (citing Bhattacharjee Decl. ¶ 62 [1e]). 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 for the mobile device to filter and process the location-based postings to create a mapped display. Bhattacharjee Decl. ¶ 62[1e]. 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 and the mobile device, therefore, would determine the relevant grouped posts. *Id.* A person of ordinary skill in the art would have appreciated that such a combination would also result in potentially reduced processing by Lemmela’s mobile device and would present the users with the “most interesting [groups] from their point of view.” *Id.*; Pet. 52 (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 [those of] Lemmela *at the time of the invention* (e.g., at least as early as August 27, 2010).” PO

Resp. 35–36 (citations omitted). 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 36. Patent Owner further sets forth that arguments about Lemmela and Crowley being in a “similar field” and addressing “similar problems” is not a sufficient reason to combine their teachings, and that alleged internal inconsistencies present further evidence of hindsight. *Id.* at 36–37. 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 Crowley. Pet. 50. The

“would” statements Patent Owner identifies as evidence of hindsight refer to the Petition’s statements paralleling the framework set forth in *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398 (2007): “would require nothing more than performing known methods,” “would also yield a predictable result,” and “would also involve a simple substitution.” *Id.* at 50–51. None of the Petition’s statements highlighted by Patent Owner actually address whether the *knowledge* alleged to motivate the combination is gleaned from the ’327 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 mobile device 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 mobile device programming 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. We also noted above that Lemmela would present to the user the points of interest in which the user is most interested. *Id.*

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, 10, and 13. 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, 10, and 13.

v. *“signify the at least one action spot on the graphical user interface” (Claim 1) and “signifying the at least one action spot with a graphical item on a display of the mobile device” (Claim 13)*

Claim 1 recites instructions to “signify the at least one action spot on the graphical user interface.” Ex. 1001, 19:32–33. Similarly, claim 13 recites “signifying the at least one action spot with a graphical item on a display of the mobile device.” *Id.* at 20:34–35.

Petitioner argues that Lemmela teaches signifying action spots on the GUI of a mobile device. Pet. 53. For instance, Petitioner relies on Lemmela’s Figure 5, which shows a display for use with Lemmela’s system. *Id.* (citing Ex. 1005, Fig. 5, ¶ 22). Figure 5, according to Petitioner, and we agree, shows the grouped posts with the words “shopping,” “shoes,” and “gallery” on the GUI of a mobile device. *Id.* (citing Bhattacharjee Decl. ¶ 62[1f]). As discussed above, Lemmela teaches the “action spot,” and, therefore, the displayed clouds as the “action spots” would be displayed in Lemmela’s GUI. *Id.* Patent Owner does not address this limitation.

We determine that Petitioner has demonstrated by a preponderance of the evidence that the combined teachings of Lemmela and Crowley teach the above-referenced limitation of claims 1 and 13.

vi. *“activity level” limitations (Claims 1 and 13)*

Claim 1 recites instructions to “provide an indication of activity level at the at least one action spot.” Ex. 1001, 19:34–35. Similarly, claim 13 recites “marking the graphical item according to an activity level with at least one action spot.” *Id.* at 20:36–37. We refer to these as the “activity level” limitations.

To teach these limitations, Petitioner relies on Lemmela’s disclosure of the “heat map,” in which certain areas are colored based on the information being presented. Pet. at 54 (citing Ex. 1005 ¶ 28). We agree with Petitioner that Lemmela teaches the “activity level.” 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. 54–55 (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. According to Petitioner, and we agree, “[a] measure of the postings within the group is one way to determine activity level within that group.” *Id.* at 55 (citing Bhattacharjee Decl. ¶ 62[1e]).

Patent Owner disagrees because the recited “activity level” must reflect “levels of actions” of the mobile devices at the location. PO Resp. 30–31 (citing Ex. 1001, 9:59–65; McDaniel 2d Decl. ¶ 61). 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. *Id.* at 31 (citing Ex. 1005 ¶¶ 7, 25, 34, 35). The “level” displayed, according to Patent Owner, corresponds to level of *salient word commonality*. *Id.* (citing McDaniel 2d Decl. ¶¶ 62, 64); Sur-Reply 9–10 (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 thousands of location-based postings. *See* PO Resp. 31–32 (referring to example in McDaniel 2d Decl. ¶ 62). At the post office, continuing with Patent Owner’s hypothetical, there are fewer than a hundred location-based postings, most of those postings containing salient words relating to mail, such as “envelope, stamp, mail.” McDaniel Decl. 2d ¶ 62. 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 13 *do not exclude all forms of filtering. Id.*; *see also* PO Resp. at 32. 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 13, 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, 19:34–35 (reciting merely the “indication of activity level” without qualification). Indeed, as long as the “activity level” *indicates* some measure of activity at the action spot, the claim language is met. In fact, the scope of dependent claim 2 informs us that the applicant did not intend for the “activity level” to be limited to any particular quantity of activity that could comprise the “level” of activity. Claim 2 recites that the “indication of activity level includes coloring 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, 19:36–39 (emphasis added). This claim was originally filed with the ’327 application and, thus,

it is part of the original disclosure. Ex. 1007, 34; *see also Alcon Research, Ltd. v. Apotex Inc.*, 687 F.3d 1362, 1367 (Fed. Cir. 2012) (holding that a limitation recited in the dependent claim must necessarily meet the correspondingly recited independent claim limitations). Therefore, if dependent claim 2’s level of activity can comprise a range, then a range would also meet the activity level of claim 1. Consequently, the claims do not preclude filtering of the transmitted messages (i.e., considering a range of less than the whole of the activity) and determining an “activity level” based on *filtered* transmitted messages. Again, Patent Owner’s declarant admits that claims 1 and 13 do not exclude all forms of filtering. McDaniel Decl. 2d ¶ 62.

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. ¶ 36. 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. 1005, 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 proportionality or particular manner of calculating or displaying the “activity level.” 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 indicate an “activity level at the at least one action spot.”

Accordingly, we determine that Petitioner has demonstrated by a preponderance of the evidence that Lemmela teaches the “activity level” limitations of claims 1 and 13.

vii. *“graphical item” limitation (Claim 10)*

Claim 10 recites, “displaying a graphical item on the display of the 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, 20:12–15 (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. Petitioner 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. ¶ 70[10d]). 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” changing color

does not provide directions, but only indicates whether “past movements” were right or wrong. PO Resp. 37–38; Sur-Reply 8–9. 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 38–40. We address each argument as we set forth our analysis for why Winkler’s teachings, combined with those of Lemmela, accounts for 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 10.

Petitioner relies on the third scenario to explain how Winkler accounts for the “graphical item” limitation of claim 10. 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 she 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 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. 37–38. 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 on the map as the user gets closer to the store, further pointing out that she will see more details about the route there. Ex. 1004, 13:27–31.

We are also not persuaded by Patent Owner’s argument that the change in color only indicates “past movement.” PO Resp. 38. 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. ¶ 52 (stating that Winkler’s system updates the direction as the user walks (i.e, changes her current location)); Reply 26. 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 she is headed. *Id.* Again, claim 10 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 Winkler, 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. ¶ 70[10d]). 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 un rebutted 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 (citing Bhattacharjee Decl. ¶ 70[10d]). 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 in Winkler, would have improved the usefulness and convenience of the Lemmela-Crowley system. *Id.* at 64 (citing Bhattacharjee Decl. ¶ 70[10d]). We see no evidence to the contrary, and the evidence presented by Petitioner and its declarant 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 64 (citing Ex. 1005 ¶ 10); Bhattacharjee Decl. ¶ 70[10d] (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. 39–40. 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 single restaurant or a cafe. See Reply 28 (citing Ex. 1005 ¶ 27, Figs 2A-2B). Thus, we see no reason to discount 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. 38 n.1 (citing Ex. 1007, 159). Upon review of the cited prosecution history of record, we do not find any statement at page 159 of Exhibit 1007 that would lead us to Patent Owner’s conclusion. That page identifies an index of claims of the

application that issued as the '327 patent. It may be that Patent Owner refers to Exhibit 1007 of the co-pending *inter partes* review addressing the claims of U.S. Patent No. 8,825,084 (the "'084 patent"), a patent related to the '327 patent. See IPR2019-00714, Ex.1007. But even if that were the case, 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, Ex.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 (U.S. Patent Application Publication No. 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 asserted prior art, was an ineffective disavowal, and included arguments directed to other limitations not recited in claim 10 of the '327 patent. 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 10.

viii. 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 claims 1 and 13 are unpatentable as obvious over the combination of Lemmela and Crowley, and that claim 10 is unpatentable as obvious over the combination of Lemmela, Crowley, and Winkler.

4. Dependent Claim 2

Claim 2 depends from claim 1, and further recites “wherein the indication of activity level includes coloring 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, 19:36–39. Patent Owner has filed a *Non-Contingent* Motion to Amend that seeks to *replace* this dependent claim with substitute claim 21. MTA 1. Accordingly, we do not address Petitioner's challenge of dependent claim 2 because this claim has been replaced by proposed substitute claim 21, which will be addressed in our decision on the Motion to Amend below.

5. Dependent Claims 3 and 15

Claim 3 depends from claim 1, 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 within a predetermined distance from the at least one action spot.” Ex. 1001, 19:40–44. Claim 15 is identical to claim 3, except that it

depends from claim 13. *Id.* at 20:42–46. We discuss claim 3 below, but our analysis applies equally to claim 15.

Petitioner argues that Lemmela teaches this limitation because Lemmela’s clouds, i.e., the displayed groups of location-based postings, display also an activity level as discussed above with respect to the “activity level” limitation. Pet. 57. For instance, as we discussed above, Petitioner argued, and we agreed, 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. We also agreed with Petitioner’s argument and evidence that “[a] measure of the postings within the group is one way to determine activity level within that group.” *Id.* at 55 (citing Bhattacharjee Decl. ¶ 62[1e]). These postings meet the limitation of “number of messages being transmitted within a predetermined distance from the at least one action spot” because, as stated previously with regard to the “action spot” limitation, these are messages transmitted in the geographic area that is the action spot. *See supra* Section III.C.3.iv, at pages 32–33.

Patent Owner challenges the Petition as insufficient on this point. PO Resp. 33–34. In particular, Patent Owner argues that the Petition fails to show that the “level of activity” is based on actions occurring “within a predetermined distance from the at least one action spot.” *Id.* at 34. Although the Petition relies on the arguments and evidence relating to the “action spot” and “activity level” limitations, Patent Owner contends that

those limitations do not address the claim 3 requirement of a “predetermined distance from the at least one action spot.” *Id.* For instance, according to Patent Owner, the “action spot” is recited with respect to a “predetermined distance from the current location of the mobile device”—and that distance is not the same as the distance of claim 3. *Id.* Nevertheless, Patent Owner argues that Lemmela does not teach the limitation because the clouds encompass multiple locations corresponding to various postings in a filtered group. *Id.* at 34–35. Furthermore, Lemmela’s clustering algorithms, according to Patent Owner, only address that the postings are close to each other, with no evidence that those postings would correspond to a location “within a predetermined distance” of the “action spot.” *Id.* at 35 (citing Ex. 1005 ¶ 35; McDaniel 2d Decl. ¶¶ 68, 69). Thus, to summarize Patent Owner’s contention, Lemmela’s postings occur *within* the cloud area, e.g., action spot, but not within a predetermined distance from the action spot. *Id.* (citing McDaniel 2d Decl. ¶¶ 66–70).

We are not persuaded by Patent Owner’s arguments. The claim language requires that the transmitting activity occur “within a predetermined distance from the at least one action spot.” The ’327 patent does not describe this particular predetermined distance and, therefore, does not preclude a distance of “zero” meters. That is, the displayed activity level recited in the claim corresponds to the message transmissions from the location of the action spot. Lemmela does precisely this. The location-based postings are transmitted from the cloud location, which Petitioner has identified as the recited “action spots.” Pet. 45–52. We do not see what else is required from the perspective of the claim or the ’327 patent’s

Specification, which, again, does not prescribe any limits of the recited “predetermined distance.”

Therefore, we find that Petitioner has demonstrated by a preponderance of the evidence that claims 3 and 15 are unpatentable as obvious over the combination of Lemmela and Crowley.

6. Dependent Claim 8

Claim 8 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 19:59–61. 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. 57. We addressed above, in Section III.C.3.iv, that Petitioner had shown by a preponderance of the evidence that the combined teachings of Lemmela and Crowley accounts for the “determine an action spot” limitation because it would have been obvious to modify Lemmela’s mobile device, which processes location-based postings, to include Crowley’s distance use, for example, ten blocks from the mobile device. This distance meets the claim 8 requirement of a “defined distance from the mobile device.” Thus, the same analysis of claim 1 applies equally here. For the same reasons, therefore, we determine that Petitioner has shown by a preponderance of the evidence that claim 8 is unpatentable as obvious over the combination of Lemmela and Crowley.

7. Dependent Claims 9 and 20

Claim 9 depends from claim 1, and further recites

wherein the processor module is further configured to receive executable instructions to:

run an image acquisition application on the mobile device;

display an image from a camera module on the display screen; and

display the image with the at least one activity spot.

Ex. 1001, 19:62–20:1. Claim 20 is identical to claim 9, except that it depends from claim 13. *Id.* at 20:59–64. Petitioner argues that the combined teachings of Lemmela, Crowley, and Waldman accounts for these claims. Pet. 65–72.

As to the “image acquisition application,” Petitioner argues that Waldman teaches a mobile phone that is an image capturing device running an application to capture images. *Id.* at 65–66 (citing Ex. 1011, Fig. 1, ¶¶ 12, 19). We agree with Petitioner that Waldman discloses an image capturing device with an application for acquiring images. Ex. 1011, Fig. 1, ¶¶ 12, 19. Figure 1 of Waldman is reproduced below with an annotation added by Petitioner.

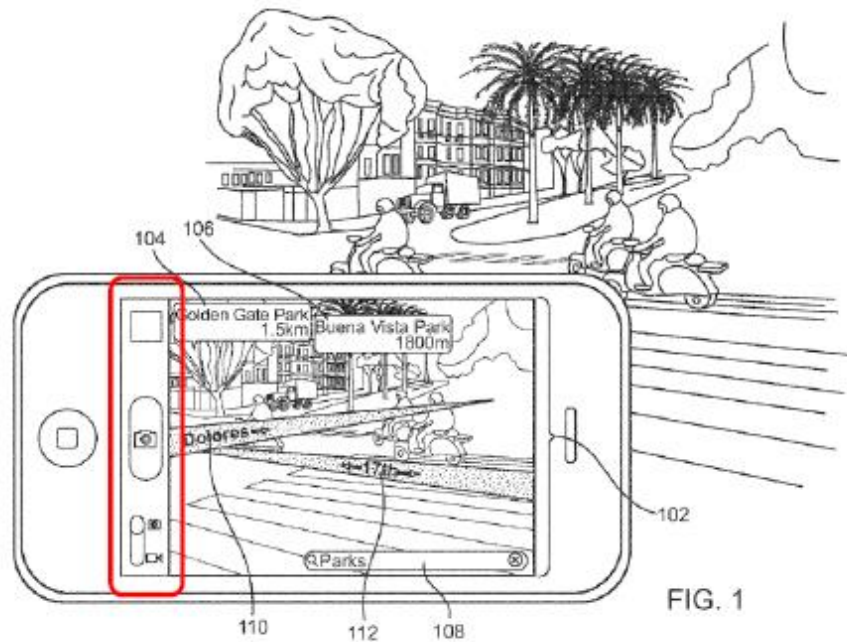


Figure 1 illustrates a visually augmented captured image with data related to a search for points of interest. Ex. 1011 ¶ 12.

Waldman describes searching for nearby points of interest and displaying information related to those nearby points of interest overlaid onto a video feed of a surrounding area. *Id.* ¶ 1. In Figure 1, Waldman shows a handheld communication device, or mobile phone, that has captured and displayed image 102 of the northwest corner of the intersection of Dolores Street and 17th Street using the device. *Id.* ¶ 19. We conclude from these disclosures that Waldman’s handheld device runs an image acquisition application because it is able to acquire an image and display it.

As for the “display . . . from a camera module,” Petitioner also points to Waldman’s handled device disclosure, which, according to Figure 6, includes camera 638. In particular, Petitioner points out that Waldman’s “processor 620 instructs the camera 638 to begin feeding video images to the

display 634.” Pet. 67 (citing Ex. 1011 ¶ 47). We agree with Petitioner that this disclosure of Waldman teaches the claim requirement of displaying an image “from a camera module on the display screen,” as recited in claims 9 and 20.

As for the limitation that requires “display [of] the image with the at least one activity spot,” Petitioner relies on the combined teachings of Lemmela, Crowley, and Waldman. Pet. 68–52. For instance, Petitioner relies on the Lemmela-Crowley combination as asserted for the “activity level” limitation, discussed *supra* in Section III.C.3.vi. However, recall that the image that the combined teachings of Lemmela and Crowley displays is the image of a map overlaid with Lemmela’s clouds. Petitioner acknowledges that Waldman provides the image obtained from the camera module of the handheld device, i.e., the viewfinder image. *Id.* at 68. And Petitioner asserts that it would have been obvious to a person of ordinary skill in the art to modify the Lemmela-Crowley system based on the teachings of Waldman such that the action spots (read here Lemmela’s clouds) were superimposed on a viewfinder image from the camera module. *Id.* (citing *KSR*, 550 U.S. at 415–21).

Patent Owner argues that the asserted combination of teachings is flawed. PO Resp. 40–43. In particular, Patent Owner argues that Petitioner has failed to explain how the groups of postings from Lemmela would be displayed over a viewfinder image. *Id.* at 41. Furthermore, Patent Owner contends that hindsight is the only reason to combine Lemmela’s display of salient word clouds over a map (not a viewfinder image) with Waldman’s display of points of interest over the viewfinder image. *Id.* at 41. According

to Patent Owner, prior to the '327 patent it was not known to display groups of posts over a viewfinder image. *Id.* And Petitioner's proffered reasons to combine the teachings of Lemmela, Crowley, and Waldman focus on vague assertions of similarities and usefulness or convenience. *Id.* Without a more exacting explanation, Patent Owner asserts that technical challenges of how to map large, irregular shapes of Lemmela's clouds to the street-level viewfinder in Waldman are impermissibly unresolved. *Id.* at 42.

We are not persuaded by Patent Owner's arguments. The Petition proffers that displaying nearby points of interest and displaying information about those points of interest is known in the art, as taught by Waldman. Pet. 70. Under *KSR*, combining known or familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results. 550 U.S. at 416–417. The modification of the Lemmela-Crowley combination would yield a predictable result: superimposing groups of posts on the mobile device's viewfinder image. Pet. 70 (citing Bhattacharjee Decl. ¶ 73[9d]). This is how Petitioner framed the obviousness premise for this ground. And we agree that the combination of teachings accords with *KSR*'s framework that combining known techniques using known methods is obvious when it yields predictable results.

But there is more to Petitioner's case of obviousness. Petitioner further proffers that a person of ordinary skill in the art would have recognized at the time of the invention of the '327 patent that the combination would allow users to view group-post information, which is an improvement. *Id.* at 72. Petitioner asserts the usefulness of the modified

Lemmela-Crowley system, which would have only used overlaid maps. *Id.* at 72 (citing Bhattacharjee Decl. ¶ 73[9d]). That is, Petitioner has shown that the user would receive a benefit of receiving information about the points of interest nearby (as taught by Lemmela, Ex. 1005 ¶ 10), but in a more immediate area setting as opposed to a sprawling city map. *See id.* These are sufficient showings of a reason to combine the asserted teachings.

Now, as to the alleged technical hurdles that Patent Owner raises, we note that Dr. McDaniel testified that overhead maps are distinctly different from perspective images of a street location and scene. McDaniel 2d Decl. ¶ 79. But this is only evidence that these images convey different information, not that they are *technically* different so that the location-based clouds of Lemmela could not be superimposed on a viewfinder image.

The argument that the clouds are large, irregular shapes and somehow not conducive to be combined with Waldman's teachings is also not persuasive. As Petitioner argues, and we agree, the cloud of Lemmela may describe a discrete location, such as a single restaurant or café. Reply 28 (citing Ex. 1005, Figs 2A-2B, ¶ 27). Petitioner has also shown persuasively that the viewfinder image of Waldman displays an icon that represents a location that is not quite at the immediate location, but rather it is 1.5 km away: Golden Gate Park. *Id.* at 28–29 (illustrating Ex. 1011, Fig 1).

In sum, Petitioner has shown that the combination of teachings of Lemmela, Crowley, and Waldman would involve the mobile device of Lemmela identifying on the viewfinder image the processed location-based postings as clouds for nearby points of interest, such as the pizza restaurant or café. Further, Dr. Bhattacharjee has testified that such a combination

would have been predictable and “merely involve[d] changing the interface on which action spots were displayed.” Bhattacharjee Decl. ¶ 73(9[d]). Finally, Dr. Bhattacharjee testified that Lemmela’s action spot icons “would be displayed in place of the location labels already contemplated by Waldman.” Bhattacharjee 2d Decl. ¶ 59. We credit this testimony and find that Petitioner has shown sufficiently how and why a person of ordinary skill in the art would have combined the asserted teachings of Lemmela, Crowley, and Waldman.

Accordingly, we are persuaded that Petitioner has shown by a preponderance of the evidence that claims 9 and 20 would have been unpatentable as obvious over the combination of Lemmela, Crowley, and Waldman.

8. Dependent Claim 14

Claim 14 depends from claim 13, and further recites, “wherein marking the graphical item includes coloring the graphical item in accordance with a range of activity occurring at the at least one action spot.” Ex. 1001, 20:38–41. To teach this limitation, Petitioner relies on the same arguments and evidence discussed above with regard to the “activity level” limitation of claim 1. Pet. 59. Petitioner further argues that Lemmela discloses, in addition to changing color boundaries to indicate activity level, that the color of the salient words for each group of postings is based on a range of activity. See Pet. 56 (discussing dependent claim 2, which recites the identical limitation, except that claim 2 depends from claim 1). According to Petitioner, Lemmela teaches that “the words may be presented

in different fonts, colors, or sizes to indicate different information.” *Id.* (citing Ex. 1005 ¶ 29). According to Petitioner, the “different information” Lemmela discloses may include information regarding the range of activity within the group. *Id.* (citing Bhattacharjee Decl. ¶ 63).

We agree that Lemmela teaches this limitation. The salient words that are displayed on the cloud may vary in color to indicate different information. Ex. 1005 ¶ 29. We have determined above that Lemmela indicates level of activity by varying the cloud according to the density of location postings. *See supra* III.C.3.vi. (citing Ex. 1005 ¶ 28). Thus, the change of color of the boundaries, as well as the change of color for the salient words, are evidence that Lemmela teaches a range of activity occurring at the action spot as required by claim 14.

We determine that Petitioner has shown by a preponderance of the evidence that claim 14 would have been unpatentable as obvious over the combination Lemmela and Crowley.

D. OBVIOUSNESS OVER WINKLER AND ALTMAN

The Petition sets forth that Winkler discloses all the limitations of independent claims 1, 10, and 13, except that for limitations reciting “within a predetermined distance,” Altman is relied upon. Pet. 20–36, 39–41. For dependent claims 2, 3, 8, 11, 14, and 15, Petitioner relies exclusively on Winkler as disclosing the further recited limitations. *Id.* at 36–38, 40, 42. Petitioner does not address dependent claims 9 and 20 in the Winkler grounds. *See* Pet. 2–3.

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. 22–25. 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 the portions that Petitioner cited in Winkler showed the users may comment on the tagged locations, without regard for where the user is located when making the comment. *Id.* at 24. Petitioner addressed the Winkler ground in the Reply. Reply 8–21. Patent Owner responds that the Winkler ground continues to be deficient over Petitioner’s reply explanations, which allegedly raise new arguments and evidence that should have been included in the Petition. Sur-Reply 16–21. 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 comment 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.

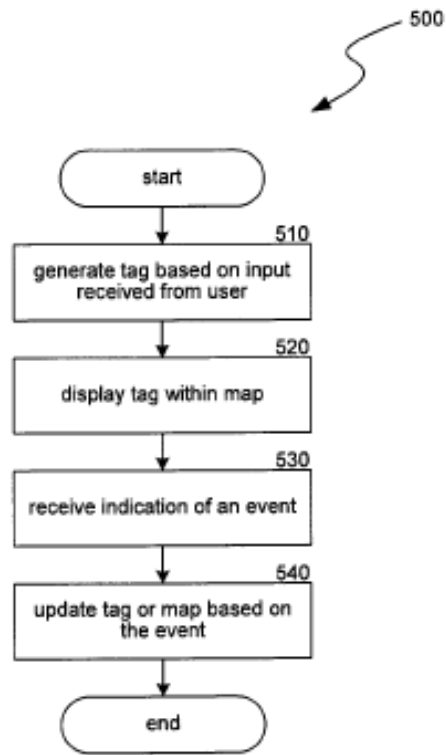


FIG. 5

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.

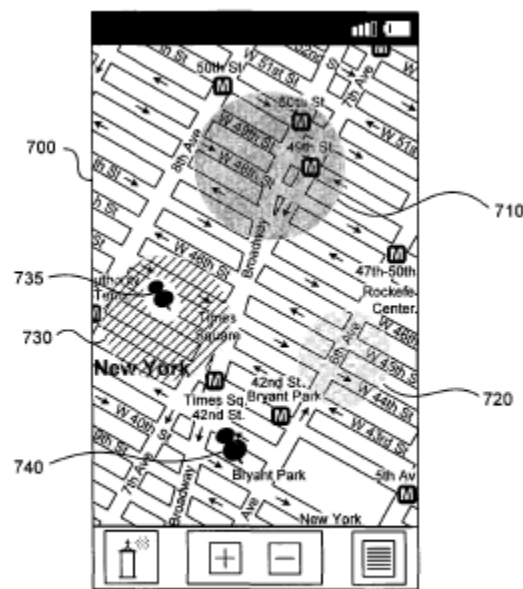


FIG. 7A

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 one 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, 10, and 13

After reviewing the fully developed record, we determine that Petitioner has not demonstrated by a preponderance of the evidence that claims 1, 10, and 13 are unpatentable as obvious over the combination of Winkler and Altman.

i. “*determine an action spot*” limitation

The Petition relies primarily on Winkler as teaching this limitation. Petitioner states that Winkler’s mobile device contains a mapping component that generates “dynamically changing maps and elements on maps.” Pet. 23 (citing Ex. 1004, 3:43–45). Those map elements, according to Petitioner, “correspond to locations where ‘events’ have occurred.” *Id.* at 24 (citing Ex. 1004, 2:16–18, 10:40–42). Petitioner block quotes Winkler’s disclosure of the “events” emphasizing two 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. at 24 (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. ¶ 53[1e]). That activity, according to Petitioner, can "specifically correspond to mobile device transmitting messages, such as by commenting on a location or sending emails or texts." *Id.* (citing Ex. 1004, 2:16–22, 8:7–18) (emphasis omitted). This concludes Petitioner's explanation of the "determine an action spot" limitation in the Petition, aside from the discussion of a "predetermined distance" for which Petitioner relies on Altman. *See* Pet. 25–32. Our analysis of this ground does not turn on the "predetermined distance" aspect of the "determine an action spot" limitation.

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 occur 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 our analysis by explaining the portions of Winkler on which the Petition relies. First, Petitioner alludes to Winkler’s mobile device generating the map elements to be presented to the users. This is disclosed by Winkler. Ex. 1004, 3:43–45 (discussing the mobile device and the map elements displayed to the user). Second, Petitioner alludes to Winkler’s “events.” 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 2:16–19.⁴ 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

⁴ Concerning the “events” discussion, Petitioner (Pet. 23–24) cited only up to line 18 of column 2, we provide the entire sentence here for a more complete analysis.

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 (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; *see also* Pet. 25–26 (Petitioner arguing that Winkler teaches generating one or more map elements, such as pin icons, based on the input identifying a location of a user’s mobile device (citing Ex. 1004, 10:17–19, 10:22–24)). 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 two events: (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* Pet. 24 (quoting Ex. 1004, 11:45–48). Referencing these two “events,” the Petition states that the “event”-causing activity can be limited to what occurs within a certain time period “and/or” within a certain region. *Id.* at 24 (citing Ex. 1004, 11:43–48). 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 tagged location or when a certain number of user’s are proximate to the tagged location. Petitioner does not explain further how Winkler combines these events, if at all. In any event, even absent explanation from Petitioner on this point, we find that Winkler teaches that each (or single type of) “event” would cause a change to the display of a map element. Winkler identifies at column 10, lines 41–47, explained earlier, that it detects each of the categories of events independently of each other. For instance, Winkler detects movement of a mobile user closer to the coffee shop, and would issue an alert to this effect. *See* Ex. 1004, 10:40–41 (“In step 530, the system receives *an indication of an event* at the mobile device or at the location of the map element.”)

(emphasis added)); *see also id.* at 2:23–26 (explaining also that the map element may change in appearance when a certain number of users are located proximate to an associated location). But Winkler would detect a different type of event, such as whether comments are received for a tagged location, separately and update the map element based on that event. *Id.* at 10: 54–55 (“In step 540, the system updates the map element (or, the displayed map) *based on the event.*” (emphasis added)).

Another type of event that Winkler describes is that of the “hidden” element. Winkler describes that “[t]he system may also alert a user who created the hidden map element of any activity at another user’s mobile device.” *Id.* at 11:59–61. 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 “documenting action” part of the claim, we understand the Petition to rely on portions of Winkler to improperly *assume* that mobile devices comment on a tagged location while on location. For instance, in the passage on which Petitioner relies, 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.* at 7:49–54. That table shows that a friend added a comment *to the pindrop* located at specific location stating “Cool place.” *Id.* at Table 1. The user, seeing the friend’s comment, can reply to the posted commentary. *Id.* at 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.* at 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.* at 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 locations 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 a person of ordinary skill in the art would have “clearly understood Winkler teaches dynamically modifying map elements through an ‘event,’ which can include documenting activity at the element’s location.” Reply 11 (citing Bhattacharjee Decl. ¶ 69). We do not agree with Petitioner’s statement, nor do we credit Dr. Bhattacharjee’s testimony in this regard, because they are not consistent with Winkler’s disclosures. As stated above, Winkler modifies a map element upon detecting a certain amount of activity at the location of the map element, such as by detecting a certain number of comments for the coffee shop map element. But this event is triggered regardless of the location of the mobile devices that transmitted the comments for the coffee shop. Thus, such map elements do not constitute “a location where at least one other mobile device

has engaged in documenting action within a predetermined period of time,” as recited in each of claims 1, 10, and 13.

In Reply, Petitioner raises for the first time the embodiment of “hidden” map elements. *Id.* at 12. Petitioner characterizes this as a “response” to Patent Owner’s arguments. But it is not so. Petitioner’s new argument in Reply is that the “hidden” map elements become an “action spot” when those map elements are displayed after an event occurs. *Id.* (citing Bhattacharjee 2d Decl. ¶¶ 62–63). 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 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 16–21 (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,⁵ the documenting activity Petitioner relies on fails to meet the “determine an action spot” limitation.⁶ Petitioner has identified the transmission of messages or comments as the documenting activity. Pet. 24–25 (“[a]ctivity’ can specifically 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, 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 16, 18. With

⁵ 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.”

⁶ The Petition failed to explain the “hidden” map element embodiment and how, as an “action spot,” Winkler would indicate the “activity level” by merely changing from “hidden” to a displayed map element. See Sur-Reply 21–22.

such a vague assertion, there is insufficient evidence to ascertain whether the location of Y would indeed be an “action spot” per the initial 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, coupled with a hindsight viewpoint, X and Y must share the same location while Y is transmitting the message to X. This scenario defies logic because 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 17–18 (Petitioner asserting the documenting action generally, with no detail or explanation as to whom is the device transmitting messages to 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 initially 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, 10, and 13. 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, 10, and 13 are unpatentable as obvious over the combination of 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, 3, 8, 11, 14, and 15 are unpatentable as obvious over the combination of Winkler and Altman.

IV. PATENT OWNER’S MOTION TO AMEND

Patent Owner filed a Non-Contingent Motion to Amend in this proceeding seeking to replace original dependent claim 2 with substitute claim 21. MTA, 1. For the reasons that follow, we *grant* Patent Owner’s motion.

A. APPLICABLE LAW

In an *inter partes* review, amended claims are not added to a patent as of right, but rather must be proposed as a part of a motion to amend. 35 U.S.C. § 316(d). The Board must assess the patentability of proposed substitute claims “without placing the burden of persuasion on the patent

owner.” *Aqua Prods., Inc. v. Matal*, 872 F.3d 1290, 1328 (Fed. Cir. 2017) (en banc); see *Lectrosonics, Inc. v. Zaxcom, Inc.*, IPR2018-01129, Paper 15 at 3–4 (PTAB Feb. 25, 2019) (precedential). Subsequent to the issuance of *Aqua Products*, the U.S. Court of Appeals for the Federal Circuit issued a decision in *Bosch Automotive Service Solutions, LLC v. Matal*, 878 F.3d 1027 (Fed. Cir. 2017) (“*Bosch*”), as well as a follow-up order amending that decision on rehearing. See *Bosch Auto. Serv. Sols., LLC v. Iancu*, No. 2015-1928 (Fed. Cir. Mar. 15, 2018) (Order on Petition for Panel Rehearing).

In accordance with *Aqua Products*, *Bosch*, and *Lectrosonics*, a patent owner does not bear the burden of persuasion to demonstrate the patentability of the substitute claims presented in the motion to amend. Rather, ordinarily, “the petitioner bears the burden of proving that the proposed amended claims are unpatentable by a preponderance of the evidence.” *Bosch*, 878 F.3d at 1040 (as amended on rehearing); *Lectrosonics*, Paper 15 at 3–4. In determining whether a petitioner has proven unpatentability of the substitute claims, the Board typically focuses on “arguments and theories raised by the petitioner in its petition or opposition to the motion to amend.” *Nike, Inc. v. Adidas AG*, 955 F.3d 45, 51 (Fed. Cir. 2020).

Notwithstanding the foregoing, a patent owner’s proposed substitute claims must meet the statutory requirements of 35 U.S.C. § 316(d) and the procedural requirements of 37 C.F.R. § 42.121. *Lectrosonics*, Paper 15 at 4–8. Accordingly, a patent owner must demonstrate: (1) the amendment proposes a reasonable number of substitute claims; (2) the proposed claims are supported in the original disclosure (and any earlier filed disclosure for

which the benefit of filing date is sought); (3) the amendment responds to a ground of unpatentability involved in the trial; and (4) the amendment does not seek to enlarge the scope of the claims of the patent or introduce new subject matter. *See* 35 U.S.C. § 316(d) (2018); 37 C.F.R. § 42.121.

B. PROPOSED SUBSTITUTE CLAIM

Patent Owner presents a claim that rewrites original claim 2 into independent form and adds additional limitations. MTA, 1. Below is a marked-up version of proposed substitute claim 21, showing in underlining only the limitations added to subject matter of original claims 1 and 2:

21. A mobile device comprising:

a touch sensitive display; and

a processor module communicatively coupled to the touch sensitive display and configured to receive executable instructions to:

display, after an application configured to determine action spots has been selected, a graphical user interface comprising an interactive map on the touch sensitive display, wherein the map includes geographic locations and is manipulatable by user input on the touch sensitive display;

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

determine at least one action spot within a predetermined distance from the current location of the mobile device, the at least one action spot corresponding to a location where at least one other mobile device has engaged in documenting action comprising a posted video within a predetermined period of time;

signify the at least one action spot as a selectable graphical item on the interactive map of the graphical user interface and the current

location of the mobile device as an icon on the interactive map of the graphical user interface; and

provide an indication of activity level including video recording activity at the least one action spot;

wherein the indication of activity level includes coloring the selectable 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; and

provide a pop-up display of said posted video on the graphical user interface of the touch sensitive display.

MTA, Appendix A.

C. ANALYSIS – STATUTORY AND PROCEDURAL REQUIREMENTS

1. Reasonable Number of Substitute Claims

35 U.S.C. § 316(d)(1)(B) requires that the number of substitute claims be reasonable. *See also* 37 C.F.R. § 42.121(a)(3). Patent Owner presents one substitute claim corresponding to original claim 2. MTA, 1, Appendix A. This one-for-one substitution is reasonable. 37 C.F.R. § 42.121(a)(3) (“The presumption is that only one substitute claim would be needed to replace each challenged claim . . .”).

2. No Enlargement of the Scope of the Claims

35 U.S.C. § 316(d)(3) requires that the amendment not seek to enlarge the scope of the claims. *See also* 37 C.F.R. § 42.121(a)(2)(ii). Patent Owner contends that proposed substitute claim 21 merely rewrites claim 2 in independent form, without removing original elements, and adds new features or elements. MTA 1. Petitioner does not dispute Patent Owner’s arguments that the amendments do not enlarge the scope of the claim. We

agree that proposed substitute claim 21 does not enlarge the scope of the original claim 2, or any other challenged claim.

3. No Introduction of New Matter/Support in the Original Disclosure

35 U.S.C. § 316(d)(3) additionally requires that the amendment not introduce new subject matter. *See also* 37 C.F.R. § 42.121(a)(2)(ii).

37 C.F.R. § 42.121(b) requires that a motion to amend set forth the support in the original disclosure for each substitute claim. “Importantly, to meet this requirement, citation should be made to the original disclosure of the application, as filed, rather than to the patent as issued.” *Lectrosonics*, Paper 15 at 8. The test for determining compliance with the written description requirement is whether the disclosure of the application as originally filed reasonably conveys to a person of ordinary skill in the art that the inventor had possession of the claimed subject matter at the time of filing, rather than the presence or absence of literal support in the specification for the claim language. *Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010) (en banc); *Vas-Cath, Inc. v. Mahurkar*, 935 F.2d 1555, 1563 (Fed. Cir. 1991); *In re Kaslow*, 707 F.2d 1366, 1375 (Fed. Cir. 1983).

Patent Owner asserts that the limitations of a “touch sensitive display,” “displaying an interactive map” after selecting “an application configured to determine action spots,” activity level that comprises “a posted video,” signifying the action spot as a “selectable graphical item,” and a “pop-up display of said posted video” are described in US Application No. 12/870,676 (“the ’676 application”) from which the ’327 patent issued. MTA 1–6. For the “touch sensitive display,” Patent Owner points out that the ’676 application describes a mobile device with a display screen that can

be a touch sensitive display screen. MTA 2 (citing Ex. 2007 ¶ 26). For the “interactive map,” Patent Owner points out that the ’676 application describes the graphical user interface as an interactive map. *Id.* at 2–3 (citing Ex. 2007 ¶ 20). In addition, Patent Owner points out that the map, according to the ’676 application, can include graphical representations of locations and that the map allows the user to select graphical items and manipulate the map. *Id.* at 3 (citing Ex. 2007 ¶¶ 27–28). For the documenting action comprising “posted video” and activity level comprising “video recording activity,” Patent Owner points out that the ’676 application describes that documenting actions include virtual postings, which may include posting a video recording, and that activity levels indicate the level of video camera activity, such as the number of video recordings being posted. *Id.* at 4 (citing, e.g., Ex. 2007 ¶¶ 33, 41). For the limitation of “selectable graphical item on the interactive map of the graphical user interface,” Patent Owner points out that Figure 3’s embodiment of the ’676 application depicts action spots signified as graphical items that are clouds.” *Id.* at 5 (citing Ex. 2007, Fig. 3, ¶ 30). Finally, for the “pop-up display of said posted video,” Patent Owner points to Figure 6’s embodiment of the ’676 application, which discloses a “pop-up window 610” that “displays the most recent captured photo that was posted on a virtual posting.” *Id.* at 6 (citing Ex. 2007, Fig. 6, ¶ 48). Patent Owner points out that the pop-up window displays other “recent postings.” *Id.* (citing Ex. 2007 ¶ 48). Because video postings is one of the type of postings disclosed, Patent Owner contends that the ’676 application provides support for the “pop-up window” that displays the “posted video.” *Id.*

Petitioner challenges the written description support for the “pop-up window” limitation, arguing that the ’676 application does not disclose the display of posted video. MTA Opp. 4. Petitioner posits that paragraph 48 of the application provides various examples, none of which describes displaying video posting activity. *Id.* We issued Preliminary Guidance concerning the motion and explained there, as we do here, that Petitioner’s argument concerning written description support for this limitation is not persuasive. PG 7. Petitioner reiterates in its Reply to the Preliminary Guidance that proposed substitute claim 21 requires a pop-up display of “said posted video,” which imposes a number of requirements that the ’676 application does not disclose. MTA Reply 11–12 (arguing that the “original disclosure does not demonstrate the patentee was in possession of such a pop-up display”). After considering Petitioner’s Reply to the Preliminary Guidance and Patent Owner’s Sur-reply to the Preliminary Guidance, we still maintain that Petitioner’s arguments are not persuasive.

We reiterate what we stated in the Preliminary Guidance, as our determination on this issue has not changed. The Specification of the ’676 application describes displaying a pop-up window proximate to the action spot with the highest level of documenting activity, where the pop-up window can display the most recent posting, which, as discussed above, can include a video post. *See* Ex. 2007 ¶¶ 22, 32, 33, 35, 41, 48. But pop-up windows are not limited to action spots with the highest level of documenting activity, because paragraph 49 states that “directions can be provided in a pop-up window 610 to any of the action spots 604, 608 selected by the user of the mobile device 100.” *Id.* ¶ 49. And the display of

the most recent posting in a pop-up window is presented as an exemplary implementation, not in a restrictive sense. *See id.* ¶ 48. Thus, in the context of the entire Specification of the '676 application, a pop-up window displaying the most recent posting, would display a posted video when that is the most recent posting for the action spot.⁷ Furthermore, we are persuaded by Dr. McDaniel's testimony that a person of ordinary skill in the art would have understood that the '676 application teaches a pop-up display of a "posting" even if it is not in the form of a photo, because the '676 application indicates several times that a posted video is a useful example of such a "posting." McDaniel 2d Decl. ¶ 138. If a skilled artisan would have understood the inventor to be in possession of the claimed invention at the time of filing, even if every nuance of the claims is not explicitly described in the specification, then the adequate description requirement is met. *See, e.g., Vas-Cath*, 935 F.2d at 1563 (Fed. Cir. 2010); *Martin v. Johnson*, 454 F.2d 746, 751 (CCPA 1972) (stating "the description need not be in *ipsis verbis* [i.e., "in the same words"] to be sufficient").

⁷ We note here that Petitioner attempted to address at oral argument two Board cases in support of Petitioner's written description arguments, but neither of those cases has been designated precedential or informative. *See* Tr. 4:1–6:4; Ex. 1029, 38. We sustained Patent Owner's objection to the slides attempting to introduce new evidence and arguments at the hearing. *Id.*; *see also* Order Setting Video Hearing (Paper 28) (stating procedure for objecting to demonstratives); *see Dell Inc. v. Acceleron, LLC*, 884 F.3d 1364, 1369 (Fed. Cir. 2018) (noting that the "Board was obligated to dismiss [the petitioner's] untimely argument . . . raised for the first time during oral argument").

Upon consideration of the '676 application disclosures presented by Patent Owner as support for the additional limitations of proposed substitute claim 21, we are persuaded that the additional limitations are supported in the original application from which the '327 patent issued.

4. Responsiveness to a Ground of Unpatentability Involved in the Trial

37 C.F.R. § 42.121(a)(2)(i) specifies that a motion to amend may be denied where it “does not respond to a ground of unpatentability involved in the trial.” Patent Owner contends that the additional limitations further distinguish the prior art advanced in the Petition. MTA 6. Patent Owner further contends that “certain features have also been added to address potential, but not conceded, issues under 35 U.S.C. § 101.” *Id.* We agree that this requirement is met.

5. Conclusion

Patent Owner’s motion meets the statutory requirements of 35 U.S.C. § 316(d) and the regulatory requirements of 37 C.F.R. § 42.121.

D. ANALYSIS – PATENTABILITY OF PROPOSED SUBSTITUTE CLAIM 21

After analysis of proposed substitute claim 21 we have determined that Petitioner has not proven, by a preponderance of the evidence, that proposed substitute claim 21 is unpatentable. We focus on the contentions and theories raised by Petitioner: (1) obviousness over Lemmela and Crowley combined with Eyal or Jaffe; (2) obviousness over Winkler and Altman, combined with Eyal or Jaffe; (3) subject matter ineligibility under § 101; and (4) non-enablement. MTA Opp. 7–25. Because Petitioner’s Winkler-based contentions here rely on the same arguments proffered for independent claim 1 discussed above, having determined that Petitioner did

not meet its burden of showing claim 1 unpatentable as obvious over the combination of Winkler and Altman, we do not discuss further the obviousness arguments concerning the combination of those references.⁸

1. Obviousness Based on Lemmela, Crowley, and Jaffe

Petitioner contends that the added features of proposed substitute claim 21 focus on video related features. MTA Opp. 6–7. Petitioner relies on the following references as teaching video posting and processing (*id.*):

- (1) *Jaffe*: U.S. Patent No. 9,507,778 B2, issued November 29, 2016, filed as Exhibit 1013; and
- (2) *Eyal*: U.S. Patent No. 10,454,995 B2, issued October 22, 2019, filed as Exhibit 1014.⁹

We now address the added limitations of proposed substitute claim 21 and Petitioner’s contentions regarding those limitations with respect to the Lemmela, Crowley, and Jaffe references.

i. *Limitation Concerning the “Current Location Icon”*

Proposed substitute claim 21 recites signifying on the interactive map “the current location of the mobile device as an icon.” MTA, Appendix A

⁸ The theory of obviousness presented for proposed substitute claim 21 relies on Winkler’s determination of “action spots” as identified in the Petition at pages 23–26 and as expanded upon on the Reply at pages 6–20. MTA Opp. 11. We determined above (Section III.D.2) that Petitioner’s arguments are deficient on the merits because Winkler does not “determine an action spot” as recited.

⁹ Although we introduce Eyal here as part of Petitioner’s contentions regarding video features, we analyze the grounds concerning Eyal separately further below.

(21f) (the “current location icon” limitation). Petitioner contends that the language of proposed substitute claim 21 does not require that the current location icon be distinct from the action spot icon. MTA Opp. 9 (citing Bhattacharjee 2d Decl. ¶ 166). Thus, Petitioner relies on Lemmela’s “icons” that represent the group postings as corresponding to the “current location of the poster.” *Id.* (citing Ex. 1005 ¶ 33). We understand the “poster” in Petitioner’s contention to refer to the mobile user that is transmitting location-based posts from the location, or potential “action spot.”

In our Preliminary Guidance, we indicated preliminarily that based on the record developed at that time, which did not include Patent Owner’s Sur-Reply, Petitioner’s arguments seemed persuasive to show the “current location icon” limitation of proposed substitute claim 21. PG 10. However, based on the full record before us, we no longer hold that view. *See* PG 3 (“We emphasize that the views expressed in this Preliminary Guidance are subject to change upon consideration of the complete record, including, if applicable, any revision to the Motion filed by Patent Owner. Thus, this Preliminary Guidance is not binding on the Board when rendering a final written decision.”) (citing Notice Regarding a New Pilot Program Concerning Motion to Amend Practice and Procedures in Trial Proceedings Under the America Invents Act Before the Patent Trial and Appeal Board, 84 Fed. Reg. 9,497 (Mar. 15, 2019)).

In the Sur-Reply responding to Petitioner’s Reply to the Preliminary Guidance, Patent Owner challenges this “current location icon” limitation. MTA Sur-Reply 8. In particular, Patent Owner argues that a “poster” is the other mobile device, whose documenting activity results in the “action spot”

determination. *Id.* at 8. This is different from the claim requirement of signifying with an icon “the current location of the mobile device.” *Id.*

We agree with Patent Owner that Petitioner’s cited passages of Lemmela and Petitioner’s arguments regarding the “current location icon” do not show that Lemmela teaches the “current location icon” limitation. Proposed substitute claim 21 recites two distinct mobile devices, there is a mobile device whose current location is received and signified as a graphical icon on the interactive map. MTA, Appendix A (21d). The other mobile device is the one who has engaged in documenting activity. *Id.* at (21e). Petitioner conflates the role of the two mobile devices by pointing to Lemmela’s “poster,” (read here the mobile device that transmits a location-based posting) rather than the mobile device whose user is searching for “action spots” on the map. Because the claim requires an “icon” for the user seeking the “action spots,” we are not persuaded that Petitioner’s contention of Lemmela’s “poster” being coincidentally located at the “cloud” location meets the burden.

We understand that there might be a circumstance in which a user who is searching for “action spots” may also be a “poster.” Although we do not see Petitioner’s arguments as explaining such a scenario, out of an abundance of caution, we express our view that such a scenario fails to meet the claim limitation. The claim requires the display of two things: an “icon” (for the mobile device current location) and a “graphical item” (for the “action spot”). Petitioner’s contention here is that a single graphical element, i.e., Lemmela’s cloud, which signifies the “action spot,” is, at the same time, the “icon” signifying the mobile device. Such conflation of two

separate claim elements is inappropriate—it fails to show that Lemmela would display both the “graphical item” and “icon.” See *Unique Concepts, Inc. v. Brown*, 939 F.2d 1558, 1561–64 (Fed. Cir. 1991) (holding that a claim’s “separate[.]” “recitation of two distinct elements” should be given “full effect”).

Finally, we note that Petitioner’s Opposition to the Motion to Amend, in discussing the “current location icon” limitation, provides no discussion of alternative positions of obviousness with regard to this limitation. Petitioner cites to 10 paragraphs of the Bhattacharjee Declaration in this portion of the brief, explaining only the relevance of paragraph 166, which we discussed above. In paragraph 167 of the Declaration, however, Dr. Bhattacharjee testifies about an alternative contention that it would have been obvious to include in Lemmela a separate icon providing the user device’s current location. See Bhattacharjee 2d Decl. ¶ 167 (alleging that an iPhone would have shown an icon signifying the user’s current location). Petitioner did not present nor develop this contention in its substantive papers. And during oral argument, after our request for Petitioner to discuss the disputed limitations, Petitioner chose to argue other issues.

Tr. 19:16–20:3. In short, Petitioner did not address in its substantive papers (or at oral argument) the contention that, in the alternative, the “current location icon” limitation would have been obvious over Lemmela and additional evidence. Our rules state that “[t]he Board may exclude or give no weight to the evidence where a party has failed to state its relevance or to identify specific portions of the evidence that support the challenge.” 37 C.F.R. § 42.104(b)(5). Our rules further state that “[a]rguments must not

be incorporated by reference from one document into another document.”

Id. at § 42.6(a)(3).

In the Opposition, Petitioner states that Lemmela *discloses* the “current location icon” limitation and cited to paragraphs 158 through 168 of the Second Bhattacharjee Declaration. *See* MTA Opp. 9. The alternative contention of obviousness over Lemmela in the Bhattacharjee Declaration at paragraph 167 is not mentioned or discussed in the Opposition, effectively burying this alternative argument in an exhibit. For this reason, we have the above-mentioned rules prohibiting both incorporating arguments by reference and citing to Exhibits without some explanation of their relevance. Petitioner here has acted against both prohibitions because, by incorporating ten paragraphs of Declaration testimony in the brief, Petitioner attempted to rely on Declaration testimony without explaining that the testimony includes additional contentions of obviousness. We do not give any weight to Petitioner’s alternative argument, because, as it was omitted from its substantive briefs, Patent Owner was not sufficiently on notice of it, and, therefore, did not have a fair opportunity to respond. *See In re Nuvasive*, 841 F.3d 966, 970–71 (Fed. Cir. 2016) (holding that under the Administrative Procedure Act a patent owner must be given adequate notice of and an opportunity to respond to petitioner’s invalidity contentions).

Accordingly, we are persuaded that Petitioner has failed to demonstrate that Lemmela teaches the “current location icon” of proposed substitute claim 21.

ii. *“documenting action comprising a posted video”/“activity level corresponding to posted video and recording activity”/“provide a pop-up display of said posted video”*

Petitioner does not rely on Lemmela to teach “documenting action comprising a posted video” (the “posted video” limitation) and “activity level comprising video recording activity” (the “video recording” limitation) recited in proposed substitute claim 21. MTA Opp. 9–10. Instead, Petitioner asserts that Jaffe teaches related systems that process video posts. *Id.* at 10 (citing Bhattacharjee 2d Decl. ¶¶ 169–88). According to Petitioner, it would have been obvious to combine the teachings of Jaffe with those of the Lemmela-Crowley combination, and the resulting combination would have (1) determined action spots where “documenting action” comprises a posted video, and (2) indicated “activity level” that includes video recording activity. *Id.* at 10.

As for the “pop-up display,” Petitioner relies on Jaffe as teaching the limitation. *Id.* at 12–13. In particular, Petitioner relies on Jaffe’s disclosure of “squares” or “thumbnail images” overlying the map, and argues that the “icons,” depicted in Figure 2B, may be selected by a user to provide a pop-up display of the underlying video post. *Id.* at 13 (citing Ex. 1013, Figs. 2A–2B, 4, 5:43–49, 6:6–10).

We begin our analysis of these “video post” limitations with the assertions concerning Jaffe. A summary of Jaffe is in order and is set forth below.

Jaffe

Jaffe is entitled “Summarization of Media Object Collections.” Ex. 1013, code (54). Jaffe describes that the popularization of digital photography has led to the creation of large collections of photographs. *Id.* at 1:14–17. Jaffe also describes the difficulty of navigating large collections of photographs and the inability of computers to understand the content of the photographs. *Id.* at 1:17–19. In particular, Jaffe notes that “viewing and interacting with such collections has a broad social and practical importance” because “billions of images” constitute a growing record of our culture and shared experience. *Id.* at 1:19–24. To improve viewing photographs and navigating large collections of photographs, digital photography has improved by implementing geographical referencing, whereby photographs are connected to “metadata describing the geographic location in which they were taken (whether by GPS, or other location technologies).” *Id.* at 1:17–33. With the ubiquitous camera phones of mobile phones, images may be associated with geographic data so an increased number of geo-referenced photos are available online. *Id.* at 1:34–39. Geo-referenced photographs can be “categorized geographically or displayed on a map, providing a rich spatial context in which to view a collection of photographs.” *Id.* at 1:41–44. But displaying photographs on a digital map creates clutter as the number of photographs to display increases, leading to overlapping photos and making viewing and finding specific photos more difficult. *Id.* at 1:45–53.

Jaffe then explains the ability to summarize a collection of “geographically referenced media objects (e.g., still or moving images, audio files, and the like).” *Id.* at 1:60–62. Jaffe selects a subset of media objects based on a pattern of the media objects within a spatial region. *Id.* at 1:62–65. For instance, the pattern may be “the density and location of the media objects with a particular spatial region of interest.” *Id.* at 1:65–67. Jaffe explains the summarization logic in connection with Figure 2B, reproduced below.

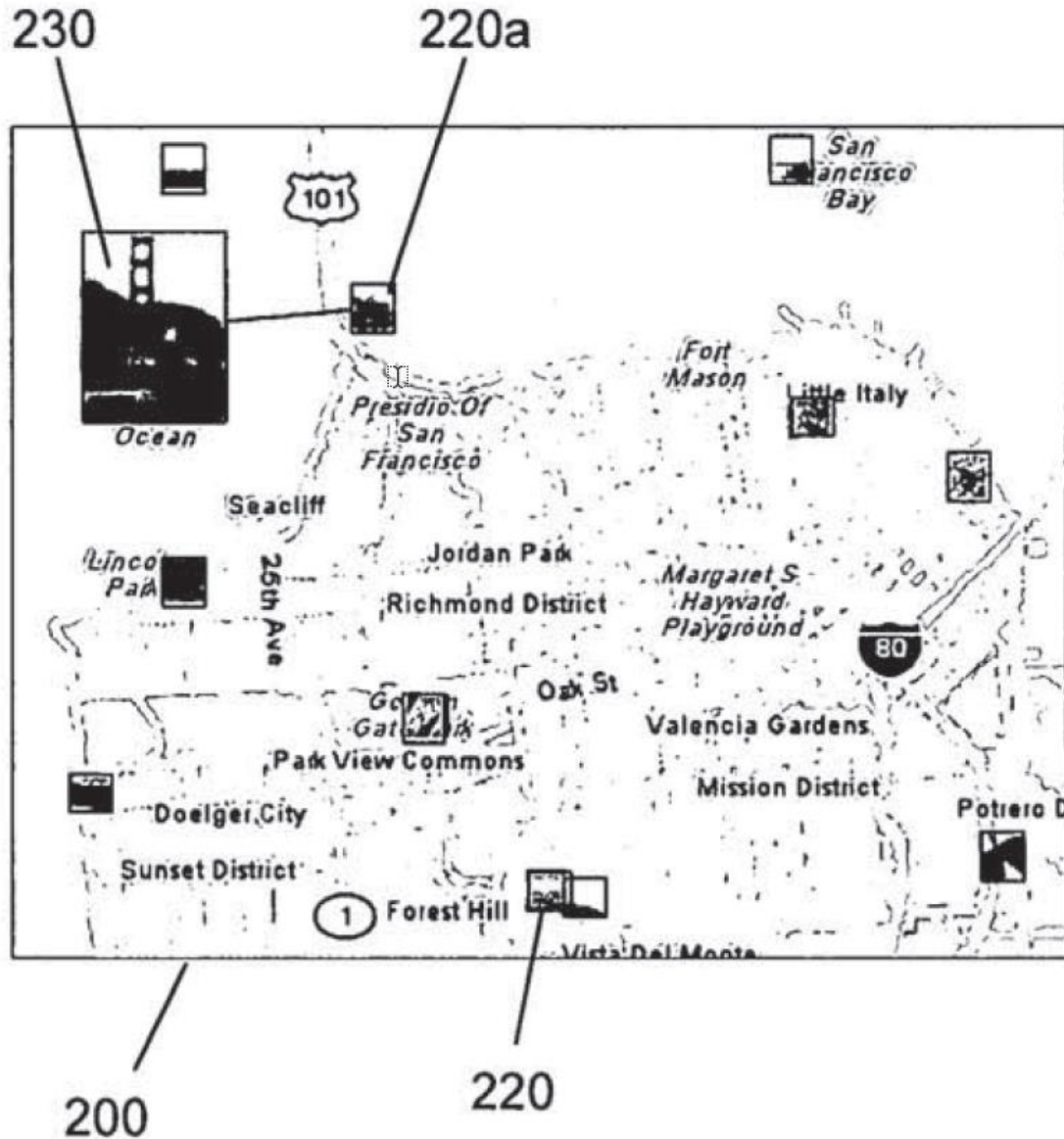


Figure 2B

Figure 2B of Jaffe illustrates map 200 with a summary of the media objects produced by the summarization logic of media server 100 (not shown). Ex. 1013, 5:56–60.

Jaffe explains that a particular spatial region of interest may have a subset of media objects 220 that enables users to find items more easily and

browse more efficiently through large-scale geo-referenced photograph collections. *Id.* at 5:62–6:2. The display logic presents the media objects as thumbnail images over map 200, which may be expanded in response to user input. *Id.* at 6:6–8. For example, scrolling over media object 220a generates the display of a larger image 230. *Id.* at 6:8–10. Jaffe explains that “[i]t will be recognized that in some example a client may further expand image 230, download image 230 to a user device, transfer (e.g., via email) image 230 to other clients, and the like.” *Id.* at 6:10–13.

Jaffe also provides additional features of summarizing the collection of media objects by clustering a collection of media objects in a hierarchical structure. *Id.* at 2:15–20. This structure involves ranking the media objects into sub-clusters. *Id.* at 2:20–23. For instance, a semantic zoom level function provides the ability to select a subset of the media objects. *Id.* at 2:41–46. Jaffe recognizes that image analysis alone is generally poor at understanding the semantics content of an image. *Id.* at 6:45–47. Jaffe’s summarization logic adds meta-data to the photographs based on patterns in the photographs and user’s photographic behavior. *Id.* at 6:55–58. For example, Jaffe’s algorithm inputs metadata, such as where the photograph was taken, by whom, and at what time, as well as textual-topical patterns in the data, such as textual tags associated with the photograph (e.g., user inputted tags). *Id.* at 6:63–7:1.

Jaffe further generates “tag” maps. *Id.* at 13:17–18. For instance, Jaffe’s algorithm may be used to generate a visualization of geo-referenced

collections based on textual tags that are associated with the data. *Id.* at 19–20. Figure 4, reproduced below, illustrates such a tag map.

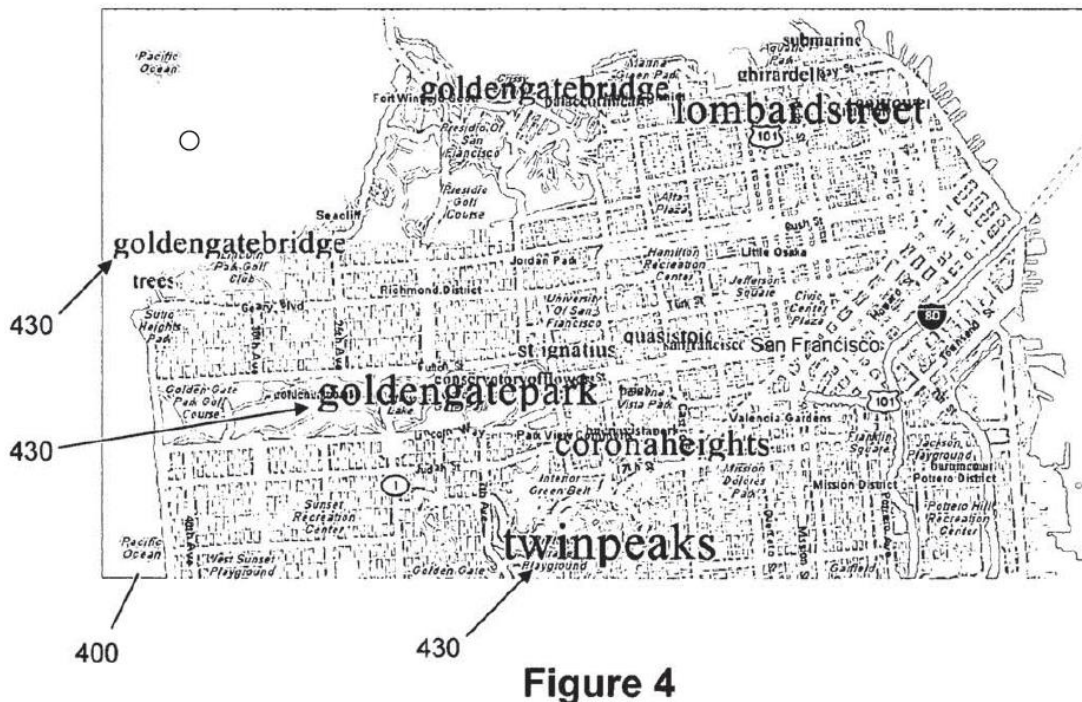


Figure 4 of Jaffe illustrates an exemplary tag map 400 based on a manipulation by summarization logic. *Ex. 1013, 13:20–22.*

Tag map 400 displays tags 430 (or textual topics), that are associated with specific locations on the map. *Id.* at 13:22–24. According to Jaffe,

Tags that are deemed relevant (e.g., according to summarization logic or methods described) may be shown at the location where they “occur” (e.g., based on their geo-locations or user supplied meta-data), and in one example may be displayed in a size that corresponds to the tag’s importance (which may be based on various attributes of the collection, system, or user), as shown in FIG. 4.

Id. at 13:24–31. Map 400 represents San Francisco, California, and displays tags 430 that represent “photograph spots” and not necessarily the locations

of the objects themselves. *Id.* at 13:38–40. For example, the “Golden Gate Bridge” tags, which are shown in multiple locations, are in locations other than the physical location of the Golden Gate Bridge. *Id.* at 13:41–43.

Finally, Jaffe describes that, although digital photographs and still images are used to describe the examples of media objects,

those skilled in the art will recognize that the various examples apply similarly or equally to other media objects, subject to appropriate modifications and use of other functions where appropriate (e.g., viewing a media object may apply to viewing a still or moving image or listening to an audio media object, such as a soundtrack).

Id. at 3:63–4:4. The upload from the client may conform to any media format, such as “still image (e.g., JPEG, TIFF), video (e.g., MPEG, AVI), or audio (e.g., MP3, OGG).” *Id.* at 4:54–57.

Analysis of Lemmela-Crowley Combination With Jaffe’s Teachings

Petitioner argues that combining Jaffe’s teachings with those of Lemmela and Crowley would have resulted in the “Lemmela-Crowley system processing video posts instead of, or in addition to, Lemmela’s textual posts.” MTA Opp. 11 (citing Bhattacharjee 2d Decl. ¶¶ 180–182, 187). Petitioner posits that videos could have been associated with words just like textual posts because videos contain associated metadata, which often included textual tags. *Id.* Petitioner particularly relies on Jaffe stating, “Jaffe’s video posts contained ‘textual tags’ identifying related ‘textual topics’ and were grouped according to these tags.” *Id.* (citing Ex. 1013, Fig. 4, 2:56–62, 4:61–66, 6:63–7:48, 10:50–60, 13:22–48).

As for reasons to combine, Petitioner asserts the following three rationales:

- (1) “Modifying Lemmela-Crowley in view of Eyal or Jaffe would have involved combining prior art elements according to known methods to yield predictable results” (*id.* at 14–15) (the “KSR Known Elements Combination” Theory);
- (2) “Modifying Lemmela-Crowley in light of Eyal or Jaffe would have involved simple substitution of one known element for another to obtain predictable results” (*id.* at 15) (the “KSR Substitution” Theory); and
- (3) “Modifying Lemmela-Crowley in light of Eyal or Jaffe would have also involved the use of known techniques to improve similar systems in the same way” (*id.* at 16) (the “KSR Improvement” Theory). The need for improvement of allowing video in Lemmela’s system allegedly is shown in Jaffe: “the ‘broad social and practical importance’ of ‘viewing and interacting’ with video posts.” *Id.* at 16 (citing Ex. 1013, 1:14–21).¹⁰

See also PG 10–11 (noting the three asserted theories and our preliminary determination that they were not sufficiently explained).

In the Reply to the Preliminary Guidance, Petitioner reiterates its position that “video posts” were known, as taught in Jaffe, and that it was

¹⁰ Our analysis of the rationales with respect to Eyal are discussed further below. We note here simply that Petitioner proffered the same rationales for the combination with either reference, Jaffe or Eyal.

known that devices, such as the mobile device of Lemmela, supported video capture. MTA Reply 1–2. Petitioner faults our Preliminary Guidance as applying a “rigid approach” rejected by *KSR* because we require a reason *why* a person of ordinary skill in the art would have combined the teachings as asserted. *Id.* at 3. Petitioner posits that it is enough to assert the obviousness theories stated in *KSR* (the *KSR* Known Elements Theory, the *KSR* Substitution Theory, and the *KSR* Improvement Theory), without any further reasoning. *Id.* at 3–4. As an example of its contention, Petitioner relies on *Uber Techs, Inc. v. X One, Inc.*, 2020 WL 2123399 (Fed. Cir. May 5, 2020), as standing for the proposition that a person of ordinary skill in the art has sufficient motivation to combine teachings when the separate elements of the claim are in the prior art and the combination yields predictable results. *Id.* at 4. That is, here, because video recording and posting were known in Jaffe, and Lemmela and Crowley teach the other claim elements, the motivation to combine is proper by merely showing that Lemmela-Crowley would have performed “as usual.” *Id.*

As to the specific combination, Petitioner relies on Jaffe’s Figure 4, which shows the tag map, as described earlier, and Lemmela’s map display showing, for instance, the salient word “shopping.” MTA Opp. 15 (citing Ex. 1005 ¶¶ 7–16; Ex. 1013, Fig. 4, 13:22–48, 2:56–62, 4:61–66, 6:63–7:1, 7:39–48, 10:50–60). Petitioner concludes: “Because the combination was known in the art, the result would have been predictable.” *Id.* As we understand it, Petitioner’s contention is that Jaffe discloses both the display of video posts on a map and the display of “salient words”—and based on

this disclosure, Jaffe's teachings would have been combined with Lemmela merely because it would have yielded a predictable result.

Patent Owner challenges Petitioner's reasons to combine characterizing them as "vague entreaties to *KSR*." MTA Sur-Reply 1. Patent Owner further raises a point of dispute regarding Petitioner's reliance on Jaffe. Patent Owner notes an internal inconsistency in Petitioner's theory of obviousness, where Petitioner first relies on Figures 2A–2B of Jaffe as teaching the "graphical items that would 'provide a pop-up display of [] underlying video posts.'" MTA Sur-Reply 5 (citing MTA Opp. 13–14). However, in the stated "reasons to combine," the subject we are covering here, Petitioner focuses on Figure 4 of Jaffe, which illustrates the tag map that displays tags on a map. *Id.* (citing MTA Opp. 15).

We address each of the three identified theories in view of the arguments presented.

The *KSR* Known Elements Combination Theory

The premise of this rationale is that Lemmela would have been modified to include video posts in addition to or instead of the textual posts. MTA Opp. 11 ("These combinations would have resulted in the *Lemmela-Crowley* system processing video posts instead of, or in addition to, *Lemmela's* textual posts."). For instance, Jaffe's Figure 4 shows the tag map with tags that identify locations where photographs may have been taken. Ex. 1013, Fig. 4, 13:20–31. Dr. Bhattacharjee opines that Jaffe's tag map describes a system akin to Lemmela and that the only difference is that Jaffe explicitly contemplates the tags as relating to video posts. Bhattacharjee 2d Decl. ¶ 209. Dr. Bhattacharjee states, "[b]ecause Jaffe already describes the

combination of the Lemmela-Crowley system and Jaffe, this combination clearly would have involved combining prior art elements according to known methods to yield predictable results.” *Id.*

In our view, Petitioner has not done enough to meet its burden. Jaffe describes that its tag map displays tags of metadata attributes of the media objects. Ex. 1013, 1:56–62. We find, however, that Jaffe displays the tags *instead* of the thumbnail embodiments shown in Figures 2A–2B. In particular, Jaffe states, “[r]ather than display representative photographs at their respective locations (e.g., as shown in FIG. 2B), this example conveys concepts represented in the dataset through the metadata tags themselves.” Ex. 1013, 13:34–38. Thus, even assuming that Lemmela would have been modified to include video posts, a contention that is addressed further below, merely alleging that Lemmela would include video posts would not yield the “icons” and “thumbnail images” on which Petitioner relies for the “pop-up display” limitation. See MTA Opp. 12–13 (Petitioner relying on Jaffe’s icons like “squares” and “thumbnail images” which, when selected, provide a pop-up display of the underlying video posts); *but see* MTA Sur-Reply 5 (Patent Owner arguing that Jaffe never actually describes selecting such textual tags on the tag map to thereby display the full media content). At oral argument, Petitioner’s counsel alluded to being able to drill down from the tag map to eventually view the video posts. Tr. 23:22–27. Patent Owner responded, and we agree, that Jaffe does not describe how to go from the Figure 4 tag map to Figures 2A and 2B, which show the icons or thumbnails of postings. *Id.* at 47:24–48:3.

It may be that Petitioner intended to combine with Lemmela the multiple Jaffe display features in order to meet the new claim limitations. But other than to include video posts, Petitioner does not explain any modification of Lemmela that would yield displaying the icons or thumbnail images that are selectable to view the posted video *in addition to* or as a further drill down of the tag-map display.

As another example for why Petitioner's contentions are insufficient, we note that Lemmela is limited to processing textual posts and does not process video. The video processing from Jaffe (or some other teaching), therefore, must also be involved. Indeed, the manner in which Jaffe appends metadata to media objects would have been necessary because Lemmela does not teach tag insertion of media objects. *See, e.g.*, Ex. 1013, 10:61–62 (describing that each photograph is tagged with tags that are drawn from a finite dictionary), 7:25–30 (describing metadata attributes of the media objects to include, among several attributes, textual tags that are manually assigned).

The only “known element” Petitioner relies on is “grouping/ displaying video posts based on location” and “salient words,” as evidenced by Jaffe. MTA Opp. 15. But that is an oversimplification of the combination of Jaffe's “video posts” with Lemmela's teachings. According to Petitioner, Jaffe contributes only the teaching of using video posts instead of textual posts, resulting in Lemmela's continued grouping and display of the collection of location-based postings based on the “salient word” processing. As stated above, other technical features are necessary for the alleged modification of Lemmela to yield the alleged combination with

video postings, and the record lacks sufficient explanation of the modification or the combination of the needed technical features. *See also* Ex. 2003 ¶ 147 (Dr. McDaniel testifying that “modifying Lemmela’s original solution (which relied on text-based filtering) to instead employ posted video . . . would have required a drastic destruction and hindsight reconstruction of Lemmela’s system.”).

Furthermore, merely asserting that the elements of the combination were each, individually, known does not show *why* a person of ordinary skill in the art would have made the asserted combination. It is Petitioner’s burden to show that “the combination of familiar elements according to known methods is likely to be obvious when it does not more than yield predictable results.” *KSR*, 550 U.S. at 416; *see* 35 U.S.C. § 316(e). The Supreme Court recognized that a patent is not proved obvious merely by demonstrating that each element was independently known in the prior art and that “it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does.” *KSR*, 550 U.S. at 418. Our analysis of Petitioner’s contentions does not apply rigid or mandatory formulas as Petitioner asserts. *See* MTA Reply 3. Rather, we look for evidence of a reason that a person of ordinary skill in the art would have combined the alleged known elements of Jaffe (grouping “video posts” based on location and “salient words” or tags) in Lemmela’s system. The assertion that Jaffe already discloses the combination is insufficient because Lemmela requires modifications that go beyond the asserted generality of including “video posts.” In its Opposition, Petitioner neither explains why a person of

ordinary skill in the art would have modified Lemmela to implement Jaffe's teachings of "video posts" nor how it would result in the invention covered by proposed substitute claim 21. *See Personal Web Techs., LLC v. Apple, Inc.*, 848 F.3d 987, 994 (Fed. Cir. 2017) (holding obviousness determination to be improper where the record lacked a "clear, evidence-supported account" of "how the combination" would work).

In sum, Lemmela's modification would involve more than just implementing "video posts." Petitioner provides no explanation of the modification other than the conclusory and vague assertion that Lemmela would be modified to include video posts. Accordingly, we are not persuaded that Petitioner has carried its burden of showing by a preponderance of the evidence that a person of ordinary skill in the art would have modified the alleged Lemmela-Crowley system with the relied-on teachings of Jaffe.

The KSR Substitution Theory

According to Petitioner, modifying Lemmela would have involved a simple substitution of one known element for another to obtain predictable results. MTA Opp. 15 (citing *KSR*, 550 U.S. at 417). Under the *KSR* Substitution Theory, Petitioner contends that combining Lemmela-Crowley with Jaffe's "video posts would have required substituting one type of known post for another." *Id.* at 16 (citing Bhattacharjee 2d Decl. ¶¶ 210, 217). As for predictability, Dr. Bhattacharjee testifies that "[t]he result would have been predictable since, as shown above, the result is substantially similar to the result disclosed in Jaffe." Bhattacharjee 2d Decl. ¶ 210.

In its Reply, Petitioner expands on its explanation and states that “the proposed combinations would have resulted in nothing more than specifying “the types of ‘posts’ and ‘messages’ used as “inputs” to Lemmela’s system. MTA Reply 5. Petitioner also presents “obvious to try” arguments, including reliance on *Uber Techs*; but Petitioner clarified at the oral hearing that the “obvious to try” arguments were part of the “substitution” arguments. Tr. 21:4–6. The “substitution” arguments, Petitioner stated, are its strongest. *Id.* at 21:25–22:2, 51:20–23. According to Petitioner, the *Uber Techs* case is applicable here, where the substitution of Lemmela’s textual posts presents four alternatives. *Id.* at 24:5–25:9 (arguing that four alternatives is a finite universe of ways to communicate using a mobile phone). Further, Petitioner stated that “[t]he activity level of Claim 1 is based upon a number of images captured, number of videos captured, and number of messages transmitted,” arguing thus that the universe of media alternatives to consider is small. *Id.* at 52:1–7. Upon requesting that Petitioner show in the briefs where in the Reply it presented the argument of “four” or fewer alternatives, Petitioner could not point to any. *Id.* at 53:1–8 (arguing only that they are a “finite” number).

We do not agree with Petitioner that it has shown sufficiently a reason to combine under the *KSR* Substitution Theory. First, an obvious to try rationale and the *KSR* Substitution Theory are different obviousness theories. The Supreme Court recognized on the one hand that “when a patent claims a structure already known in the prior art that is altered by the mere substitution of one element for another known in the field, the

combination must do more than yield a predictable result.” *KSR*, 550 U.S. at 416. On the other hand, the Supreme Court noted that showing a combination of elements was “obvious to try” involves the following analysis: “When there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp.” *Id.* at 421. The former requires knowledge of substitution of one element for another. The latter requires that there be predictable solutions, a finite number of which would have been known options within the technical grasp of a person of ordinary skill in the art. Thus, the “obvious to try” reasoning, including reliance on *Uber Techs* is a new analysis that was not included with the Opposition, which we did not have an opportunity to consider in preparing the Preliminary Guidance, and of which Patent Owner had no notice of until after the deadline to propose further revisions to its proposed substitute claim.

Notwithstanding the unfair advantage of supplying a late contention in the motion to amend process, we find that the “obvious to try” reasoning is not applicable here. First, claim 1 of the ’327 patent does not recite any number of finite alternatives to consider. Petitioner argued that claim 1 recites three alternatives, all three being options for a skilled artisan to consider for the “activity level.” Tr. 52:1–7. Claim 1 of the ’327 patent, however, does not recite any detail regarding what activity constitutes an “activity level.” Second, the Specification of the ’327 patent describes the “activity” of the mobile devices as (1) documenting action, (2) recording action, and (3) any other action where the mobile device is being used to

observe and make note of a location or an event currently occurring at the location of the mobile device. Ex. 1001, 2:55–63. Documenting action is broken down into further mobile device action: text messaging, emailing, blogging, posting a message on a social networking internet site or any other documenting action. *Id.* at 2:56–58. The recording action also provides additional actions such as video recording, audio recording, or photographing taken by a mobile device. *Id.* at 2:59–60. Thus, even if we were to use the Specification as evidence of potential options for “activity” level, an exercise that has the danger of hindsight, the number of “options” is not as limited as Petitioner asserts. *See KSR*, 550 U.S. at 426 (finding that comparing the prior art with the description of the patented invention “would be to engage in the very hindsight bias” that must rightly be avoided). Furthermore, while all of the disclosed actions may indicate types of “activity” of a mobile device, there is no evidence that all of those are predictable solutions that a person of ordinary skill in the art, viewing Lemmela, would have had *good reason* to pursue. *See KSR*, 550 U.S. at 421. Petitioner has the burden to come forward with evidence of a “good reason” a person of ordinary skill in the art would have pursued all the “activity” of the Specification in Lemmela’s system, aside from hindsight.

The Reply merely holds up the *Uber Techs* “obvious to try” holding as stand-in for the proposition that Petitioner did not need to provide any particular reason for its obviousness theories, i.e., that stating the reasons to combine using the *KSR* framework was enough. But even if we were to apply *Uber Techs* here, we find that Petitioner does not show in either its *Opposition* or its *Reply* what finite number of alternatives a person of

ordinary skill in the art would have had good reason to pursue (meaning that identifying the finite solutions at oral argument for the first time, even if those were a credible number of finite options, was not proper).

Accordingly, the “obvious to try” argument is not persuasive.

As for the *KSR* Substitution Theory, Petitioner similarly fails to show the proper substitution analysis and proffers no reasonable reason for a person of ordinary skill in the art to consider such a substitution. For instance, Petitioner contends to substitute “one type of known post for another.” MTA Opp. 16. Lemmela’s location-based postings are *text*-based posts. Ex. 2003 ¶ 147 (Dr. McDaniel testifying that Lemmela’s system is premised on filtering *text*-based postings into “salient word” groupings). Thus, the proposed substitution is to use video postings instead of textual posts. Those arguments and evidence are not enough. Dr. Bhattacharjee does not expand or explain the substitution, for instance, to explain how such a substitution would fit within Lemmela’s system or what design incentives would prompt the substitution. As we stated earlier, the facts of this case may not support the “simple substitution” framework stated in *KSR* because of the changes to Lemmela necessary to accommodate “video posts,” none of which are explained. A particular reason to combine is, therefore, necessary to ensure that the combination is not a product of hindsight. See *KSR*, 550 U.S. at 418 (stating that it will often be necessary to look at “the effects of demands known to the design community or present in the marketplace. . . in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed.”), 421 (“A factfinder would be aware, of course, of the distortion caused by hindsight

bias and must be cautious of arguments reliant upon *ex post* reasoning.”), 426 (finding that comparing the prior art with the description of the patented invention “would be to engage in the very hindsight bias” that must rightly be avoided).

Accordingly, we are not persuaded that Petitioner has demonstrated a reasonable rationale under the *KSR* Substitution Theory.

KSR Improvement Theory

Petitioner asserts that the modification of Lemmela-Crowley in light of Jaffe “would have also involved the use of known techniques to *improve* similar systems in the same way.” MTA Opp. 16 (citing *KSR*, 550 U.S. at 417) (emphasis added). Regarding this theory, the Supreme Court stated that, “if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.” *KSR*, 550 U.S. at 417 (stating also that a “court must ask whether the improvement is more than the predictable use of prior art elements according to their established functions.”).

Petitioner relies on “known techniques,” presumably referring to the “known elements” discussed above with regard to the *KSR* Known Elements Combination Theory, namely, grouping/displaying video posts based on location and “salient words,” as evidenced by Jaffe. *Id.* at 15. But as stated above, we have determined that the articulation of a “known” technique, by itself, is too generic in comparison with the technical modifications that a person of ordinary skill in the art would have had to additionally make to Lemmela in order to arrive at the invention covered by proposed substituted

claim 21. We do not repeat those here, but reiterate that merely asserting that “video posts” are known is insufficient to explain how or why Lemmela would display a tag map with underlying “video posts” in addition to icons or thumbnails that would access the posted video for playback.

Petitioner further argues that Lemmela and Jaffe address similar problems in the art. *Id.* at 16 (citing Bhattacharjee 2d Decl. ¶ 211); *see also* MTA Reply 8 (Petitioner arguing that Jaffe describes “similar problems in the prior art related to organizing collections of content”). According to Dr. Bhattacharjee, the problem addressed by Lemmela and Jaffe is the same and the solution is the same. Bhattacharjee 2d Decl. ¶ 211. Because of their similarities, Dr. Bhattacharjee opines that a “person of ordinary skill in the art would have been motivated to look to Jaffe for methods to improve or expand the Lemmela-Crowley system.” *Id.* We do not credit this testimony as it does not explain properly a reason to improve Lemmela. Focusing on similarities or overall problems addressed goes to whether the references are analogous, not whether a person of ordinary skill in the art would have recognized that Jaffe is an improvement over Lemmela and that Lemmela would benefit from Jaffe’s contribution. *See Circuit Check Inc. v. QXQ Inc.*, 795 F.3d 1331, 1335 (Fed. Cir. 2015) (“To be considered within the prior art for purposes of the obviousness analysis, a reference must be analogous.”). Furthermore, Petitioner has proffered similarities between Lemmela and Jaffe that are too generic to be considered, merely focusing on an intended purpose of organizing collections of posts with their respective systems. As we explain further below, this is not enough.

In the Reply, Petitioner argues that, “[w]hile not required under *KSR*,” the record includes specific reasons for why a person of ordinary skill in the art would have been motivated to “add video features to *improve*” the “Lemmela-Crowley” system. MTA Reply 6–7. In particular, Petitioner points out Jaffe’s disclosure of the “broad social and practical importance” of viewing and interacting with “video posts.” *Id.* at 7 (citing Ex. 1013, 1:14–21). Petitioner notes that in our Preliminary Guidance we did not give credit to Petitioner’s contention because this Jaffe statement does not refer to “video posts”—it refers to digital photographs. *Id.* (citing PG 11). According to Petitioner, Jaffe “uses photographs and video interchangeably and explains photographs are described simply ‘for sake of convenience’ and ‘those skilled in the art will recognize that the various examples apply similarly or equally to other media objects’ including a ‘moving image’ (video).” *Id.* (citing Ex. 1013, 3:63–4:4). Petitioner also highlights that Patent Owner has acknowledged that video posts are “an intuitive and powerful social media mechanism.” *Id.* (citing MTA, 8, 21). Finally, Petitioner asserts that Lemmela would gain the benefit of organizing video posts because Lemmela states the advantage of presenting easily understandable summary views of “meaningful/important/relevant *information*,” especially for small screens. *Id.* at 8 (citing Ex. 1005 ¶ 9). According to Petitioner, Lemmela’s “information” “would have allowed for video.” *Id.*

Patent Owner challenges the Reply arguments outlined above as presenting late theories that should be disregarded. MTA Sur-Reply 2 (citing *Henny Penny Corp. v. Frymaster LLC*, 938 F.3d 1324, 1330–1331

(Fed. Cir. 2019)). Patent Owner argues that, on the merits, the “alleged similarities” of the references do not constitute an articulated reasoning with rational underpinning. *Id.* at 3. And with regard to Jaffe, in particular, Patent Owner argues that “Jaffe’s goal for summarizing media collections is [] markedly different from [] Lemmela’s desired results.” *Id.* (citing Ex. 2003 ¶ 143). We are persuaded by Patent Owner’s arguments.

First, we start with Lemmela’s disclosure to assess whether Petitioner has shown an alleged benefit associated with modifying Lemmela’s system. We understand that Lemmela recognizes the proliferation of “electronic notes” that users create. Ex. 1005 ¶ 2. Lemmela teaches that as more and more mobile devices enable the creation of location-based postings, the amount of that information will grow fast. *Id.* The “information” that Lemmela refers to here is the “information about a location.” *Id.* That is, Lemmela here is not referring to “information” that can be video, audio, or photographs as Petitioner argues. Rather, the “information” is the textual description that the user notes about the location being documented. For instance, Lemmela discloses that the “information” is very useful because “[u]sers can access and *read postings specific to places* they are at, such as attending an event or visiting a new place.” *Id.* ¶ 3 (emphasis added). Thus, when Lemmela refers to an advantage of presenting “information” in an “easily understandable summary,” it is referring to presenting the content of the posts as a summary, using “salient words.” *Id.* ¶ 9. Petitioner’s argument that imbues Lemmela’s disclosure with a suggestion to process video posts takes Lemmela out of context, using hindsight, and is not persuasive.

Second, we turn to Jaffe to assess whether Petitioner has shown that a person of ordinary skill in the art would have understood any benefits of Jaffe as being applicable to Lemmela. On this point, we note that Petitioner proffers the general solution of organizing collections of media objects as a solution in Jaffe that is similar to Lemmela's system. MTA Opp. 16 (citing Bhattacharjee 2d Decl. ¶ 211). This similarity speaks to the intended purpose of both Lemmela and Jaffe. In the present case, however, such similarity is factually insufficient to support a finding that a person of ordinary skill in the art would have improved Lemmela using Jaffe's "video posts" in the *same way*. See *KSR*, 550 U.S. at 417. Petitioner does not show any evidence of how a person of ordinary skill in the art would have used Jaffe's "video posts" as an input to Lemmela's system, which, as we explained above, is designed solely for processing and summarizing textual posts. As stated earlier, the improvement or modification of Lemmela is more extensive than simply uploading "video" into Lemmela and expecting the same result Lemmela provides. Dr. Bhattacharjee does not provide any factual support for the conclusion that a "person of ordinary skill in the art would have been motivated to look to Jaffe for methods to improve or expand the Lemmela-Crowley system." Bhattacharjee 2d Decl. ¶ 211. Accordingly, we do not credit this testimony. It is conclusory and vague, especially given the technical differences between processing "video posts" and "textual posts." See *Verlander v. Garner*, 348 F.3d 1359, 1371 (Fed. Cir. 2003) (explaining that the Board has discretion to accord little weight to broad conclusory statements from expert witness).

Third, Patent Owner contends that the alleged improvement of Lemmela, evidenced by Jaffe's disclosure, stands on a "false assumption" that the statements concerning "broad social and practical importance" and the importance of "viewing and interactive" with media objects somehow referred to *video*. MTA Sur-Reply 1. At the heart of this contention is a factual dispute concerning whether Jaffe or Lemmela would support "large scale video posting" at the time of the invention of the '327 patent, August 2010. *Id.* at 2. According to Patent Owner, the importance of viewing and interacting with Jaffe's large collections is attributable to digital photography and there is no evidence that such an importance is equally attributable to "video posts." *Id.* (citing Ex. 1022, 27:11–16 (Dr. McDaniel testifying that posting videos on social networking sites was rather difficult in August 2010 because of the bandwidth requirements of video and the slower networks); Ex. 1024, 153:20–154:1 (Dr. McDaniel testifying the challenge of storing the video data on a phone and moving it onto the network due to upstream speeds and size of video files)). Patent Owner also points to Dr. Bhattacharjee's testimony confirming that the network infrastructure needed to deploy a large-scale environment to support video was a challenge and not in wide deployment by August 27, 2010. Bhattacharjee Decl. ¶¶ 94, 220.

In its Reply, Petitioner relies on Jaffe's disclosures to argue that the prior art is evidence that video is a content option for use in the systems and those systems solve the challenges associated with video files. MTA Reply 9 (citing Ex. 1013, 1:56–62; Ex. 1014, 5:3–15). Petitioner argues that, "in light of the prior art's repeated references to video and the predictability of

the combination . . . it would have been obvious for a [person of ordinary skill in the art] to try the combination in order to build a system that supported video posting.” *Id.* (citing Bhattacharjee 2d Decl. ¶¶ 213, 220, 227, 234). We do not agree with Petitioner’s arguments because these arguments conflate the “obvious to try” theory with the “KSR improvement” theory. We addressed above the “obvious to try” reasoning provided in the Reply and have found that merely asserting that Lemmela would have tried video is not sufficient to show that “video” was one of a *finite set* of predictable solutions that a person of ordinary skill in the art would have had *good reason* to pursue in Lemmela’s system. This argument also ignores the evidence of record discussed above with regard to Patent Owner’s argument that handling video posts at the magnitude described in Lemmela in 2010 presented a technical challenge. Indeed, this particular dispute concerning the differences between handling video (per Jaffe) versus textual posts (per Lemmela) leads us to conclude that Lemmela’s textual-post handling system is different enough from Jaffe’s media-object centric system, such that their dissimilarities are more pronounced than their similarities. And the consideration of the drawbacks and technical challenges caused by implementing “video posts” in Lemmela is relevant insofar as a person of ordinary skill in the art would have needed to make changes to Lemmela to accommodate that type of content, which means that the combination is actually an expansion of Lemmela, with no evidence that Lemmela would have been improved “in the same way.” *See KSR*, 550 U.S. at 417 (stating that the “improvement” theory requires that “a person of ordinary skill in the art would recognize that [the technique] would improve similar devices in

the same way”). Again, we reiterate here that a person of ordinary skill in the art would have needed to implement in Lemmela (1) the tag insertion technology and (2) the summarization logic of Jaffe, because in Jaffe photographs are selected for display using a specific algorithm that takes into account the photo quality (*see* Ex. 1013, 7:30–32), for example, and the implementation of Jaffe’s “icons” and “thumbnails” as another overlay to Lemmela’s cloud map.

Accordingly, based on the full record before us, we find that Petitioner has not persuaded us by a preponderance of the evidence that a person of ordinary skill in the art would have recognized that including “video posts” in Lemmela would have improved Lemmela’s system under the *KSR* Improvement Theory.

iii. Conclusion

Based on our review of the full record, we determine that Petitioner has not shown by a preponderance of the evidence that proposed substitute claim 21 would have been unpatentable as obvious over the combination of Lemmela, Crowley, and Jaffe.

2. Obviousness Based on Lemmela, Crowley, and Eyal

Petitioner’s Opposition to the Motion to Amend regards the obviousness ground as one in which either Jaffe or Eyal disclose the “video posts.” MTA Opp. 6–7. We, therefore, analyze Eyal independently of the Jaffe ground discussed above. We determine that Petitioner has not met its burden concerning this ground based on the combined teachings of Lemmela, Crowley, and Eyal.

i. *Limitation Concerning the “Current Location Icon”*

For this limitation, Petitioner relies on the same arguments discussed above with regard to the ground involving Jaffe. MTA Opp. 9. Thus, we incorporate herein our analysis and determination that Petitioner has not shown by a preponderance of the evidence that Lemmela teaches the “current location icon” limitation. *See supra* Section IV.D.1.i.

ii. *“documenting action comprising a posted video”/“activity level corresponding to posted video and recording activity”/“provide a pop-up display of said posted video”*

We focus the discussion here on how Petitioner presents its contentions concerning Eyal. We discuss Eyal briefly first.

Eyal

Eyal is entitled “System and Method for Obtaining and Sharing Content Associated with Geographic Information.” Ex. 1014, code (54). The Abstract of Eyal states that a “user may view a map indicating the locations where video clips were recorded by the user’s camera.” *Id.*, code (57). Eyal explains that, although there are known GPS video mapping systems for position-stamping photos or video clips taken with a digital camera, those systems do not have convenient, web-based sharing capabilities and the convenience and portability of a unitary full-featured system. *Id.* at 1:13–24. Eyal discloses that video clips captured by a camera are manually or automatically tagged with appropriate geographic metadata. *Id.* at 1:36–39. Eyal describes a software application that is web-based, for using the video clips and the geographical data to create an interactive user interface to browse and watch the video clips. *Id.* at 1:48–52. A user may

click a link situated at the location where the video file was captured or as an interactive map that allows the end-user to play video files associated with locations on the map. *Id.* at 1:52–56. “Clicking the links renders or plays back the video files.” *Id.* at 1:60–61. For example, “a video image thumbnail is displayed on the map and is clickable to play the video.” *Id.* at 1:62–64.

Eyal describes that it either displays the geographic locations of video clips on a map or it displays the locations as a list. *Id.* at 8:34–37. “The location may be displayed via icons, textual data such as city name, thumbnails, latitude and longitude coordinates, or via other means.” *Id.* at 8:37–39.

Analysis of Lemmela-Crowley With Eyal

The Opposition includes a section entitled “Lemmela-Crowley combined with Eyal or Jaffe teaches [proposed] substitute claim 21’s action spots and activity level.” MTA Opp. 11. Petitioner asserts in that section that “videos could have been associated with words just like textual posts.” *Id.* (citing Bhattacharjee 2d Decl. ¶¶ 180–82, 187). The relied on paragraphs of the Second Bhattacharjee Declaration establish that the documenting actions in Eyal comprise a posted video. Bhattacharjee 2d Decl. ¶ 180. In a conclusory manner, Dr. Bhattacharjee then states that, “when any of these references’ location-based video processing is combined with the Lemmela-Crowley system, the result would be the Lemmela-Crowley system determining action spots corresponding to the location of ‘posted video,’ as required by [proposed] substitute claim 21.” *Id.* Again, Petitioner proffers a

simple premise that Eyal discloses video posts and then from that flows a conclusion that because of the known video posts of Eyal, Lemmela would determine action spots corresponding to posted video. Dr. Bhattacharjee’s testimony lacks explanation in this paragraph and does not explain how or why Eyal’s video clips, which have no textual tags, would be processed by Lemmela when determining “action spots.” Accordingly, given the lack of explanation and conclusory obviousness assertion we give this testimony no weight. *See also id.* ¶ 187 (similarly stating in a conclusory manner that the activity level of Lemmela would indicate “video recording activity”). *See Verlander*, 348 F.3d at 1371.

In paragraph 181, Dr. Bhattacharjee explains that “video media typically includes associated metadata, which may include textual tags identifying the topic of this media, or other information.” Bhattacharjee 2d Decl. ¶ 181. There is no factual support for this statement, and the generalness of the assertion is contrary to the disclosure of Eyal. Eyal does not mention any textual tags in the metadata. *See Ex. 1014*, 7:20–22 (stating that “metadata are added to the content item file to indicate the geographic location where the content item was obtained”). Dr. Bhattacharjee discusses Jaffe’s textual tags of video posts, but does not explain what Jaffe’s textual tags have to do with Eyal’s non-text metadata. Bhattacharjee 2d Decl. ¶ 181. In other words, we do not see Dr. Bhattacharjee as testifying, or Petitioner as asserting, a further combination of Jaffe’s textual tags with Eyal’s video clips. If that is the case, then the combination would fail for the same reasons stated above with regard to the asserted ground based, in part, on Jaffe. As for asserting Eyal alone, again, we see no such textual tag

disclosure, and no evidence that Eyal would have included it. Indeed, Patent Owner points out, and we agree, that Petitioner has assumed word tags in Eyal that Eyal does not support. See MTA Sur-Reply 4 (Patent Owner arguing that Petitioner wrongly assumed that Eyal’s videos are associated with “word tags, when, in reality, they are not” (citing Ex. 1014, 2:29–31, 5:16–21, 7:20–22; McDaniel 2d Decl. ¶ 147)).

As for reasons to combine, Petitioner presents the Eyal arguments interspersed with those of Jaffe. MTA Opp. 14–16. We have discussed above the deficiencies concerning those rationales as they pertain to Jaffe. We do not address the ground based, in part, on Eyal in the same level of detail because the analysis is equally applicable to the Eyal assertions. For instance, concerning the *KSR* Known Elements Theory, Petitioner does not even mention Eyal. See MTA Opp. 14–15. As for Dr. Bhattacharjee, he testifies that Eyal discloses “video mapping” and that “combining Eyal’s location-based video posts with the Lemmela-Crowley system for processing and displaying posts would have involved combining known prior art elements.” Bhattacharjee 2d Decl. ¶ 216. He also testifies that “the Lemmela-Crowley system would operate as usual but would have allowed for processing of video posts, specifically.” *Id.* Again, these statements are discussed above with regard to the Jaffe analysis and we found them conclusory and lacking explanation as to why or how a person of ordinary skill in the art would have modified Lemmela’s system to account for “video posts.” The omission is even more glaring with regards to Eyal, which does not include or process any tags for video. In sum, we are not persuaded that

combining Lemmela's teachings with Eyal's teachings would have been as predictable as alleged.

As for the *KSR* Substitution Theory, Petitioner relies on Dr. Bhattacharjee for a more fulsome explanation of the alleged substitution. MTA Opp. 15–16 (citing Bhattacharjee 2d Decl. ¶ 217). The Bhattacharjee Declaration, however, does not add any explanation of Eyal's substitution that remedies the issues identified above with regard to Eyal. For instance, Dr. Bhattacharjee merely opines that Eyal's posts include media such as video. Bhattacharjee 2d Decl. ¶ 217. Then, Dr. Bhattacharjee states that “[t]he result would have been predictable since, as shown above, the result is actually disclosed in Jaffe.” *Id.* (citing to the entire disclosure of Jaffe and the entire analysis in the Opposition concerning the motivation to combine with Jaffe). This testimony is neither useful nor persuasive. It lacks explanation for how the evidence presented with regard to Jaffe in any way shows that Eyal's “video posts” would have been a simple substitution of one known element for another, especially when Eyal's video clips do not include any tags and Lemmela only processes textual posts. Accordingly, we give no weight to Dr. Bhattacharjee's testimony in this regard.

As for the *KSR* Improvement Theory, Petitioner's arguments concerning Eyal parallel those provided with regard to Jaffe. MTA Opp. 16. Petitioner contends that Eyal's system is similar to Lemmela's system and addresses similar problems in the art. *Id.* (citing Bhattacharjee 2d Decl. ¶ 218). As for the similarities, Dr. Bhattacharjee testifies that Lemmela and Eyal both teach “location-based content display systems” and that they both group user posts in ways that signify information about locations and sharing

these posts with other users. Bhattacharjee 2d Decl. ¶ 218. And as for the improvement, Dr. Bhattacharjee testifies that the “Lemmela-Crowley system and Eyal both state that one way in which these prior art systems could be improved is to increase their sharing capability.” *Id.* Similar to its explanation regarding the ground based, in part, on Jaffe, Petitioner relies on Jaffe’s statement of a “broad social and practical importance” of viewing and interacting with video posts. MTA Opp. 16.

Petitioner’s arguments and Dr. Bhattacharjee’s testimony fail for the same reasons stated above with regard to Jaffe. By way of summary, the statement of the similarities does not take into account that, although both Lemmela and Eyal teach processing user posts, the underlying system in Lemmela is technically configured to process textual posts, while Eyal is configured to handle video clips with geographical location only. A comparison of the Lemmela and Eyal systems informs us that these are even more dissimilar than the Lemmela and Jaffe systems. In sum, there is even more reason to doubt that a person of ordinary skill in the art would have recognized that Eyal’s video clip handling would have benefited Lemmela’s system.

iii. Conclusion

Based on our review of the full record, we determine that Petitioner has not shown by a preponderance of the evidence that proposed substitute claim 21 would have been unpatentable as obvious over the combination of Lemmela, Crowley, and Eyal.

3. Winkler Grounds

Petitioner contends that proposed substitute claim 21 would have been obvious over Winkler, in combination with teachings of Altman and those of Eyal or Jaffe. MTA Opp. 6–18. Petitioner’s contentions, however, do not alter the manner in which it relies on Winkler for the “determine an action spot” limitation, except to add the “video posts” arguments and evidence discussed above with regard to the grounds based, in part, on Lemmela. *Id.* Because we have determined that Petitioner did not meet its burden of showing that the combination of Winkler and Altman teaches the “determine an action spot” limitation of the original claims, we determine that Petitioner also has not met its burden of showing that proposed substitute claim 21 would have been unpatentable as obvious over the combination of Winkler, Altman, and Eyal or Jaffe.

4. Patent Eligibility Under 35 U.S.C. § 101

Petitioner’s Opposition contends that because original claim 2, which proposed substitute claim 21 replaces, was found patent ineligible in district court, the district court analysis likewise shows that proposed substitute claim 21 is patent-ineligible. MTA Opp. 18–19. We noted in our Preliminary Guidance on the Motion to Amend that Petitioner’s analysis of proposed substitute claim 21 for § 101 patent eligibility was unpersuasive. PG 13. We noted that Petitioner did not identify any “abstract ideas” from one of the four groupings indicated in the 2019 Revised Patent Subject Matter Eligibility Guidance, Step 2A, Prong One. *See id.* (citing 84 Fed. Reg. 50, 54 (Jan. 7, 2019) (“Guidance”)). We also noted that Petitioner did

not analyze proposed substitute claim 21 with respect to integrating any alleged abstract idea into a practical application, especially in light of several new limitations recited in proposed substitute claim 21. *Id.*

In its Reply, Petitioner applies the Office’s 101 Guidance. MTA Reply 10–11. Patent Owner responds to Petitioner’s argument patent-eligibility of proposed substitute claim 21. MTA Sur-Reply 11–12. We analyze below the patent-eligibility of proposed substitute claim 21 under the Office’s 101 Guidance.

i. Legal Principles

An invention is patent-eligible if it claims a “new and useful process, machine, manufacture, or composition of matter.” 35 U.S.C. § 101. But the Supreme Court has long interpreted 35 U.S.C. § 101 to include implicit exceptions: “[l]aws of nature, natural phenomena, and abstract ideas” are not patentable. *E.g., Alice Corp. v. CLS Bank Int’l*, 573 U.S. 208, 216 (2014). To determine whether a claim falls within an excluded category, the Supreme Court has set out a two-part framework, described in *Mayo* and *Alice*. *Id.* at 217–18 (citing *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 75–77 (2012)). That framework requires us to first consider what concept the claim is “directed to.” *See Alice*, 573 U.S. at 219 (“On their face, the claims before us are drawn to the concept of intermediated settlement, *i.e.*, the use of a third party to mitigate settlement risk.”); *see also Bilski v. Kappos*, 561 U.S. 593, 611 (2010) (“Claims 1 and 4 in petitioners’ application explain the basic concept of hedging, or protecting against risk.”). If the claim is “directed to” an abstract idea, we turn to the

second part of the *Alice* and *Mayo* framework, where “we must examine the elements of the claim to determine whether it contains an ‘inventive concept’ sufficient to ‘transform’ the claimed abstract idea into a patent-eligible application.” *Alice*, 573 U.S. at 221 (citation and quotation marks omitted).

In January 2019, the U.S. Patent and Trademark Office (“USPTO”) published revised guidance on the application of § 101. 2019 Revised Patent Subject Matter Eligibility Guidance, 84 Fed. Reg. 50 (Jan. 7, 2019) (“Guidance”). Under this Guidance, we first look to whether the claim recites (1) any judicial exceptions, including certain groupings of abstract ideas (i.e., mathematical concepts, certain methods of organizing human activity such as a fundamental economic practice, or mental processes); and (2) additional elements that integrate the judicial exception into a practical application (see Manual of Patent Examining Procedure (“MPEP”) § 2106.05(a)–(c), (e)–(h) (9th Ed., Rev. 08.2017 (Jan. 2018))). Guidance at 52–55.

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

(3) adds a specific limitation beyond the judicial exception that is not “well-understood, routine, conventional” in the field (see MPEP § 2106.05(d)); or

(4) simply appends well-understood, routine, conventional activities previously known to the industry, specified at a high level of generality, to the judicial exception.

See Guidance at 56. With this Guidance in mind, we turn to Petitioner’s arguments.

ii. *The Judicial Exception—Step 2A, Prong 1, of the Guidance*

The Guidance breaks the *Alice/Mayo* test for identifying claims directed to judicial exceptions into two prongs. Guidance at 53. Step 2A, Prong 1, asks whether the claim *recites* a judicial exception. Guidance at 52–54.

Petitioner argues that proposed substitute claim 21 is directed to methods of organizing human activity and/or managing personal behavior or relationships or interactions between people. MTA Reply 10. According to Petitioner, the claim recites tracking locations of activity and using a device to perform a task “that ’327 patent admits humans had been doing on their own.” *Id.* (citing Guidance, 52–54). Patent Owner argues that Petitioner’s analysis lumps five claim limitations “into one genericized ‘abstract idea’ used for describing broader claim 1.” MTA Sur-Reply 11–12 (citing Ex. 2005).

We look to the language of proposed substitute claim 21 to determine if Petitioner has identified properly one of the four categories of “abstract ideas” from the Guidance. Below is proposed substitute claim 21, showing in underlined text the added limitations (to those of original claims 1 and 2), and including identifiers for ease of reference:

[A] a touch sensitive display; and

[B] a processor module communicatively coupled to the touch sensitive display and configured to receive executable instructions to:

[C] display, after an application configured to determine action spots has been selected, a graphical user interface comprising an interactive map on the touch sensitive display, wherein the map includes geographic locations and is manipulatable by user input on the touch sensitive display;

[D] receive data indicative of a current location of the mobile device;

[E] determine at least one action spot within a predetermined distance from the current location of the mobile device, the at least one action spot corresponding to a location where at least one other mobile device has engaged in documenting action comprising a posted video within a predetermined period of time;

[F] signify the at least one action spot as a selectable graphical item on the interactive map of the graphical user interface and the current location of the mobile device as an icon on the interactive map of the graphical user interface; ~~and~~

[G] provide an indication of activity level including video recording activity at the least one action spot;

[H] wherein the indication of activity level includes coloring the selectable 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; and

[I] provide a pop-up display of said posted video on the graphical user interface of the touch sensitive display.

See MTA, Appendix A; Ex. 1001, claims 1, 2.

We focus our analysis on limitations [C]–[I], which recite the instructions that the processor would execute.¹¹ Starting with limitations addressing instructions of what to display, we note that limitations [C], [F], [G], [H], and [I] recite displaying the map to include signifiers, geographic locations, change of coloring depending on the data, and providing a pop-up display on the mobile device. Limitation [D] focuses on receiving data, an extra-solution activity that is not germane to the “abstract idea” analysis.¹²

Limitation [E] is the “determine an action spot” limitation, amended to reflect “posted video” actions. We agree with Petitioner that, because of limitation [E], proposed substitute claim 21 recites certain methods of organizing human activity. As stated in the October 2019 Update to the Guidance, examples of this category of abstract ideas include managing personal behavior, relationships, or interactions between people. October 2019 Update: Subject Matter Eligibility, 84 Fed. Reg. 55942 (*available at https://www.uspto.gov/sites/default/files/documents/peg_oct_2019_update.pdf*) (“Update”) at 4. According to the Update, this sub-grouping encompasses activity that involves multiple people (such as a commercial interaction).

¹¹ Because limitations [A] and [B] recite the display and processor of the mobile device, those elements would fall under analysis under Step 2A, Prong 2 (integration into a practical idea) and Step 2B (inventive concept).

¹² See *Diamond v. Diehr*, 450 U.S. 175, 191–92 (1981) (“[I]nsignificant post-solution activity will not transform an unpatentable principle into a patentable process.”).

The Specification of the '327 patent explains that a mobile device having map functionality would have been limited to displaying streets within a city. Ex. 1001, 3:2–4. If a user of the mobile device had wanted to find information relating to events and happenings currently occurring proximate to the mobile device's present location, the user of the mobile device would have had to search an external resource and compare the found locations and happenings to the user's current location. *Id.* at 3:4–12. According to the recited “action spot” determination, the mobile device determines those events and locations that are proximate to the user's location. And, the determined “action spot” corresponds to a location where other mobile devices have posted a video within a predetermined period of time. Limitation [E], therefore, takes into account the behavior of users with mobile devices to better identify for them areas of interest occurring around them. Though searching certainly was in the prior art, the user may have had to manually search for the information using various search engines and calendars (*see id.*), whereas limitation [E] automates the search for the activity to determine the areas of interest, and provides that information to the user.

In conclusion, we determine that proposed substitute claim 21 recites certain methods of organizing human activity, which is an abstract idea.

iii. Integration into a Practical Idea—Step 2A, Prong 2, of the Guidance

Step 2A, Prong 2, asks whether the claims are “directed to” a judicial exception or whether the claims integrate the judicial exception into a practical application. Guidance, 84 Fed. Reg. at 53 (explaining the practical

application test responds to “a growing body of decisions . . . distinguish[ing] between claims that are ‘directed to’ a judicial exception . . . and those that are not”). A practical application is one where the claim “will apply, rely on, or use the judicial exception in a manner that imposes a meaningful limit on the judicial exception, such that the claim is more than a drafting effort designed to monopolize the judicial exception.” *Id.* at 54. For example, limitations that are indicative of “integration into a practical application” can include:

- 1) Improvements to the functioning of a computer, or to any other technology or technical field—see MPEP § 2106.05(a);
- 2) Applying the judicial exception with, or by use of, a particular machine—see MPEP § 2106.05(b);
- 3) Effecting a transformation or reduction of a particular article to a different state or thing —see MPEP § 2106.05(c); and
- 4) Applying or using the judicial exception in some other meaningful way beyond generally linking the use of the judicial exception to a particular technological environment, such that the claim as a whole is more than a drafting effort designed to monopolize the exception—see MPEP § 2106.05(e).

In contrast, limitations that are not indicative of “integration into a practical application” may include:

- 1) Adding the words “apply it” (or an equivalent) with the judicial exception, or mere instructions to implement an abstract idea on a computer, or merely uses a computer as a tool to perform an abstract idea—see MPEP § 2106.05(f);
- 2) Adding insignificant extra-solution activity to the judicial exception—see MPEP § 2106.05(g); and

- 3) Generally linking the use of the judicial exception to a particular technological environment or field of use—*see* MPEP § 2106.05(h).

Petitioner argues that “the lack of meaningful limits on the abstract ‘activity mapping’ concept recited in the ’327 claims is precisely why the district court found these claims invalid.” MTA Reply 10 (citing Ex. 2005, 40–42). According to Petitioner, proposed substitute claim 21 “does not limit the concept in space, time, or scope, beyond limiting the documenting activity to video posts.” *Id.* at 10–11.

Patent Owner argues that “cited evidence” shows that certain tangible requirements of proposed substitute claim 21 “tether the action spot/activity level features to the specific solutions on the small-screen interface while also limiting the claim scope towards the specific application based on posted video.” MTA Sur-Reply 12 (citing McDaniel 2d Decl. ¶¶ 150–161). Patent Owner also argues that proposed substitute claim 21 “represents a very clear technological improvement in the way computing devices—namely, mobile devices with limited screen space—operate to assist users in identifying and locating nearby happenings and events.” *Id.* (citing McDaniel 2d Decl. ¶¶ 150, 158–161).

We find here that Petitioner has not met its burden of showing that the limitation fails to recite integration of the abstract idea into a practical idea. Arguing generally that there are no meaningful limits to the abstract idea without accounting for the newly added limitations to proposed substitute claim 21 is not sufficient. Although we recognize that the District Court’s

decision on summary judgment may have placed emphasis on this aspect of the analysis, the claim before that court was not proposed substitute claim 21. Furthermore, Patent Owner proffers evidence of technological improvement via testimony of Dr. McDaniel. That testimony presents several examples of technological improvements. We address each in turn.

First, Dr. McDaniel notes all the problems with the “manual search” of the prior art to imply that the “action spot” determination (limitation [E]) improves accuracy and ease of use. McDaniel 2d Decl. ¶¶ 150–158. We are not persuaded by this evidence. As Dr. Bhattacharjee testifies, the problem sought to be addressed by proposed substitute claim 21 relates “to user’s frustration in having to consult multiple resources in order to determine the location of interesting events.” Bhattacharjee 2d Decl. ¶ 102. Indeed, the problem addressed with the action spot determination is not technological. And the solution is not technical either. Claim limitation [E] lacks detail of any *technical* implementation that limits the functional description of determining an action spot to a particular aspect of the computing environment or to programming of the application. The claim language is result-oriented, without details as to how the action spot determination is *technologically* implemented. It merely recites the outcome of the “determination of an action spot” with the parameters for that determination and the conclusion that such a determination is made in a computing environment (with a generic processor).

Second, Dr. McDaniel testifies that the “interactive map” recited in proposed substitute claim 21 (limitation [F]) *signifies* two things on the screen, the current location icon and the “action spot” graphical item,

avoiding the having to switch applications or screens. McDaniel 2d Decl.

¶ 159. According to Dr. McDaniel, “[t]hese elements thus represent an express application of the ‘action spot’ features to mobile device technology in a manner that improves the user’s experience when using a small-screen mobile device (e.g., a smartphone).” *Id.* Dr. Bhattacharjee testifies that mobile device applications with “interactive map[s]” displaying geographical locations and the current location of the mobile device were “well known and generic,” but otherwise does not address whether the “signified” icon and geographical item of the “interactive map” would improve the technology or the technological field. Bhattacharjee 2d Decl.

¶¶ 106–107. Further, we note that Dr. Bhattacharjee’s testimony is not useful for this limitation [F] as it *generally* addresses map applications on mobile phones with navigation icons. But that is not what the “signify” limitation addresses. We note that Dr. Bhattacharjee focuses on the *ordinary* display of maps and display of the location of the mobile phone on the map. *Id.* Therefore, on the full record, we see no argument from Petitioner or testimony from its declarant rebutting Dr. McDaniel’s testimony that signifying the current location icon and the action spot as a graphical item on an interactive map is a technological improvement of the mobile device. Thus, we determine that, on this point, Petitioner has not met its burden of showing that proposed substitute claim 21 is patent-ineligible.

As another reason supporting our determination that Petitioner has not met its burden, we note that Patent Owner argues the applicability here of the holding in *Core Wireless Licensing S.A.R.L. v. LG Electronics, Inc.*, 880 F.3d 1356 (Fed. Cir. 2018). MTA 19. In *Core Wireless* the court found that

the claims were directed to an improved user interface for computing devices. *Id.* at 1362–1363. The court stated, “[a]lthough the generic idea of summarizing information certainly existed prior to the invention, these claims are directed to a particular manner of summarizing and presenting information in electronic devices.” *Id.* at 1362. We see a parallel between *Core Wireless* and certain limitations of proposed substitute claim 21.

Although it may be abstract to determine an “action spot”—identifying areas of interest where there is mobile device “activity”—the claim is further directed to signifying (limitation [F]) that activity, together with other useful information, to improve the use of maps on a mobile device. The recited interactive map displays multiple items of information: the current location of the mobile device (limitation [F]), the “action spot” graphical item (limitation [F]), the “activity level” of the action spot (limitations [G]–[H]), and the pop-up display of the posted video (limitation [I]). In this manner, the claim summarizes four different types of information on a touch screen display of the mobile device.

Petitioner addresses *Core Wireless* by arguing that “substitute claim 21 recites no additional ‘improvements’ in the display of information that were not already rejected by the District Court.” MTA Opp. 22. According to Petitioner, proposed substitute claim 21 “recites the same ‘generalized requirements that do not provide a ‘specific structure for depicting relevant information,’ but rather[, the claim recites] similar display [requirements] to those rejected in *Interval Licensing*, 896 F.3d at 1344–45 and its collected cases.” *Id.* (citing Ex. 2005, 39). Petitioner argues that the claim here is more similar to those found ineligible in *Trading Techs Int’l, Inc. v. IBG*

LLC, 921 F.3d 1084, 1090 (Fed. Cir. 2019). *Id.* at 23. Petitioner summarizes how the court summarized the technology of the *Trading Techs* claim: it involves an interface that presented information in a new and more efficient way and allowed a stock trader to quickly determine his or her relative position in the marketplace based on the display of the user's trades in a different color. *Id.*

We are not persuaded by Petitioner's arguments for two reasons. First, the analysis of the District Court is not applicable here because proposed substitute claim 21 includes new limitations that the court did not have the opportunity to address. Indeed, we note that Patent Owner proposed substitute claim 21 to address § 101 issues. *See* MTA 6. Second, *Trading Techs* is distinguishable because the Federal Circuit there was persuaded that the GUI would have been displayed on *any* generic display and the presented data was generic buy and sell data that already existed from a trade engine. *Trading Techs*, 921 F.3d at 1091, 1093. The claims of *Trading Techs* merely performed routine data collection, organization, and display. *Id.* at 1093. Proposed substitute claim 21, in contrast, provides for display in a particular "touch sensitive display," provides for selectability of graphical items signifying the action spots, and displays additional information on the map concerning the "action spot"—colorizing the activity level and providing the pop-up display to play a posted video from the "action spot." Proposed substitute claim 21, thus, seems to align better with the *Core Wireless* claim. For instance, accessing the information from a menu and the selectability of presented data in the *Core Wireless* claim is akin to the selectability of the graphical items from the screen to select any

particular “action spot.” *Core Wireless*, 880 F.3d at 1362. Further, the “pop-up display” is a particular type of presentation of the underlying video postings linked to the displayed “activity level” and “action spots,” a further distinction that under *Core Wireless* would go beyond the abstract idea of organizing human activity. Accordingly, we are not persuaded that Petitioner has shown that, under *Core Wireless*, proposed substitute claim 21 is not patent-eligible.

Third, Dr. McDaniel addresses the “activity level” limitation testifying that “[i]ntegration of the activity level into the interactive map through the intuitive mechanism of color and in the efficient manner of applying that color to the graphical item of the action spot further improves the user interface.” McDaniel 2d Decl. ¶ 160 (testifying also that “this approach effectively communicates additional relevant information to the user without utilizing additional screen space.”). Dr. Bhattacharjee addresses the “activity level” by testifying that the claim provides no detail as to how the activity level is calculated, and, therefore, such a limitation does not recite a technological implementation. Bhattacharjee 2d Decl. ¶ 103; *see also id.* ¶ 108 (offering Dr. McDaniels’ testimony that “measuring relative ‘levels’ of things was well-known”). We have addressed this limitation somewhat in our discussion of the *Core Wireless* case, insofar as the “activity level” colorized display adds further information in a summarized fashion on an interactive map. Although, by itself, the “activity level” determination is not recited in *technological* detail, its contribution to the claim is by way of the summarized information provided on the

selectable graphical item that is signified alongside the current location icon on the interactive map of the touch screen display.

Fourth, and lastly, Dr. McDaniel testifies that the pop-up display of the posted video “empowers the user to assess the nature of, and their corresponding interest in, the event occurring at the action spot.” McDaniel 2d Decl. ¶ 161 (testifying also that “this can all be done without flipping and cross-referencing between multiple sources and/or applications”).

Dr. Bhattacharjee testifies that displaying “pop-ups” was “well-known and generic in the art by August 2010.” Bhattacharjee 2d Decl. ¶ 110. The testimony of Dr. Bhattacharjee focuses on his opinions that pop-ups were known in the art (read here, disclosed in Eyal and Jaffe) and that the ’327 patent “is silent as to any new or advanced technical mechanism for processing posted video or displaying pop-up video.” *Id.* Here, too, we find that the inclusion of the pop-up display to view posted video is part and parcel of the items summarized on the screen that fall under the *Core Wireless* category of things that may improve the user interface by including in the display a more efficient way to access video content that is summarized as an “action spot” graphical item.

iv. Conclusion

Based on the above analysis of Step 2A, Prong 2 of the Guidance, we determine that Petitioner has not shown that proposed substitute claim 21 does not integrate the abstract idea into a practical application. Accordingly, we determine that Petitioner has not met its burden of showing that proposed substitute claim 21 is not patent-eligible under 35 U.S.C. § 101.

5. Enablement

Petitioner asserts that, “to the extent that Patent Owner contends proposed substitute claim 21 requires a large-scale implementation and associated network architecture, such is not enabled due to (1) the bandwidth limitations at that time (which Patent Owner’s expert has also conceded), and (2) the lack of any discussion in the specification on how to overcome these bandwidth limitations.” MTA Opp. 25. We find that this argument is not developed sufficiently to evaluate on the merits. Enablement is a requirement under 35 U.S.C. § 112(a) (or 35 U.S.C. § 112, first paragraph, pre-AIA). The invention that one skilled in the art must be enabled to make and use is that defined by the claim. However, it is not necessary to “enable one of ordinary skill in the art to make and use a perfected, commercially viable embodiment absent a claim limitation to that effect.” *CFMT, Inc. v. Yieldup Int’l Corp.*, 349 F.3d 1333, 1338 (Fed. Cir. 2003). Further, the inquiry for enablement is whether one reasonably skilled in the art could make or use the invention from the disclosures in the patent coupled with information known in the art without undue experimentation. *United States v. Telectronics, Inc.*, 857 F.2d 778, 785 (Fed. Cir. 1988).

Proposed substitute claim 21 is not directed to any particular network for carrying out the invention. *See generally* MTA, Appendix A. So an argument concerning the application of a “large-scale implementation and associated network architecture” is untethered to the claim. Further, Petitioner points to deposition testimony of Dr. McDaniel for the proposition that the ’327 patent does not disclose networks that can carry out the invention in a large-scale implementation. *See* MTA Opp. 25 (citing

Ex. 1024, 152:16–155:22). But Petitioner omitted other deposition testimony that tends to show the opposite, that the '327 patent discloses new types of networks in 2010 that were capable of higher bandwidths and, therefore, large-scale implementations capable of handling video postings. For instance, Dr. McDaniel testified that the '327 patent describes next generation networks “that would definitely support posting of video. Things like ultra mobile and WiMAX have—can have extremely high bit rates.”

Ex. 1024, 154:16–155:22. Accordingly, we are not persuaded by Petitioner’s arguments of non-enablement, premised on the assertion that the '327 patent omits any description of networks that can carry out the invention in higher bandwidth networks for large-scale implementation, even if such an implementation were required by the claims, which they do not.

Consequently, we determine that Petitioner has not demonstrated by a preponderance of the evidence that proposed substitute claim 21 is not enabled.

6. Conclusion

Having reviewed Petitioner’s Opposition to the Motion to Amend, Petitioner’s Reply to the Preliminary Guidance, and the cited evidence and references in the record, and in light of Patent Owner’s arguments in response, we determine that Petitioner has not met its burden of showing that the proposed substitute claim 21 would have been unpatentable. Thus, we *grant* Patent Owner’s Non-Contingent Motion to Amend.

V. CONCLUSION

In summary:

Claims	35 U.S.C. §	References	Claims Shown Unpatentable	Claims Not Shown Unpatentable
1–3, 8, 13–15	103	Lemmela, Crowley	1, 3, 8, 13–15	
10, 11	103	Lemmela, Crowley, Winkler	10, 11	
9, 20	103	Lemmela, Crowley, Waldman	9, 20	
1–3, 8, 10, 11, 13–15	103	Winkler, Altman		1, 3, 8, 10, 11, 13–15
Overall Outcome			1, 3, 8–11, 13–15, 20	

Motion to Amend Outcome	Claim(s)
Original Claim Cancelled by Amendment	2 ¹³
Substitute Claims Proposed in the Amendment	21
Substitute Claims: Motion to Amend Granted	21
Substitute Claims: Motion to Amend Denied	
Substitute Claims: Not Reached	

VI. ORDER

Accordingly, it is hereby:

ORDERED that claims 1, 3, 8–11, 13–15, and 20 of the '327 patent have been proven to be unpatentable;

¹³ Because Patent Owner's Motion to Amend was non-contingent on a finding of unpatentability and sought to replace original claim 2 with substitute claim 21, we consider original claim 2 cancelled by amendment.

FURTHER ORDERED that Patent Owner's Contingent Motion to Amend is *granted*;

FURTHER ORDERED that claim 2 is cancelled and replaced with proposed substitute claim 21; and

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.

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