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Paper 37
Entered: August 31, 2023

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SNAP INC.,
Petitioner,

v.

YOU MAP INC.,
Patent Owner.

IPR2022-00568
Patent 10,616,727 B2

Before KALYAN K. DESHPANDE, *Vice Chief Administrative Patent Judge*, PATRICK M. BOUCHER and JASON M. REPKO, *Administrative Patent Judges*.

REPKO, *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

Snap Inc. ("Petitioner") filed a petition requesting *inter partes* review of claims 1–20 of U.S. Patent No. 10,616,727 B2 (Ex. 1001, "the '727 patent"). Paper 2 ("Pet.", "Petition"). You Map Inc. ("Patent Owner") filed a Preliminary Response. Paper 9.

On September 2, 2022, we instituted an *inter partes* review of all challenged claims based on all grounds in the Petition. Paper 10 ("Inst. Dec."). Patent Owner filed a Response to the Petition. Paper 18 ("PO Resp."). Petitioner filed a Reply. Paper 22 ("Reply"). Patent Owner filed a Sur-reply. Paper 26 ("Sur-reply").

Patent Owner also filed a motion to amend and request for preliminary guidance. Paper 19 ("MTA"). Petitioner filed an opposition to the motion to amend. Paper 23 ("MTA Opp."). The Board issued preliminary guidance on the motion to amend. Paper 25 ("MTA PG"). Petitioner filed a Reply. Paper 27 ("MTA Reply"). Patent Owner filed a Sur-reply. Paper 29 ("MTA Sur-reply").

An oral hearing was held on June 5, 2023. A transcript of that hearing has been entered into the record. Paper 36.

We have jurisdiction under 35 U.S.C. § 6. This Final Written Decision is issued under 35 U.S.C. § 318(a). For the reasons that follow, Petitioner has shown by a preponderance of the evidence that claims 1–20 are unpatentable, and we grant Patent Owner's contingent motion to amend.

A. Related Matters

According to the parties, *You Map, Inc. v. Snap Inc.*, No. 1:20-cv-00162-CFC (Del.) is a related matter. Pet. x; Paper 6, 1 (Mandatory Notices).

B. The '727 Patent

The '727 patent relates to displaying social-network posts on a map. Ex. 1001, 3:32–41. To fit numerous posts on a mobile device's display, the disclosed system displays some posts more prominently than others. *Id.* at 3:42–45. For example, some posts may be larger or a different color than others. *Id.* at 3:52–58. Also, the system may aggregate multiple posts. *Id.* at 12:56–57.

Figure 3C, below, shows an example embodiment.

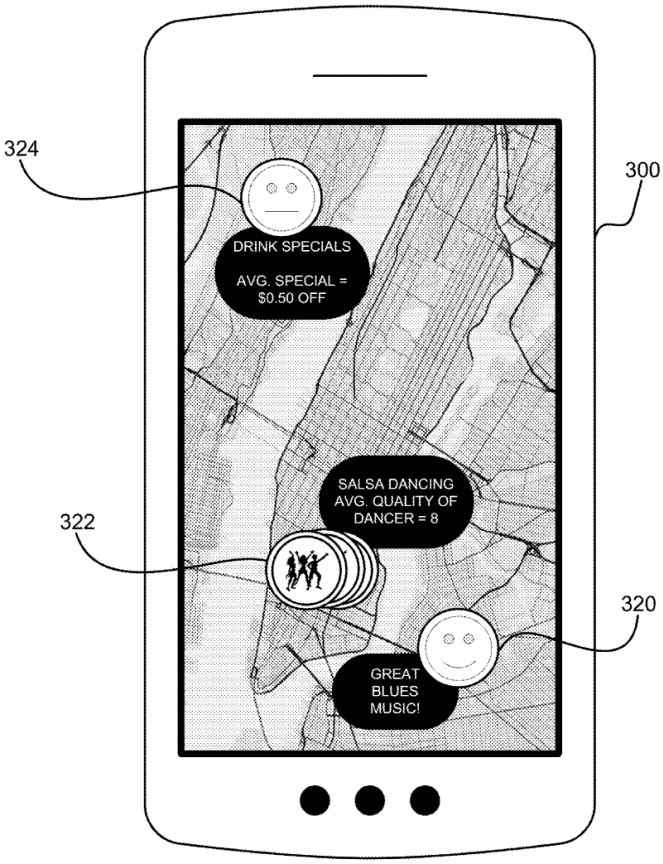

Figure 3C, above, shows client device 300 with symbols 320, 322, and 324 on a map. *Id.* at 11:23–28. Symbols 320, 322, and 324 correspond to social-media posts. *Id.* The symbols may represent an aggregate of multiple posts, and a post's text may be altered to create the displayed text. *Id.* at 11:23–31. The decision to display a post can be based on rankings associated with particular attributes. *Id.* at 11:41–47. For example, in the screen shown in Figure 3C, above, posts about drink specials, salsa dancing, and blues music are displayed, whereas those about Broadway shows are not. *Id.* at 11:47–51.

The system displays the posts in response to a request from a client device. *Id.* at 15:10–12; 16:6–22. The request may include information about the client device's display and its geographic location, among other things. *Id.* at 15:12–15. The system uses this information to filter recent social-media posts for display. *Id.* at 15:23–26.

C. Claims

Of the challenged claims, 1, 11, and 20 are independent. Claim 1 is reproduced below:

> 1. A system for providing location information on a social network, comprising:
>
> a computer processor; and
>
> a social mapping module executing on the computer processor and configured to enable the computer processor to:
>
> receive, from a client device, a request for one or more social media posts, wherein the request includes screen attribute information about a display of the client device, geographic location information, and an identification of a requesting account of the social network;
>
> identify a set of temporally recent social media posts based on the screen attribute information and the geographic location information;

apply, by the computer processor, two sets of grouping criteria to the set of social media posts to generate a suggested group, wherein:

the suggested group is a subset of the set of social media posts, and

applying the two sets of grouping criteria comprises:

generating a combined ranking based on:

ranking each social media post of the set of social media posts according to a first customized score for each social media post, wherein the first customized score is based on a first set of preference factors, corresponding to the requesting account, applied to a general score of each social media post, and

ranking each social media post of the set of social media posts according to a second customized score for each social media post, wherein the second customized score is based on a second set of preference factors, corresponding to the requesting account, applied to the general score of each social media post, and

selecting, based on the combined ranking, the subset of the set of social media posts for inclusion in the suggested group, wherein the selecting comprises excluding at least one social media post of the set of social media posts from inclusion in the suggested group based on the combined ranking; and

provide, in response to the request, the suggested group for display by the client device.

Ex. 1001, 21:39–22:17.

D. Evidence

Name	Reference	Exhibit No.
Feldman	US 2015/0334077 A1, published Nov. 19, 2015	1005
Jackson	US 8,606,792 B1, issued Dec. 10, 2013	1006
Rush	US 2016/0055250 A1, published Feb. 25, 2016	1007

In the Petition, Petitioner relied on the Declaration of David H. Williams. Ex. 1003 ("Williams Decl."). Petitioner submitted a second declaration with its Reply. Ex. 1027 ("Second Williams Decl."). Mr. Williams was cross-examined by Patent Owner, and a transcript of his deposition was entered into the record. Ex. 2004. Patent Owner submitted the declaration of Michael Shamos, Ph.D. Ex. 2003 ("Shamos Decl."). Dr. Shamos was cross-examined by Petitioner, and a transcript of his deposition was entered into the record. Ex. 1026.

E. Asserted Grounds

Petitioner challenges claims 1–20 on the following grounds. Pet. 1.

Claims Challenged	35 U.S.C. §	Reference(s)/Basis
1–11, 13–15, 17–20	103	Feldman, Jackson
12, 16	103	Feldman, Jackson, Rush

II. ANALYSIS

A. Level of Ordinary Skill in the Art

Petitioner asserts that a person of ordinary skill in the art "would have had a bachelor's degree in electrical engineering, computer science, or a related field, plus two years' work or research experience with location-based content delivery and/or visualization." Pet. 5 (citing Ex. 1003 ¶¶ 19–

22). Petitioner also asserts that "[m]ore education could substitute for experience and vice versa." *Id.*

Patent Owner does not contest Petitioner's proposed level of ordinary skill in the art. *See* PO Resp.; Sur-reply. Patent Owner's expert, Dr. Shamos, testifies that he "generally agree[s]" with Petitioner's proposed articulation, and provides substantially the same expression of the level of ordinary skill in the art. Shamos Decl. ¶¶ 30–31.

In this Decision, we apply Petitioner's proposed definition.

B. Claim Construction

We use the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. § 282(b), including construing the claim in accordance with the ordinary and customary meaning of the claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent. *See* 37 C.F.R. § 42.100(b); *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc).

Petitioner contends "[n]o claim term herein requires exact outer-boundary construction, because the prior art meets the claim terms under any reasonable interpretation." Pet. 6.

1. Screen Attribute Information

In our Institution Decision, we determined that "screen attribute information about the display," recited in independent claims 1, 11 and 20, encompasses areas of a map displayed on the display. Inst. Dec. 11. We invited further briefing on this issue. *Id.* Neither party provided such briefing. *See* PO Resp. 9–11; Reply. Rather than present additional arguments about this term, Patent Owner replaced the phrase "screen attribute information about" with a narrower limitation in its proposed

substitute claims as part of its contingent Motion to Amend. *See* MTA 27 (substitute claim 21), 31 (substitute claim 31), 34 (substituted claim 40).

In assessing Petitioner's challenges in this Decision, we are not persuaded to deviate from the same construction that we applied in the Institution Decision. Inst. Dec. 11. That construction is consistent with a disclosed embodiment that uses areas of a map as screen attribute information:

> For example, the social mapping module 106 may receive a request from the client device 300. The request may include screen attribute information about the display 305 of the client device. *For example,* the size of the display 305, the resolution of the display 305, *areas of a map displayed on the display 305*, etc.

Ex. 1001, 15:13–15 (emphasis added). We emphasize "For example" here because it indicates that "areas of a map" are screen attribute information. *Id.* Area is listed together with the device's size and resolution. *Id.*

Similarly, other parts of the '727 patent's written description make no distinction between physical attributes of the device itself and other parameters similar to area. For example, the '727 patent lists attributes such as "pan location" and "zoom level" alongside the screen's size and shape:

> In one or more embodiments, screen attributes of a client device may be determined. . . Screen attributes may include, but are not limited to: a size and shape of a screen, *a current zoom level, a pan location,* an availability of screen space, a viewing angle, an amount of transparency of a screen, and/or an amount of screen space.

Id. at 7:8–13 (emphasis added). According to the '727 patent, an area is an example of pan location:

> In one or more embodiments, transforming the visualization of content of a post dependent on a user's screen information can involve the following: a user's viewport or a user's desired

> viewpoint, a user's zoom level, *a user's pan location (e.g., an area where they have moved their view above),* and/or a user's screen dimensions.

Id. at 7:21–26 (emphasis added).

The '727 patent also shows that a map area can be used to determine what is shown on a display: one example of the system receives "a user's viewpoint which may correspond to a physical region on the map." *Id.* at 17:31–32. This "actual real-life piece of the map" can be a geographic region that falls within three or more geographic coordinates. *Id.* at 17:32–36. Thus, we determine that, in this embodiment, the area "defines, determines and/or specifies how content is displayed on the screen or display in response to the request" for at least the reason that the system uses the area to determine which posts fall within the region and which posts are then displayed on a map. *Id.* at 17:25–53.

Likewise, dependent claim 6, which incorporates all limitations of the independent claim, further recites "wherein the screen attribute information specifies a geographic map region displayed on the client device." *Id.* at 22:35–37.

Thus, "screen attribute information about the display," recited in independent claims 1, 11, and 20, encompasses areas of a map displayed on the display, and we so construe that phrase.

2. Customized Scores

Claim 1 recites two customized scores:

> ranking each social media post of the set of social media posts according to *a first customized score* for each social media post, wherein the first customized score is based on a first set of preference factors, corresponding to the requesting account, applied to a general score of each social media post, and

> ranking each social media post of the set of social media posts according to *a second customized score* for each social media post, wherein the second customized score is based on a second set of preference factors, corresponding to the requesting account, applied to the general score of each social media post.

Ex. 1001, 21:61–22:7 (emphases added). Independent claims 11 and 20 recite similar limitations. *See id.* at 23:14–27 (claim 11), *id.* at 24:36–49 (claim 20).

In Petitioner's view, the '727 patent describes multiple ways that the system calculates a customized score from preference factors applied to a general score: (1) it weights the general score and (2) it weights the general score's components. Pet. 30–31 (citing Ex. 1001, 15:63–66, 13:17–19, 17:9–24; Williams Decl. ¶ 122). According to Petitioner, scores composing the general score include the comment or vote score, and the system weights those scores based on user preferences to create a "relevancy score." *Id.* at 30 (citing Ex. 1001, 13:17–19; Williams Decl. ¶ 122); *id.* at 45 (citing Ex. 1001, 12:66–13:8; Williams Decl. ¶ 154).

Patent Owner argues that the relevancy score corresponds to an unclaimed embodiment. PO Resp. 10 (citing Pet. 3). According to Patent Owner, the '727 patent shows that the customized-score embodiments do not overlap with the relevancy-score embodiments. *Id.* at 11 (citing Ex. 1001, 12:1–5). In particular, Patent Owner argues that the recited customized score "is explicitly limited to the application of preference factors ***to*** a general score." *Id.* (emphasis in original). In Patent Owner's view, the recited customized score is unlike the relevancy or importance scores because the relevancy or importance scores are generated by aggregating various weighted values, instead of applying preference factors to a general score. *Id.* at 11–12 (citing Shamos Decl. ¶ 37); *see also* Sur-reply 14 (arguing that

"the Challenged Claims exclude from their scope customized scores that are not generated from a general score").

According to Patent Owner's proposed construction, "a 'customized score' is 'a score based on a set of preference factors, corresponding to the requesting account, that are applied to a general score of each social media post.'" PO Resp. 12 (citing Shamos Decl. ¶ 38).

Although Patent Owner appears to argue that applying the preference factors to a general score does not encompass weighting the general score's components (*see, e.g.*, *id.* at 10–12; Sur-reply 13–16), this is not reflected in Patent Owner's proposed construction (PO Resp. 12). Patent Owner's construction provides no limitation on how the preference factors are applied to a general score. *See id.* To the extent Patent Owner argues that the phrase "applied to," as recited in the claim, excludes such component-based weighting, we disagree.

Rather, the record better aligns with Petitioner's argument that "applied to" involves a linear combination of values, which could be the values of the general score's components. *See* Pet. 30–31. Petitioner's position is supported by the plain language of the claim, the '727 patent's discussion of weighted aggregation, and Mr. William's testimony—all of which indicate that weighting the component scores is encompassed by claim 1.

As for the plain language, the claim does not define how the factors are "applied to" the general score. Rather, the claim only recites that they are. In the context of the claim, the preference factors are applied to the general score. Patent Owner does not dispute this. PO Resp. 12. Claim 1 further recites that the customized score is based on the application of the preference factors to the general score. Ex. 1001, 23:14–27. We note that the

claim requires using two rankings, those recited in [1H1] and [1H2], to generate the combined ranking, which is then used for the recited selection. Beyond that, the claim does not specify how the two rankings are used or how the combined ranking must be generated. Thus, under the claim's plain language, the customized score can be used to rank the posts and is based on the general score. *Id.*

Likewise, the '727 patent describes a system that ranks post by their importance and relevancy scores. *See, e.g.*, *id.* at 8:24–31, 12:1–5, 13:9–16, 17:44–51. In particular, the system aggregates relevancy data to calculate an importance score. *Id.* at 8:51–53. The system calculates an importance score for each post. *Id.* at 17:44–45. The '727 patent describes, for example, that "posts may be plotted by relevancy (importance score order)." *Id.* at 8:24–31; *see also id.* at 12:1–5, 13:11–16, 17:49–51 (describing other uses for the scores).

The relevancy score is a weighted aggregate. *See id.* at 13:17–18. Although the claim recites "applied to" instead of, for example, "weighted by," both experts testify that applying factors to a score means that the score is a linear combination of the factors. For example, Mr. Williams testifies that applying the preference factors involves weighing the general score's components and combining the resulting values. Second Williams Decl. ¶ 23. Similarly, Dr. Shamos testifies that the preference factors are "applied" by using a linear-combination calculation:

> Q. You say "apply." And I see that the paragraph uses the word "apply" the preference factors. But is there anything in this paragraph that explains how to do that?
>
> A. Well, I mean, you practically read the entire paragraph into the record. Anybody knows how to apply weights to a vector in order to compute another quantity. And so I have these

> preference factors and weights, and I look to see if those preference factors are recognized in the general score. If so, I weight them and I perform a linear combination calculation. That's what weights mean.

Ex. 1026, 98:17–99:8.

This expert testimony about the phrase "applied to" is consistent with the '727 patent's use of that term. For example, in the paragraph describing the customized score, the '727 patent discusses weighting in the context of applying factors to a score:

> Such preference factors may be *applied to* the general score of a social media post to arrive at a customized score for the social media post. *In other words,* the preference factors may be used to determine a *weighted* version of the general score, resulting in the customized score that is specific to the particular.

Ex. 1001, 15:63–67 (emphasis added). The '727 patent also indicates that an unweighted general score lacks preference factors applied to it: "In the absence of a preference factor, the unweighted general score may be used." *Id.* at 15:66–67.

Patent Owner argues that there is no overlapping disclosure between the customized score and the relevancy- or importance-score embodiments in the '727 patent. PO Resp. 10–11 (citing Shamos Decl. ¶ 35). To support this argument, Patent Owner cites part of the '727 patent discussing the ranking and emphasizes the phrase "instead of":

> In one or more embodiments, ***instead of*** rankings corresponding with attributes corresponding to a post, or in combination with rankings corresponding to attributes associated with a post, in one or more embodiments a post itself may be based on a relevance number.

Ex. 1001, 12:1–5, *cited in* PO Resp. 10–11. The '727 patent here discusses a single embodiment. *See id.* The patent, however, explains that the disclosed

embodiments are non-limiting. *See id.* at 21:1–10. Also, the users can configure the map however they like, including explicitly defining preference factors used to score the posts. *Id.* at 14:30–31, 15:50–16:5. Thus, we disagree with Patent Owner that the relevancy score is limited to this single embodiment or must be used in the specific way that is described in that passage. *See* PO Resp. 10–11.

Overall, the '727 patent is more consistent with Mr. Williams's testimony (Williams Decl. ¶¶ 150–152; Second Williams Decl. ¶ 22) than Dr. Shamos's (Shamos Decl. ¶¶ 35–38). Mr. Williams testifies that a weighted aggregate of non-user-specific information is an example of the claimed "general score." Second Williams Decl. ¶ 22 (citing Ex. 1001, 13:17–19). The '727 patent supports this view. For example, the '727 patent explains, "Relevancy scores/cues may be a weighted aggregate comprising, without limitation: Comment Score, Vote Score, and/or Time Score." Ex. 1001, 13:17–19. The vote score can be weighted by how recently the votes took place, and the time score may be a number based on the post's age. *Id.* at 13:23–30. That is, these time-based weightings are not user specific. *See id.*

According to Mr. Williams, "A POSA would have understood that a way to create a ***customized*** weighted version of this general score is to weight [] one or more of the component scores by a customized weight based on user-specific preference factors." Second Williams Decl. ¶ 22 (emphasis in original). In his original Declaration, Mr. Williams explains how the '727 patent describes a system that generates a customized score:

> A POSA would have understood that weighting user comments based on social-network connection for certain component scores, such as the Comment Score, would be performed before the component scores are aggregated to generate a customized

> overall score, because the social-network connection may be relevant only to the Comment Score rather than to all of the components that are aggregated to generate the overall score (e.g., the "Time Score" [Ex. 1001, 13:17-19] would not be weighted by social-network connection).

Williams Decl. ¶ 152.

The '727 patent supports Mr. Williams's testimony. *See* Williams Decl. ¶ 152; Second Williams Decl. ¶ 22. The patent explains that a post's component scores can be made from "ancillary emotive post data." Ex. 1001, 17:1–11, *cited in* Williams Decl. ¶ 152. This ancillary emotive post data can be comments, up votes, down votes, among other things. *Id.* The system weighs the impact of each social-emotive data score and combines them to generate an overall score. *Id.* at 17:21–24, *cited in* Williams Decl. ¶ 151. The user's specific social-network connection can be used to weight each comment. *Id.* at 12:5–17. This is one way to create customized weighted version of the general score. *See id.*

As discussed below in § III.A.4 analyzing Patent Owner's Motion to Amend, the '727 patent describes how multiple customized scores are used to rank posts for multiple "channels," which are types of maps. *See, e.g.*, *id.* at 4:4–10, 4:64–5:27, 9:31–55; *see also* MTA 7 (citing Ex. 1002 ¶¶ 28, 93–95; Ex. 2005 ¶¶ 49–54, 86–89, 92, 146–150). For example, the '727 patent explains that a channel includes a set of posts having "a certain weight" based on "a user's preferences." Ex. 1001, 9:31–55. Multiple channels can be combined. *Id.* at 4:64–5:27 (describing three channels). One channel's posts may be displayed more prominently than another's based on a score. *Id.* at 4:4–10, 8:24–31. A preference factor used to score the posts for a channel may be explicitly defined by the user. *Id.* at 15:50–16:5. "Users may

configure their maps however they like." *Id.* at 14:30–31. In at least this way, the '727 patent describes two or more customized scores.

Although Patent Owner relied on the relevancy-score embodiments in its Motion to Amend, Patent Owner explains that "there is nothing inconsistent between the MTA citations and Patent Owner's argument on the merits for the simple reason that they are quite clearly arguments in the alternative," and "[t]he MTA is expressly contingent on the Board ultimately disagreeing with Patent Owner's arguments on the merits of the grounds in the Petition." Sur-reply 16–17. For the reasons discussed in this section, we disagree with Patent Owner's arguments on the merits. We, however, agree with Patent Owner's alternative arguments in its Motion to Amend. *See infra* § III.A.4.

In sum, Petitioner has shown that the '727 patent describes generating a customized score by weighting the general score's components. Pet. 43–44. We determine that Petitioner's position is adequately supported by the plain language of the claim, the '727 patent's discussion of weighted aggregation, and the expert testimony. Because Mr. Williams's testimony is better supported for all the reasons discussed above, we credit Mr. Williams (Williams Decl. ¶¶ 150–152; Second Williams Decl. ¶ 22) over Dr. Shamos (Shamos Decl. ¶¶ 35–38).

Thus, considering all the arguments and evidence, we determine that, under the correct construction, weighting the general score's components falls within the scope of the limitation "the first customized score is based on a first set of preference factors, corresponding to the requesting account, applied to a general score of each social media post" and the corresponding second customized score in claim 1 and similar limitations found in claims 11 and 20.

C. Obviousness over Feldman and Jackson

Petitioner asserts that claims 1–11, 13–15, and 17–20 are unpatentable as obvious over Feldman and Jackson. *See* Pet. 6–64.

1. Feldman (Ex. 1005)

Feldman relates to searching social-network posts within a specified map area. Ex. 1005 ¶ 13. Figure 3B, below, shows an example of Feldman's user interface. *Id.*, Fig. 3B.

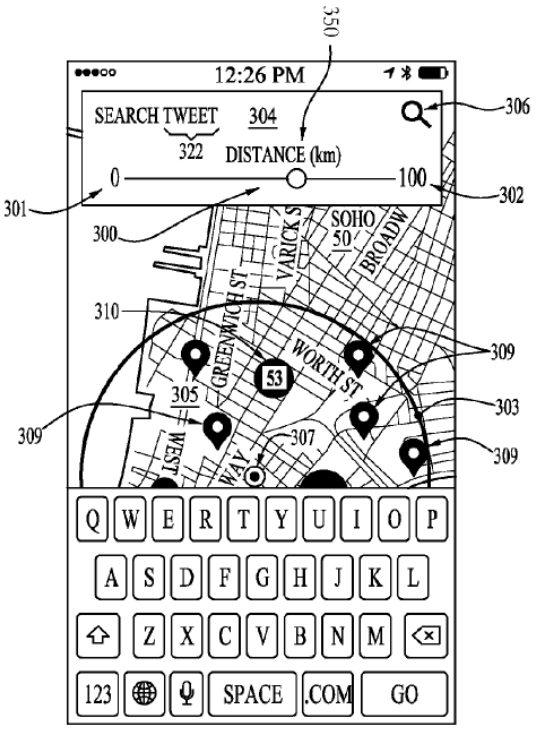

Fig. 3B

Figure 3B, above, shows a user interface displaying map 50 and search keyword 322. *Id.* ¶ 46. In the interface, slider 300 controls the size of perimeter 303 on the map. *Id.* Perimeter 303 encircles search area 305, which designates the area where posts can be found. *Id.* ¶¶ 46, 48, 50. In the example above, locations 309 within 303 indicate where information or metadata is posted. *Id.* ¶¶ 32, 54.

2. Jackson (Ex. 1006)

Jackson's system recommends posts to users of a micro-blogging service. Ex. 1006, 1:34–36. In a micro-blogging service, users submit short text or multimedia posts. *Id.* at 7:64–66. To receive new posts, other users typically must "follow" the author of the posts. *See id.* at 8:2–5. Jackson's system, though, recommends posts to users that do not follow the author—i.e., non-subscribers. *Id.* at 8:62–9:3. To determine whether to recommend a post to a non-subscriber, Jackson calculates a "global score" based on weighted factors. *Id.* at 9:17–28.

3. Claim 1

Petitioner asserts that its Feldman-Jackson combination teaches or suggests all limitations of claim 1. *See* Pet. 17–53. According to the Petition, it would have been obvious to incorporate Jackson's recommendation techniques in Feldman's system. *See, e.g.*, *id.* at 14.

a. System and Processor

Claim 1 recites, in part, "A system for providing location information on a social network, comprising: a computer processor." Ex. 1001, 21:39–41.

Petitioner asserts that Feldman's "geopost" is a social-media post with "information or metadata" that includes a location. Pet. 17 (citing Ex. 1005 ¶ 32; Williams Decl. ¶ 93). According to the Petition, Feldman's "map-related" system searches a social network for social posts within a specified area on a map, and "may respond to a user request with 'a plurality of geoposts' within an area specified by a map displayed on the user's device." *Id.* (citing Ex. 1005 ¶¶ 32, 82; Williams Decl. ¶ 93).

As for the processor, Petitioner asserts that "the server with 'precompiled executions' running 'in memory' has a computer processor

that executes the 'precompiled' software implementing the functionality of Feldman's 'map-related remark system with social geographic search.'" *Id.* at 18 (citing Williams Decl. ¶ 95). Alternatively, Petitioner asserts that the recited processor would have been obvious. *Id.* at 18–19 (citing Ex. 1005 ¶ 99; Williams Decl. ¶ 96).

Patent Owner does not present arguments that are specifically directed to Petitioner's arguments and evidence about this subject matter. *See* PO Resp.; Sur-reply.

From our review of the entire record, we determine that Petitioner's assertions about the system recited in the preamble and processor (Pet. 17–19) and the corresponding parts of the Williams Declaration (Williams Decl. ¶¶ 93, 95–96) are sufficiently supported. For example, the cited passages from Feldman describe "physical servers to provide precompiled executions." Ex. 1005 ¶ 99. Also, Feldman explains that "geopost" refers to posting information including location. *Id.* ¶ 32. Feldman's system displays these geoposts. *Id.* ¶ 82. Thus, we determine that Petitioner has sufficiently shown that Feldman teaches or suggests the preamble and recited processor, and we credit the Williams Declaration on this issue in reaching our conclusion. *See* Pet. 17–19; Williams Decl. ¶¶ 93, 95–96.

b. Screen Attribute Information

Claim 1 recites, in part, "a social mapping module executing on the computer processor and configured to enable the computer processor to: receive, from a client device, a request for one or more social media posts, wherein the request includes screen attribute information about a display of the client device . . . ." Ex. 1001, 21:42–50.

Petitioner asserts that, under the Feldman-Jackson combination, software provides social-network posts on a map display, which is the

recited "social mapping module." Pet. 20 (citing Williams Decl. ¶ 99). As for the module's receiving function, Petitioner asserts that Feldman's module receives search requests that include perimeter 303. *Id.* at 22. Petitioner asserts that Feldman's perimeter 303 is "screen attribute information" because "Feldman's perimeter defines areas 305 which are 'areas of a map displayed on the display.'" *Id.* (citing Ex. 1001, 15:12–15; Williams Decl. ¶ 104).

Feldman's Figure 6, below, shows a user interface illustrating perimeter 303.

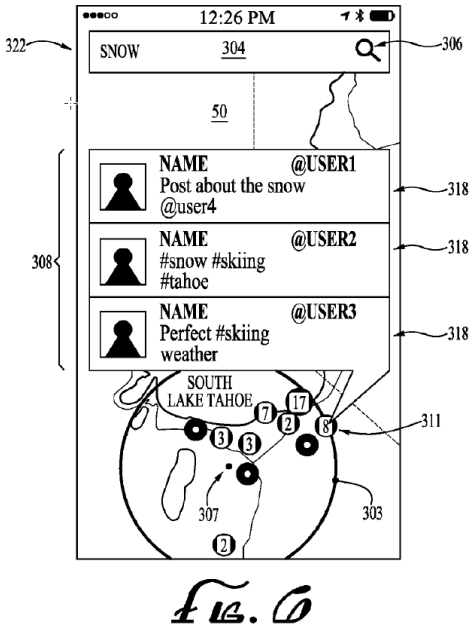

FIG. 6

Figure 6, above, shows perimeter 303 as a circle surrounding posts. Ex. 1005 ¶ 50. "Area 305 can limit the interactive areas by which posts can be discovered within the perimeter 303." *Id.*, *cited in* Pet. 22.

Patent Owner does not present arguments that are specifically directed to Petitioner's arguments and evidence about this subject matter. *See* PO Resp.; Sur-reply.

From our review of the entire record, we determine that Petitioner's assertions about this feature (Pet. 20–25) and the corresponding parts of the Williams Declaration (Williams Decl. ¶¶ 97–111) are sufficiently supported. In particular, Feldman's perimeter 303 defines an area where posts can be discovered. *See* Ex. 1005 ¶ 50, *cited in* Pet. 22. Although a part of the area is not displayed, perimeter 303 specifies at least some of the posts that will be displayed. *See id.* Thus, we determine that perimeter 303 specifies how Feldman's content—e.g., a discoverable post—is displayed on the screen or displayed in response to the user's search request. *See* Pet. 22.

Thus, Petitioner has sufficiently shown that the Feldman-Jackson combination teaches or suggests the module configured to receive a request that includes screen attribute information about a display of the client device. *See* Pet. 20–25. We credit the corresponding parts of the Williams Declaration. Williams Decl. ¶¶ 97–111.

c. Geographic Location Information

Claim 1 recites, in part, "receive, from a client device, a request for one or more social media posts, wherein the request includes . . . geographic location information . . . ." Ex. 1001, 21:45–50.

Petitioner asserts that Feldman's request includes geographic location information. Pet. 23. In particular, Petitioner asserts that search command 306 includes designated geolocation 307—a location on a map. *Id.* (citing Ex. 1005, ¶¶ 51, 62; Williams Decl. ¶ 106). Petitioner, alternatively, asserts that Feldman's designated geolocation 307 can be the user's GPS location, which can be used to search for posts. *Id.* at 23–24 (citing Ex. 1005 ¶¶ 39, 89; Williams Decl. ¶ 107). Petitioner asserts that it would have been obvious to incorporate the user's GPS location in posts-near-me feature in Jackson. *Id.* at 24 (citing Ex. 1006, 15:30–33; Williams Decl. ¶ 108; Ex. 1008 ¶ 26).

Patent Owner does not present arguments that are specifically directed to Petitioner's arguments and evidence about this subject matter. *See* PO Resp.; Sur-reply.

From our review of the entire record, we determine that Petitioner's assertions about this feature (Pet. 23–24) and the corresponding parts of the Williams Declaration (Williams Decl. ¶¶ 105–109) are sufficiently supported. For example, Feldman's Figure 3C shows perimeter 303B around designated geolocation 307 covering area 30 on map 50, as in Petitioner's first rationale. Ex. 1005 ¶ 62, *cited in* Pet. 23. "Search command 306 can send keyword input 322, and designated geolocation 307 by selecting to activate the search command 306." *Id.*

As for the second rationale, Feldman also discloses "[s]et published search location 806 can correspond to a user's mobile device GPS location." *Id.* ¶ 89, *cited in* Pet. 23–24. Similarly, Jackson's interface has a "Posts Near Me" tab that includes posts from nearby users. Ex. 1006, 15:30–33, *cited in* Pet. 24. Petitioner sufficiently explains why one of ordinary skill in the art would have combined these teachings. *See* Pet. 23–24.

Considering the entirety of the record, Petitioner provides articulated reasoning, supported by rational underpinnings, why one of ordinary skill in the art would have combined Jackson and Feldman. *See KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007).

Thus, Petitioner has sufficiently shown that the Feldman-Jackson combination teaches or suggests a request for one or more social media posts, that includes geographic location information, as claimed. *See* Pet. 23–24. We credit the corresponding parts of the Williams Declaration. Williams Decl. ¶¶ 105–109.

d. Identification

Claim 1 recites, in part, "receive, from a client device, a request for one or more social media posts, wherein the request includes . . . an identification of a requesting account of the social network." Ex. 1001, 21:45–50.

Petitioner asserts that Feldman's request also includes the recited identification of a requesting account. Pet. 25. Petitioner asserts that Feldman's user provides a "username, password, IP address, cookie, session ID, client ID, or any combination thereof" as authorization information to view particular posts. *Id.* (citing Ex. 1005 ¶¶ 77, 86; Williams Decl. ¶ 111). Petitioner also asserts that providing account identifying information would have been obvious "because this feature was well-known and taught by Jackson, which requires a user to log into the service to view posts, and enables Jackson's recommendation techniques to create a user-specific recommendation." *Id.* (citing Ex. 1006, 12:1–17, Williams Decl. ¶ 112).

Patent Owner does not present arguments that are specifically directed to Petitioner's arguments and evidence about this subject matter. *See* PO Resp.; Sur-reply.

From our review of the entire record, we determine that Petitioner's assertions about this feature (Pet. 25) and the corresponding parts of the Williams Declaration (Williams Decl. ¶¶ 110–112) are sufficiently supported. For example, Feldman discloses using "authentication inputs":

> Geopost 318 can be authorized to be published publicly or privately on social network corresponding to social network identifier 506. By way of non-limiting illustration, authentication inputs can be selected from: username, password, IP address, cookie, session ID, client ID, or any combination thereof, encrypted or non-encrypted. Providing a prebuilt application protocol can send authentication inputs to a selected or integrated

> third party social network hosted elsewhere, not running on the server, initially receiving inputs from the mobile client device.

Ex. 1005 ¶ 86, *cited in* Pet. 25. Similarly, Jackson teaches that a user must log into messaging interface 100 using a username and password. Ex. 1006, 12:1–17, *cited in* Pet. 25.

Thus, Petitioner has sufficiently shown that the Feldman-Jackson combination teaches or suggests a request for one or more social media posts, that includes an identification of a requesting account of the social network, as claimed. *See* Pet. 25. We credit the corresponding parts of the Williams Declaration. Williams Decl. ¶¶ 110–112.

e. Identify Social Media Posts

Claim 1 recites, in part, "identify a set of temporally recent social media posts based on the screen attribute information and the geographic location information." Ex. 1001, 21:51–53.

As discussed above, Petitioner asserts that Feldman's perimeter 303 corresponds to the recited screen attribute information and designated geolocation 307 corresponds to the recited geographic information. *Supra* §§ II.C.3.b & c. According to the Petition, Feldman's search request includes keyword input 322, geographic location (geolocation 307), and screen attribute information (perimeter 303). Pet. 25–26. Petitioner asserts that, based on the search request, the Feldman-Jackson combination performs geolocation-keyword searching of posts with "content related to the keyword(s) and posted within an area specified by the request's geographic location information." *Id.* at 26 (citing Williams Decl. ¶ 114). As for the recited "temporally recent" posts, Petitioner asserts that Jackson weights posts "by time so that only recent posts are displayed." *Id.* at 27 (citing Ex. 1006, 9:61–67, 15:30–33).

Patent Owner does not present arguments that are specifically directed to Petitioner's arguments and evidence about this subject matter. *See* PO Resp.; Sur-reply.

Petitioner's assertions about the temporally recent posts are sufficiently supported. *See* Pet. 25–27. For example, Feldman teaches posts displayed "in reverse-chronological order." Ex. 1005 ¶ 82, *cited in* Pet. 26. Also, Jackson teaches displaying "only recent posts." Ex. 1006, 15:30–33, *cited in* Pet. 27. Considering the entire record, we determine that Petitioner's articulated reasoning about combining these and the other cited teachings "to improve user experience" has rational underpinning and is sufficiently supported by the cited evidence. *See* Pet. 25–27. We credit the corresponding parts of the Williams Declaration. Williams Decl. ¶¶ 113–116.

f. Combined Ranking

The relevant part of claim 1 is reproduced below with Petitioner's labels:

> **[1E]** apply, by the computer processor, two sets of grouping criteria to the set of social media posts to generate a suggested group,
>
> **[1F]** the suggested group is a subset of the set of social media posts, and
>
> **[1G]** applying the two sets of grouping criteria comprises:
>
> **[1H]** generating a combined ranking based on:
>
> **[1H1]** ranking each social media post of the set of social media posts according to a first customized score for each social media post, wherein the first customized score is based on a first set of preference factors, corresponding to the requesting account, applied to a general score of each social media post, and

> **[1H2]** ranking each social media post of the set of social media posts according to a second customized score for each social media post, wherein the second customized score is based on a second set of preference factors, corresponding to the requesting account, applied to the general score of each social media post,
>
> **[1I]** selecting, based on the combined ranking, the subset of the set of social media posts for inclusion in the suggested group, wherein the selecting comprises excluding at least one social media post of the set of social media posts from inclusion in the suggested group based on the combined ranking.

Ex. 1001, 21:54–22:14 (reformatted with Petitioner's labels); *see also* Pet. 78–79 (reproducing claim 1 with labels).

We note that the claim requires using two rankings, those recited in [1H1] and [1H2], to generate the combined ranking, which is then used for the recited selection. Beyond that, the claim does not specify how the two rankings are used or how the combined ranking must be generated. *See supra* § II.B.

To address [1H1] and [1H2], the Petition offers two alternative rationales: (1) weighting a general score by the preference factors and (2) weighting the general score's components by the preference factors. Pet. 30–31 (citing Ex. 1001, 12:1–17, 12:66–13:8, 13:17–19, 15:63–66, 16:6–13, 17:9–24; Williams Decl. ¶¶ 122, 123).

i. First Rationale: Jackson's Weighted Global Score

Petitioner asserts that Jackson's "global score" corresponds to the recited "general score." *Id.* at 31–32. Jackson's post-recommendation system assigns a global score to every post.[1] Ex. 1006, 9:19–20. The basis for

[1] Patent Owner does not dispute that claimed general score covers Jackson's global score. *See* PO Resp.; Sur-reply. On this point, we agree with the

Petitioner's first rationale is Jackson's weighting of a global score by user-specific preference factors. Pet. 31–43. Jackson's preference factors include social-network or geographic distance between a user and the post's author, among other things. *See id.*

Petitioner asserts that the Feldman-Jackson combination meets the two recited ranking steps [1H1] and [1H2] because it ranks posts by customized scores, which are "based on any two (or more) of social-network distance, geographic distance, and various other preference factors that Jackson describes." *Id.* at 42. Petitioner asserts that the same technique for weighting a post's global score by social-network distance would have been used to generate modified global scores from the other preference factors. *Id.* at 41 (citing Williams Decl. ¶¶ 144). According to the Petition, Jackson's system may use any combination of weighting criteria together. *Id.* (citing Williams Decl. ¶¶ 147–149).

Patent Owner argues that the Feldman-Jackson combination does not generate "two separate weightings of the same general score," as required by the claim, nor does it assign "two distinct customized scores to a particular post," for example. PO Resp. 16–18; Sur-reply 2–3. Patent Owner argues that Mr. Williams testified that Jackson's weighted score satisfied "either one" of the rankings in [1H1] and [1H2]—not that Jackson teaches or suggests two distinct rankings. Sur-reply 8 (citing Williams Decl. ¶¶ 128, 130, 138, 145). In Patent Owner's view, Petitioner's analysis amounts to "conclusory hand-waiving to cover the gaps in Jackson's disclosure," lacking any independent evidence. PO Resp. 18 (citing Pet. 42; Williams

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Petition's analysis, and credit the Williams declaration. *See* Pet. 31–32; Williams Decl. ¶ 125.

Decl. ¶ 147). According to Patent Owner, Jackson's Figures 4A and 4B do not support Petitioner's arguments that a person of ordinary skill in the art would have generated two scores and combined them. Sur-reply 5–6, 12.

We disagree with Patent Owner. The Petition explains how Jackson ranks a post using at least two criteria, e.g., social-network distance, geographic distance, and the other criteria shown in Figure 4A, corresponding to the claimed preference factors. Pet. 42. And the Petition explains that these criteria are applied to Jackson's global score to generate several distinct, customized scores. *See id.* at 31–43.

Specifically, to address the first preference factor and customized score, Petitioner explains how Jackson applies a social-network distance to the global score. *Id.* at 32 (citing Ex. 1006, 9:25–53; Williams Decl. ¶¶ 126–127). Jackson's social-network distance is a measure of relatedness between the user and the post's author on a social network. Ex. 1006, 9:25–53, 20:36–50, 20:64–21:29; Fig. 6A, *cited in* Pet. 32–33. Petitioner explains that Jackson weights a global score by the social-network distance, which teaches a customized score applied to a general score of each post, as recited in [1H1] and [1H2]. Pet. 33. For example, "a particular post's global score . . . is multiplied by, divided by, or summed with a distance between" a user and the post's author. Ex. 1006, 9:54–67. We agree with the Petition's analysis here, which is largely undisputed, and credit the corresponding part of the Williams declaration. *See* Pet. 32–34; Williams Decl. ¶¶ 126–127.

To address the second preference factor and customized scores, Petitioner relies on Jackson's geographic distance—that is, the distance between the user requesting the post and the post's location. *See* Pet. 34–38. Petitioner asserts that Jackson uses geographic distance to score a post and relies on the Williams Declaration to explain that it would have been

obvious and conventional to use the same technique as described in connection with the social-network distance ranking. *Id.* at 34–36 (citing Williams Decl. ¶¶ 131–133; Ex. 1006, Fig. 4A, 16:23–25, 58–60). Mr. Williams explains that "Jackson refers to the resulting user specific score for the post as a 'modified score,' 'personal score,' or just the post's 'score.'" Williams Decl. ¶ 77 (citing Ex. 1006, 9:54–67, 10:15–31, 16:46–50, 21:60–23:3).

Here, the Williams Declaration explains how one of ordinary skill in the art would have understood that Jackson's teachings apply across different embodiments. *See id.* That is, Jackson explicitly provides the calculation for the social-network distance embodiment (Ex. 1006, 9:54–67), but to the extent that Jackson omits those details from its description of other embodiments, the Williams Declaration explains why one of ordinary skill in the art would have known that the same principles apply (*see* Williams Decl. ¶¶ 131–137).

Also, in the part of Jackson cited by Mr. Williams, "a score for a post (e.g., a global score for the post) is modified to identify a personal score for an individual user based on a distance between the individual user and an author of the post." Ex. 1006, 21:60–63, *cited in* Williams Decl. ¶ 77, Pet. 37, 39, 43. In Jackson's example, "the personal score of Mary's post for the Pizza Store may be 24 (post score)*90 (distance between Pizza Store and Mary)=2,160." *Id.* at 21:66–22:1, *cited in* Williams Decl. ¶ 77, Pet. 37, 39. Because it is at least consistent with this part of Jackson (Ex. 1006, 21:60–22:5), we credit the Williams Declaration analysis of Jackson's geographic distance. Williams Decl. ¶¶ 77, 131–133.

Petitioner also identifies other preference factors that generate customized scores. Pet. 38–42. For example, Petitioner argues that Jackson

identifies posts containing words that match a user's search-engine queries. *Id.* at 39 (Ex. 1006, 4:22–40; Williams Decl. ¶ 139). Petitioner relies on Figure 4A to show that Jackson's system considers several user-specific criteria when recommending a post. *See id.* at 39–41 (citing Ex. 1006, 17:14–17, 19–23, 56–67; 16:26–39). Indeed, other parts of Jackson's disclosure are consistent with this view. For example, Jackson states that a post can be "recommended for a variety of reasons." Ex. 1006, 17:54, *quoted in* Pet. 42; *see also* Williams Decl. ¶ 147 (analyzing how Jackson uses a combination of criteria). These other reasons also meet the second preferences factor and customized scores limitations because Petitioner has shown that one would have used the same technique as described in connection with the social-network distance ranking to apply Jackson's other user-specific criteria. *See* Pet. 34–36, 38–42.

Because Petitioner has identified social-network distance (Pet. 32–34), geographic distance (*id.* at 34–36), and the other factors shown in Jackson's Figure 4A (*id.* at 38–42), we disagree with Patent Owner's argument that the Feldman-Jackson combination does not generate two customized scores in the same process, as required by the claim. PO Resp. 16–18; Sur-reply 2–3.

Patent Owner argues that Petitioner does not identify where Jackson discloses a second separate weighting of the global score or combined score from such a second weighting. PO Resp. 18–19 (citing Pet. 30–31; Shamos Decl. ¶¶ 79–81). Patent Owner argues that Petitioner does not adequately explain what it means to use the multiple weighting criteria together. Sur-reply 11–12 (citing Reply 8, 11, 12).

In Patent Owner's view, Petitioner relies on impermissible hindsight and uses the '727 patent's specification as the basis for its analysis of the

weightings. *Id.* at 18–19 (citing Pet. 30–31; Ex. 1001, claim 1, 15:50–67; Shamos Decl. ¶¶ 52, 54); *see also id.* at 13–14 (arguing the Petition lacks some rational underpinning for the obviousness conclusions regarding [1H1] and [1H2]) (citing Pet. 14–15); Sur-reply 7, 12. Patent Owner characterizes the Williams Declaration as conclusory and lacking any reason for weighting the same global score twice. PO Resp. 18–19 (citing Williams Decl. ¶¶ 148–149); Sur-reply 5–7 (citing Reply 8). Patent Owner argues that the Williams Declaration "is a verbatim copy of the Petition" and, during his deposition, Mr. Williams could not identify any evidence to support his opinions. PO Resp. 20 (citing Pet 42–43; Williams Decl. ¶¶ 147–148; Ex. 2004, 83:5–88:14); Sur-reply 7.

We disagree with Patent Owner's characterization of the Williams Declaration and the Petition's reliance on it. *See* PO Resp. 13–14, 18–20; Sur-reply 5–7, 12. Petitioner cites the Williams Declaration as evidence to support its arguments. The similarity between the Petition and the Declaration is the result of the Petition citing Mr. Williams's explanation without any deviation from the matters to which he testifies. Thus, it is unremarkable that the Petition would repeat some parts of Mr. Williams's Declaration.

Even so, the critical inquiry here is whether the Declaration is adequately supported. We find that Mr. William's declaration is adequately supported. This is not case where an expert "does not disclose the underlying facts or data on which the opinion is based." *See* 37 C.F.R. § 42.65(a). Rather, Mr. Williams adequately supports his testimony about the second preference factor with reasoning based on Jackson's teachings about how the social-network distance is used to weight the global score. *See, e.g.*, Williams Decl. ¶ 133 (citing Ex. 1006, Fig. 4A, 16:23–25, 58–60).

For instance, Mr. Williams explains how any combination of weighting criteria can be used together. *Id.* ¶¶ 147–149 (citing Ex. 1006, 3:57–44:22, 5:53–58, 9:54–67, 13:17–22, 17:47–67). Mr. Williams's analysis relies on Jackson's discussion of using multiple factors to score a post. Ex. 1006, 17:47–55, *cited in* Williams Decl. ¶ 147; *see also* Pet. 42–43; Reply 9. Mr. Williams also cites Jackson's discussion of how social-network distance and geographic distance can be used together. Williams Decl. ¶ 147 (citing Ex. 1006, 3:57–4:22).

We agree with Petitioner that Jackson adequately supports this part of Mr. Williams's analysis. Reply 7–9. Specifically, Jackson discloses that a determination may use social-network distance to "modify the criteria" that it uses to provide posts to users. Ex. 1006, 3:66–4:1, *cited in* Williams Decl. ¶ 147. Jackson further explains how geographic distance can be used in addition to other criteria: "Transmitting the post to the second computing device may be dependent upon determining that the criteria is met *and* determining that the posting location is within the threshold distance." *Id.* at 4:19–22 (emphasis added), *cited in* Williams Decl. ¶ 147. This is consistent with Jackson's teaching that a post may be recommended based on several factors and for several reasons. *Id.* at 17:47–67, *cited in* Williams Decl. ¶ 147.

Also, Jackson explains how the global score, which Petitioner mapped to the recited "general score," is used to generate a post's score: "[A] particular post's global score . . . is multiplied by, divided by, or summed with a distance between" a user and the post's author. *Id.* at 9:54–67, *cited in* Williams Decl. ¶ 148. Jackson weights a post's global score against a position of the posts author in a social graph. *Id.* at 9:25–53. Mr. Williams testifies that it is obvious and conventional to generate the modified scores

based on any other criteria in the same way as the social-network distance embodiment. Williams Decl. ¶ 144. This is supported by Jackson. In another example cited by Petitioner, Jackson multiplies a post's global score by a geographic distance to generate a personal score. *Id.* at 21:60–22:5, *cited in* Pet. 37, 39, 43. Thus, Petitioner has shown Jackson teaches or suggests applying two different sets of preference factors to a post's global score. Pet. 41 (citing Williams Decl. ¶ 144).

We disagree with Patent Owner's argument that neither Petitioner nor Mr. Williams ties Jackson's disclosure to the claim terms. PO Resp. 18 (citing Shamos Decl. ¶ 80). Rather, Mr. Williams explains that Jackson teaches the claimed ranking because Jackson uses multiple criteria to form its rankings. Williams Decl. ¶¶ 148–149 (citing Ex. 1006, 5:53–58; 9:54–67; 13:17–22). In the cited paragraph, Jackson discusses ranking based on scores of the posts and displaying them in a ranked order. Ex. 1006, 5:53–58. And the Petition clearly identifies how the combined ranking and customized scores correspond to the claimed features: the Feldman-Jackson combination meets [1H1] and [1H2] by ranking according to multiple preference factors (Pet. 42), and those rankings are used together to generate the "combined ranking" in [1H] (*id.* at 43).

Thus, we credit the Williams Declaration (Williams Decl. ¶¶ 148–149) over the Shamos Declaration (Shamos Decl. ¶¶ 52, 54, 74–75, 77, 78) on differences between Jackson and the claimed customized scores because the Williams Declaration is more consistent with Jackson's explanation of how multiple weighting criteria are used, how Jackson ranks the post's scores, and how a particular post's global score is used to generate the post's score (*see, e.g.*, Ex. 1006, 5:53–58; 9:54–67; 13:17–22).

Under the first rationale alone, Petitioner has shown that the Feldman-Jackson combination teaches or suggests the limitations recited in [1E] through [1H], including [1H1] and [1H2]. *See* Ex. 1001, 21:54–22:8.

ii. Second Rationale: Jackson's Weighted Signals

Petitioner's second rationale focuses on Jackson's signals: "An alternative way the Feldman/Jackson Combination meets elements [1H], [1H1], and [1H2] is by weighting the 'signals' used to create a post's overall score." Pet. 43 (citing Williams Decl. ¶ 150). According to the Petition, "weighting the signals used to create the scores creates customized signals based on social-network distance, geographic distance, and shared interests, any two of which when used together generate a 'combined ranking' as [1H] recites." *Id.* at 51. As with the first rationale, Petitioner asserts that, under the second rationale, "[t]he obvious way to implement Jackson's teaching that multiple weighting criteria can be used together would have been to combine rankings based on those criteria in determining which posts to recommend to the user, meeting [1H]." *Id.* at 52.

This rationale is not just an independent basis for showing that the subject matter in [1H] would have been obvious, but it is also used in combination with the first rationale because Petitioner asserts that "Jackson also teaches that weighting of the signals *can be used with* weighting of its 'global score.'" *Id.* (citing Williams Decl. ¶ 170; Ex. 1006, 9:50–51, 22:63–23:3) (emphasis added).

Patent Owner acknowledges that Jackson generates a personal score in two ways: from the global score or the individual inputs. PO Resp. 15–16 (citing Ex. 1006, 10:32–39, 22:63–23:3, 28:3–11); *see also id.* at 5–7 (discussing Petitioner's two rationales); Sur-reply 2–4. Patent Owner, though, argues that the claimed "customized score" is not analogous to the

personal score generated from individualized inputs because that score is not generated from the global score. PO Resp. 15–16 (citing Shamos Decl. ¶ 68). In Patent Owner's view, "Jackson is explicit that the 'personal score' is *not* generated from the global score but is rather a new score generated using individualized inputs." *Id.* at 15 (citing Ex. 1006, 10:32–39; Shamos Decl. ¶ 68); Sur-reply 4. According to Patent Owner, "Jackson explicitly and consistently maintains a distinction between modifying a previously generated global score and generating a personal score by individually weighting inputs for a particular user." PO Resp. 15 (citing Ex. 1006, 22:63–23:3; 28:3–11).

For the reasons discussed in Section II.B.2 on claim construction above, we disagree with Patent Owner's argument that Jackson's weighting of the individual signals does not fall within the scope of the claim. In particular, considering all the arguments and evidence, we determine that, under the correct construction, weighting the general score's components falls within the scope of the limitation "the first customized score is based on a first set of preference factors, corresponding to the requesting account, applied to a general score of each social media post" and the corresponding second customized score. *See supra* § II.B.2.

Petitioner has shown that Jackson meets the claim limitations under the proper construction. In the second rationale, Petitioner asserts that Jackson weights signals based on multiple user-specific factors to make a "personal score" for the user. Pet. 45.

We agree that Jackson's signals are like the component scores in the '727 patent, which fall within the scope of claim 1. *See id.* (citing Ex. 1001, 12:66–13:8). Specifically, Jackson's signals are associated with posts. *See* Ex. 1006, 18:42–44. For example, a post can have signals based on

comments or likes. *Id.* at 18:51–62. And global scores can be based on the post's signals. *Id.* at 18:40–44.

Like the scores in the '727 patent, Jackson weights component scores—that is, the signals that make up the global score. *Id.* at 10:15–31; Pet. 45. Those weights can be based on user-specific factors to customize the score. *See* Ex. 1006, 22:16–19 (describing a personal score based on distance). On this point, we credit Mr. Williams's analysis of the '727 patent's scores and Jackson's signals. *See* Williams Decl. ¶¶ 151–153.

As recited in [1H1] and [1H2], Petitioner has shown that Jackson teaches or suggests more than one ranking, customized score, and set of preference factors applied to a general score of each social media post. *See* Pet. 45–52. First, Petitioner shows that Jackson's customized scores are based on social-network distance. *Id.* at 45–47 (Ex. 1006, 10:15–39, 12:59–62, 13:17–19, 16:23–25, 16:58–60, 22:4–5, 22:21–22, 22:31–41, Fig. 4A; Williams Decl. ¶¶ 155–158). Second, Petitioner shows that Jackson's customized scores are based on a shared location. *Id.* at 47–49 (Ex. 1006, 16:40–66, 17:8–14, 17:56–59, Fig. 4A; Williams Decl. ¶¶ 159–163). Third, Petitioner shows that Jackson's customized scores are based on a shared interest. *Id.* at 49–51 (Ex. 1006, 4:22–40, 16:40–65, 17:56–59, 17:27–33: Williams Decl. ¶¶ 164–167).

As with the weighted global score in the first rationale, Petitioner has shown that Jackson aggregates the customized scores to generate a combined ranking, as recited. *Id.* at 51–52 (citing Williams Decl. ¶¶ 168–171). In particular, Jackson teaches that "[a]ny combination of the signals" can be used to determine a post's score. Ex. 1006, 18:48–49. According to Jackson, the signals may be based on "multiple different combinations of identified statistical information that relates to" post content (signal 512), an

author's reputation (signal 514), comments (signal 516), and likes (signal 518). *Id.* at 18:51–19:42. "Statistical data can be stored in a user statistics repository 542 and an activity statistics repository 520." *Id.* at 18:44–46. Jackson's recommendation system 522 makes a decision based on the weighted global score. *Id.* at 19:50–61, 22:63–23:3, *cited in* Pet. 52. We credit Mr. Williams's analysis of the aggregation of the customized score to generate a combined ranking because it is consistent with Jackson. Williams Decl. ¶¶ 155–167.

Thus, under the second rationale alone or in combination with the first rationale, Petitioner has shown that the Feldman-Jackson combination teaches or suggests the limitations recited in [1E] through [1H], including [1H1] and [1H2]. *See* Ex. 1001, 21:54–22:8.

iii. Selecting the subset of posts [1I]

Limitation [1I] of claim 1 recites, "selecting, based on the combined ranking, the subset of the set of social media posts for inclusion in the suggested group, wherein the selecting comprises excluding at least one social media post of the set of social media posts from inclusion in the suggested group based on the combined ranking." *Id.* at 22:8–15.

Apart from the arguments discussed in connection with [1H] (*supra* §§ II.C.3.f.i & ii), Patent Owner does not present arguments that are specifically directed to Petitioner's arguments and evidence about this subject matter. *See* PO Resp.; Sur-reply.

With respect to [1I], Petitioner asserts that the Feldman-Jackson combination uses Jackson's recommendation techniques discussed in connection with [1H]. *See supra* §§ II.C.3.f.i & ii. In those techniques, Jackson determines whether to recommend post by comparing the modified score or personal score to a threshold. *See* Ex. 1006, 3:57–61, 9:61–67,

19:54–61, 22:4–15. For the reasons discussed in §§ II.C.3.f.i & ii, we determine that Petitioner has shown the selecting step recited in [1I]. We credit Mr. Williams's analysis in reaching our conclusion because it is consistent with Jackson's teachings. *See* Williams Decl. ¶ 173.

iv. Conclusion

Thus, under the second rationale alone or in combination with the first rationale, Petitioner has shown that the Feldman-Jackson combination teaches or suggests the limitations to the combined ranking. *See* Ex. 1001, 21:54–22:14.

g. Provide Suggested Group

Claim 1 recites, in part, "provide, in response to the request, the suggested group for display by the client device." *Id.* at 22:15–16.

Petitioner asserts that both Feldman and Jackson disclose this limitation. Pet. 53–54 (citing Ex. 1003 ¶¶ 174; Ex. 1005 ¶¶ 49, 82, 91; Ex. 1006, 6:32–35).

Patent Owner does not present arguments that are specifically directed to Petitioner's arguments and evidence about this subject matter. *See* PO Resp.; Sur-reply.

Petitioner's assertions about this limitation (Pet. 53–54) and the corresponding parts of the Williams Declaration (Williams Decl. ¶ 174) are sufficiently supported. For example, Feldman's "user can search for 'snow' as a possible search term 322 in the geosearch results 308 which can be a plurality of geoposts within the specified area circumscribed by perimeter 303." Ex. 1005 ¶ 82, *quoted in* Pet. 54. Similarly, Jackson's "recommended posts may be seamlessly integrated into a stream of posts that are provided for display to the user." Ex. 1006, 6:32–35, *quoted in* Pet. 54. We credit the corresponding parts of the Williams Declaration. Williams Decl. ¶ 174.

h. Conclusion

Thus, Petitioner has established that the subject matter recited in independent claim 1 would have been obvious over Feldman and Jackson.

4. Remaining Independent Claims

Claims 11 and 20 recite similar limitations to those in claim 1. Relying in part on the analysis of claim 1, Petitioner analyzes the other independent claims in view of Feldman and Jackson. Pet. 63. According to Petitioner, "[o]ther than being directed to a method rather than a system" independent claim 11 is "substantially identical" to claim 1 and is "met by the Feldman/Jackson Combination for the same reasons (where the method is met by the functions the system performs)." *Id.* Likewise, Petitioner argues that the processor recited in claim 20 "performs the same functionality as claim 1 ([1C]-[1J]), and is met by the Feldman/Jackson Combination for the reasons discussed" with respect to claim 1. *Id.* at 64. Petitioner asserts that the Feldman-Jackson combination teaches the "non-transitory computer-readable storage medium comprising a plurality of instructions" recited in the preamble. *Id.* (citing Ex. 1005 ¶ 99, Williams Decl. ¶ 200).

Patent Owner does not present separate arguments specific to the subject matter recited in claims 11 and 20. *See* PO Resp.; Sur-reply.

We have reviewed Petitioner's arguments and evidence for claims 11 and 20. *See* Pet. 63–64. For the reasons discussed in Section II.C.3 addressing claim 1 and our review of the arguments and evidence directed to subject matter not found in claim 1 that are specific to these claims, we determine that Petitioner has established by a preponderance of the evidence that independent claims 11 and 20 would have been obvious over Feldman and Jackson. *See id.*

5. Dependent Claims

We have reviewed Petitioner's arguments and evidence for the dependent claims. *Id.* at 54–63. Patent Owner does not present separate arguments specific to the subject matter recited in claims 2–10, 13–15, and 17–19. *See* PO Resp.; Sur-reply. For the reasons discussed in Section II.C.3 addressing claim 1 and our review of the arguments and evidence directed to subject matter not found in claim 1 that are specific to the dependent claims, we determine that Petitioner has established that claims 2–10, 13–15, and 17–19 would have been obvious over Feldman and Jackson. Pet. 54–63.

As for claims 4 and 14, Petitioner asserts that claim 1 recites a "first" and "second set of preference factors," and claim 4, which depends from claim 1, recites "the set of preference factors" —i.e., one set—"are selected based on past behavior of the requesting account" without indicating which set in claim 1 is referenced. Pet. 55. Petitioner asserts that the same reasoning applies to claim 14, which depends from claim 11. *Id.* at 63. Thus, the set recited in claims 4 and 14 could refer to either the first or second set.

We determine that, under either interpretation of claims 4 and 14, Petitioner's reasoning is sufficient because Petitioner has shown several factors that are based on past behavior: social-network distance, geographic distance, generating content, viewing content, submitting search queries, commenting, liking, replying, among other factors. *See* Pet. 56; *supra* § II.C.3 (explaining that Jackson teaches the preference factors).

D. Obviousness over Feldman, Jackson, and Rush

1. Rush (Ex. 1007)

Rush relates to "generating real-time relevancy scores for social media posts." Ex. 1007 ¶ 2. In particular, by "weighing important variables and then automatically ranking posts along those variables in real-time,"

Rush enables a user "to identify relevant social media posts with which to engage through social media." *Id.* ¶ 19.

2. Claim 12

Claim 12 recites, "The method of claim 11, wherein the set of temporally recent social media posts are removed from the suggested group for display based at least in part on a closing time of a business corresponding to the social media posts." Ex. 1001, 23:36–39.

Petitioner asserts that "Rush teaches weighting and filtering posts based on distance of 'the post 120' or the 'consumer 310 who made the post 120' from 'specific places (e.g. "nearest retailer"), and the availability status (open, closed) of the specific places.'" Pet. 68 (citing Ex. 1007 ¶ 65; Williams Decl. ¶ 29); *see also id.* at 72. According to Petitioner, a person of ordinary skill in the art "would have understood that 'availability status' changes from 'open' to 'closed' based on closing time of that 'specific place[].'" *Id.*

Petitioner asserts that one of ordinary skill in the art would have been motivated to add Rush's criteria to the criteria used to weight social-media posts in the Feldman-Jackson combination. *Id.* at 69–71 (citing Williams Decl. ¶ 211). According to Petitioner, this combination "allows the user to be presented only with posts about locations that are currently open," and "posts about locations that are closed are removed from the set of temporally recent posts to which other criteria." *Id.* at 72–73 (citing Williams Decl. ¶ 220).

Patent Owner does not present separate arguments specific to Petitioner's challenge to claim 12. *See* PO Resp.; Sur-reply.

We have reviewed Petitioner's arguments and evidence for claim 12. Pet. 65–73. We determine that Petitioner's showing is sufficient. *Id.* For

example, Rush calculates location sub-variables 363, including "the availability status (open, closed) of the specific places." Ex. 1007 ¶ 65.

Petitioner explains that it is desirable to filter posts about locations currently open:

> A POSA would have understood that filtering posts based on whether a "specific place" is "open" or "closed" as Rush teaches would have allowed the Feldman/Jackson Combination's user to be presented with, and thereby "tune into," only posts about locations that are currently open, desirably allowing the user to gather information only on open places the user may be interested in visiting at that time.

Pet. 69 (citing Ex. 1007 ¶¶ 24, 39, 65; Williams Decl. ¶ 212). Petitioner asserts that Rush's criteria improves the user experience and user engagement. *Id.* at 70 (citing Ex. 1006, 6:50–53; Williams Decl. ¶ 213). According to Petitioner, incorporating Rush into the Feldman-Jackson combination involves no more than "combining prior-art elements according to known methods to yield predictable results," and one of ordinary skill in the art would have had a reasonable expectation of success doing so. *Id.* at 70–71 (citing Williams Decl. ¶¶ 214–215; Ex. 1005 ¶ 99; Ex. 1007 ¶¶ 85–88). Here, considering the entirety of the record, Petitioner provides articulated reasoning, supported by rational underpinnings, why one of ordinary skill in the art would have combined Feldman, Jackson, and Rush. *See KSR*, 550 U.S. at 418.

Thus, Petitioner has established that the subject matter recited in claim 12 would have been obvious over Feldman, Jackson, and Rush.

3. Claim 16

Claim 16 recites, "The method of claim 11, wherein the general score of a social media post is based on a posting account that authored the social media post, and wherein the general score of the social media post is

reduced based on movement of a client device used to author the social media post." Ex. 1001, 23:36–39.

Petitioner asserts that claim 16 is unpatentable as obvious over Feldman, Jackson, and Rush. *See* Pet. 65–74. Petitioner asserts that "Rush also teaches weighting and filtering posts based on the poster's location." *Id.* at 68 (citing Ex. 1007 ¶ 65; Williams Decl. ¶ 210). Petitioner asserts that the posts can be weighted based on a geo-fence—i.e., whether it was made inside a particular area. *Id.*

Patent Owner does not present separate arguments specific to Petitioner's challenge to claim 16. *See* PO Resp.; Sur-reply.

We have reviewed Petitioner's arguments and evidence for claim 16. Pet. 65–73. We determine that Petitioner's showing is sufficient. *Id.* For example, Rush explains that "the location sub-variables 363 make take into account the location of consumer 130 over time." Ex. 1007 ¶ 65, *cited in* Pet. 68.

Petitioner's obviousness rationale for claim 16 is similar to the one for claim 12, which we determine is sufficient. *Supra* § II.D.2. In addition to the reasoning discussed for claim 12, Petitioner asserts that a person of ordinary skill in the art "would have understood that filtering posts based on whether the poster had ever been to a particular area as Rush teaches would have allowed the Feldman/Jackson Combination's user to tune into posts from only posters with first-hand knowledge of a location they are commenting on because those posters had visited that location." Pet. 70 (citing Ex. 1007 ¶¶ 38–39; Williams Decl. ¶ 212). For reasons similar to those discussed in connection with claim 12, we determine that Petitioner's articulated reasoning has rational underpinning and is supported by the cited evidence.

Thus, Petitioner has established that the subject matter recited in claim 16 would have been obvious over Feldman, Jackson, and Rush.

E. Conclusion

Petitioner has shown, by a preponderance of the evidence, that all challenged claims are unpatentable.

III. CONTINGENT MOTION TO AMEND

Patent Owner filed a Motion to Amend proposing to substitute original claims 1–20 with claims 21–40, contingent upon a finding of unpatentability of the original claims. MTA 1. Patent Owner withdrew substitute claims 24, 26, 34, and 36. MTA Sur-reply 2. Thus, we only consider claims 21–23, 25, 27–33, 35, and 37–40 to be part of the Motion to Amend.

A. Requirements under 35 U.S.C. § 316(d) and 37 C.F.R.§ 42.121

In this section, we determine whether the Motion to Amend meets the statutory and regulatory requirements set forth in 35 U.S.C. § 316(d) and 37 C.F.R. § 42.121. Under those requirements, Patent Owner must show that: (1) the amendment responds to a ground of unpatentability involved in the trial; (2) the amendment does not seek to enlarge the scope of the claims of the patent or introduce new subject matter; (3) the amendment proposes a reasonable number of substitute claims; and (4) the proposed claims are supported in the original disclosure. 37 C.F.R. § 42.121; *Lectrosonics, Inc. v Zaxcom, Inc.*, IPR2018-01129, Paper 15 (PTAB Feb. 25, 2019) (precedential).

1. Responsive to a Ground of Unpatentability

For the reasons that follow, the Motion responds to a ground of unpatentability involved in the trial. 37 C.F.R. § 42.121(a)(2)(i).

Original independent claims 1 and 20 recite, in relevant part, "screen attribute information." The Petition challenges those claims under the Feldman-Jackson combination. Pet. 20. Petitioner asserts that, in the proposed combination, Feldman's perimeter 303 is "screen attribute information" because "Feldman's perimeter defines areas 305 which are 'areas of a map displayed on the display.'" *Id.* at 22 (citing Ex. 1001, 15:12–15; Ex. 1003 ¶ 104).

In the Motion, Patent Owner asserts that "[e]ach of independent substitute claims 21, 31 and 40 and dependent substitute claims 26 and 36 limit the scope of screen attribute information to specific instances thereof that are not taught in the prior art." MTA 4.

In the Opposition, Petitioner argues that "[a] substitute claim 'is not responsive to an alleged ground of unpatentability of a challenged claim if it does not either *include or narrow each feature* of the challenged claim being replaced.'" MTA Opp. 3 (quoting *Sprint Spectrum L.P. v. Gen. Access Sols., Ltd.*, IPR2017-01885, Paper 8 at 6 (PTAB Mar. 9, 2018) (Order Providing Motion to Amend Information)). Petitioner argues that substitute claims 26 and 36 are "not in response to any unpatentability ground," because they "broaden those original claims 6 and 16 in some respects." Patent Owner, however, withdrew claims 26 and 36. MTA Sur-reply 2. Apart from its arguments directed to claims 26 and 36, Petitioner does not argue that any other claims do not respond to a ground of unpatentability. *See* MTA Opp. 3.

We determine that all the substitute claims further define the "screen attribute information" limitations that appear in the original claims. Specifically, in response to the Petition's challenge based on the Feldman-Jackson combination (Pet. 20), the substitute claims for the original claims replace the limitations to "screen attribute information" with "current zoom

level" (independent claims 21, 31, and 40), "pan location" (independent claim 31), and the "user's viewport" (independent claim 40). MTA 27–35. The original specification explains that "[s]creen attributes may include, but are not limited to: a size and shape of a screen, a current zoom level, a pan location, an availability of screen space, a viewing angle, an amount of transparency of a screen, and/or an amount of screen space." Ex. 1002 ¶ 38.[2]

Thus, the Motion responds to a ground of unpatentability involved in the trial.

2. Scope of the Claims

For the reasons that follow, the substitute claims do not broaden a challenged claim in any respect that enlarges the scope of the claims of the patent. . 35 U.S.C. § 316(d)(3); 37 C.F.R. § 42.121(a)(2)(ii).

In the Motion, Patent Owner contends the substitute claims include additional limitations that do not enlarge the scope of the claims because they limit the scope of the recited "screen attribute information" to specific examples. MTA 4.

In its Opposition, Petitioner argues substitute claims 26 and 36 impermissibly enlarge the scope of the claims by deleting limitations, which broadens original claims 6 and 16 in some respects. MTA Opp. 3. Patent Owner, however, withdrew claims 26 and 36. MTA Sur-reply 2. Apart from its arguments directed to claims 26 and 36, Petitioner does not argue that any other claims impermissibly enlarge the scope of the claims. *See* MTA Opp. 3.

"A patent owner may not seek to broaden a challenged claim in any respect that enlarges the scope of the claims of the patent, for example, in

[2] The original specification begins on page 9 of Exhibit 1002.

the name of responding to an alleged ground of unpatentability. Likewise, a proposed substitute claim may not remove a feature of the claim in a manner that broadens the scope of the claims of the challenged patent." *Lectrosonics*, Paper 15 at 6–7.

Here, substitute claims 21, 31, and 40 narrow original independent claims 1, 11, and 20 because the substitute claims further define the recited "request" to include specific types of "screen attribute information." MTA 27–35. Thus, the substitute claims do not broaden a challenged claim in any respect that enlarges the scope of the claims of the patent.

3. Reasonable Number of Substitute Claims

There is a rebuttable presumption that one substitute claim per challenged claim is reasonable. 37 C.F.R. § 42.121(a)(3). Here, Patent Owner proposes one substitute claim to replace each challenged claim: Petitioner has challenged claims 1–20, and Patent Owner has proposed substitute claims 21–23, 25, 27–33, 35, and 37–40, after withdrawing 24, 26, 34, and 36. MTA 3.

Petitioner argues that the number of substitute claims is not reasonable based on proposed substitute claims 26 and 36. MTA Opp. 2. Patent Owner, however, withdrew claims 26 and 36. MTA Sur-reply 2. Apart from its arguments directed to claims 26 and 36, Petitioner does not argue that any other claims impermissibly enlarge the scope of the claims. *See* MTA Opp. 3. We determine that Patent Owner proposes a reasonable number of substitute claims.

4. Support in the Original Disclosure

Patent Owner has met its burden to show written-description support for the substitute claims. *See* 35 U.S.C. § 316(d)(3); 37 C.F.R. § 42.121(a)(2)(ii).

We disagree with Petitioner's argument that Patent Owner merely presents string citations to show written-description support. MTA Opp. 5. Rather, Patent Owner also describes how specific embodiments provide written-description support for the amendments. MTA 22–24 (citing Ex. 1002 ¶¶ 38–39, 90). For example, substitute claims 21, 31, and 40 further limit the "screen attribute information" recited in the original claims with specific examples of screen attribute information taken from the original specification: "a current zoom level" (claims 21, 31, and 40), "a pan location" (claim 31), and "a user's viewport" (claim 40). Patent Owner explains that the substitute claims have written-description support because the original specification states that "[s]creen attributes may include, but are not limited to: a size and shape of a screen, a current zoom level, a pan location, an availability of screen space, a viewing angle, an amount of transparency of a screen, and/or an amount of screen space." *Id.* (quoting Ex. 1002 ¶¶ 38–39). We agree. Thus, Patent Owner has described how the newly added limitations have written-description support.

Petitioner also presents arguments directed to limitations found in both the original and substitute claims. *See* MTA Opp. 4–5; MTA Reply 1–3. In particular, Petitioner argues that Patent Owner has not shown that the combined ranking recited in the original claims has written-description support. MTA Opp. 4–5. Petitioner argues that every claim requires applying two sets of grouping criteria using two customized scores to generate a combined ranking, but that Patent Owner has not shown that the '727 patent's written description supports this feature. *Id.* Petitioner explains that, although these limitations are found in the original claims, Patent Owner must show written-description support for these features because "the motion must set forth written description support for each proposed

substitute claim as a whole, and not just the features added by the amendment." *Id.* (citing *Lectrosonics* at 8) (emphasis removed); *see also* MTA Reply 1–3 (arguing that Patent Owner's motion must set forth written-description support for the claim as a whole).

Section II.B.2 of this Decision explains how the relevancy and importance scores are customized and fall within the scope of the two recited "customized scores." In fact, Petitioner identified ways that "a weighted general score can be created from preference factors, or the general score's components can be weighted using those factors." Inst. Dec. 22 (citing Pet. 30–31 (citing Ex. 1001, 12:1–17, 12:66–13:8, 13:17–19, 15:63–66, 16:6–13, 17:9–24; Ex. 1003 ¶¶ 122, 123)). And, as Petitioner concedes, Patent Owner relied on the relevancy-score embodiment to support the proposed amendments. *See* Reply 16–17 (citing MTA 7, 8, 13, 14, 19, 20; Ex. 2005, 26–28, 32–35). Petitioner, though, argues that it never admitted that the '727 patent provides written-description support for combining *two* customized scores, only that the relevancy score embodiment was "part of a description of 'ways ***a*** 'customized score is 'based on' preference factors 'applied to a general score.'" MTA Reply 2.

Even so, it is apparent from Patent Owner's citations that the '727 patent discloses examples where the user creates multiple maps that each have their own ranking of posts by relevancy. *See* MTA 7 (citing Ex. 1002 ¶¶ 28, 93–95; Ex. 2005 ¶¶ 49–54, 86–89, 92, 94, 146–150). In particular, the user can create multiple types of maps, known as "channels." Ex. 1002 ¶ 28, *cited in* MTA 7. These channels can be associated with different user interests. *Id.* The system finds the most relevant posts for a geographical area and lists them in order of importance, then adds them to the map. Ex. 2005 ¶ 94, *cited in* MTA 7.

Importance can be captured by a score assigned to a post. *Id.* ¶¶ 146–150, *cited in* MTA 7. A "customized score" may be based on preference factors corresponding to the requesting account. Ex. 1002 ¶ 94, *cited in* MTA 7. As discussed in § II.B.2 and by Petitioner (Pet. 30–31), the relevancy-score embodiment describes a way that the customized score is based on preference factors applied to a general score. Ex. 2005 ¶¶ 86–89, *cited in* MTA 7. And, indeed, Patent Owner cites the paragraphs describing how the score can include data customized by the user's interests. *See id.* ¶¶ 49–54, 92, 137, *cited in* MTA 7. In one example, the system weighs the impact of each social-emotive data score, incorporating a person's emotional state and geographic location, and combines them together to get an overall score for a map. *Id.* ¶ 137, *cited in* MTA 7. In at least this way, it is apparent from Patent Owner's citations that the system creates more than one customized score when the posts are ranked for different maps ("channels"). Ex. 1002 ¶ 28 (describing three different channels and associated interests), *cited in* MTA 7.

Although not every paragraph cited by Patent Owner is described with the same detail that the paragraphs corresponding to the newly added limitations are, we find Patent Owner's citations sufficient to understand how the original claim limitations are supported. *See* MTA 7. Thus, Patent Owner has met its burden to show written-description support for the substitute claims.

B. Patentability of the Substitute Claims

Petitioner challenges the patentability of the proposed substitute claims as being indefinite and obvious. MTA Opp. 4; MTA Reply 3–12. In particular, Petitioner argues that substitute claims 24 and 34 are indefinite because "the set of preference factors" has an unclear antecedent basis.

MTA Opp. 8. Patent Owner, though, withdrew substitute claims 24 and 34. MTA Sur-reply 2. As for its obviousness challenge, Petitioner has not shown that the subject matter recited in the claims would have been obvious under either of the grounds in the Opposition. *See* MTA Opp. 8–25.

1. Feldman

Substitute claim 21 recites a request that "includes a current zoom level of a display of the client device," and a module that enables a processor to "identify a set of temporally recent social media posts based on the current zoom level of the display of the client device." MTA 27. The other substitute independent claims recite similar features. *See id.* at 31 (claim 31), 34 (claim 40). Thus, all substitute claims require a request that includes the current zoom level.

Petitioner argues that Feldman teaches such a request. MTA Opp. 9–11. Petitioner argues that Feldman's radius can be included in a search request. *Id.* at 9. Petitioner argues that the current zoom level recited in the claim controls how much of a map is displayed, and that Feldman teaches "[a]djusting the 'radius' with 'slider 300' adjusts both the search area (i.e., by defining the 'perimeter 303') and the zoom level of the map." *Id.* at 9–10. Petitioner argues that Feldman's radius teaches current zoom level recited in the substitute claims. *Id.* at 10.

We disagree with Petitioner because Feldman's zoom level is different from the radius defined by perimeter 303.[3] Feldman's Figure 6, below, shows a user interface illustrating perimeter 303. Ex. 1005, Fig. 6.

[3] Perimeter 303 need not be a radius. Ex. 1005 ¶ 48. It is an outline of a map area that can take any shape, including an ellipse, circle, rectangle, or polygon, among other things. *Id.*

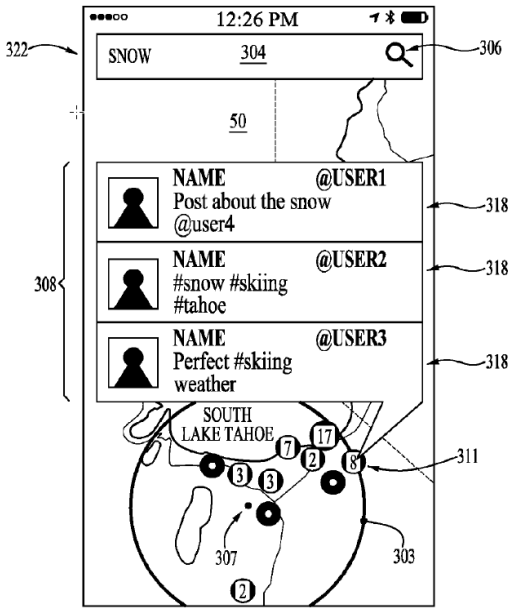

FIG. 6

Figure 6 shows perimeter 303 as a circle surrounding geoposts. *Id.* ¶ 82. Perimeter 303 limits the area in which geoposts can be discovered. *Id.* On the other hand, Feldman teaches that the user can change the map's zoom perspective. *Id.* ¶ 88. For example, the user can move slider 300, click plus to zoom in or minus to zoom out, and tap a scale. *Id.*

Petitioner appears to acknowledge that Feldman's zoom level and perimeter 303 are indeed different things. MTA Opp. 10. For example, Petitioner argues that "zooming the map view can thereby *adjust* the search perimeter (including its radius)." MTA Reply. 6 (emphasis added). Petitioner argues that, when the user zooms out from the map, Feldman's perimeter 303 is larger because is covers a larger geographic area of the map. *Id.* at 4–8. That is, although perimeter 303's radius may not change with respect to the screen size, its radius encompasses a larger geographic area because the underlying map represents a larger geographic area. *See id.* In Petitioner's view, both experts agree Feldman uses the zoom level to set

search perimeter 303. *See id.* at 5 (citing Williams Decl. ¶¶ 77–88; Ex. 2003 ¶¶ 60–61).

At best, Petitioner explains how the zoom level can be related to search the radius in some way, which is not sufficient to meet the claimed request, which includes the current zoom level. For example, Petitioner argues that the zoom and search area can be adjusted together: "Having the same user action (e.g., moving slider 300) simultaneously adjust both the zoom level and the search area serves Feldman's goal of 'modify[ing] what is searched at the same time the area the user desires to view is selected dynamically' [Ex. 1005 ¶ 88], 'quickly and easily without numerous user interface options' [*id.* ¶ 10]." MTA Reply 6. According to Petitioner, Feldman's radius "meets the substitute claims' 'current zoom level' limitation because, in addition to setting the search area for posts, it *indicates* the 'zoom perspective view' of the map." MTA Opp. 10 (emphasis added).

Yet claims 21, 31, and 40 recite that "the request *includes* a current zoom level." MTA 27 (emphasis added). Petitioner has not identified such a request in Feldman. Instead, Feldman discloses sending the perimeter 303 and the radius in the search request, not the current zoom level:

> Perimeter 303 can be included in the search request sent to the server. In a possible embodiment, a radius previously specified by area size value 350 (FIG. 3B) can be included with the search request to the server.

Ex. 1005 ¶ 62. Thus, Petitioner has not shown that Feldman teaches or suggests the recited request having the current zoom level.

Every substitute claim requires a request with a current zoom level because it either expressly recites a current zoom level or inherits that limitation through a dependency from a claim that does. Thus, Petitioner has

not shown that the subject matter recited in claims 21–23, 25, 27–33, 35, and 37–40 would have been obvious over Feldman.

2. Alternative Grounds

Petitioner alternatively argues that "it was well known to include the display's 'current zoom level' in a request for social-network posts or other content on a map." MTA Opp. 11 (citing Second Williams Decl. ¶ 79). As to Exhibits 1016 and 1028–1033, Petitioner argues,

> [an ordinarily skilled artisan] would have been motivated to adapt Feldman's request to include the "current zoom level" because, as these references illustrate, doing so was a known technique that would be predictably applied in Feldman's system in the same way as in other systems to conveniently specify the area the user desires to search for content.

Id. at 14; *see also* MTA Reply 10. As to Exhibits 1028, 1029, and 1032, Petitioner contends the ordinary artisan would have been motivated by these teachings to include the display's zoom level in the request. MTA Opp. 8–15.

Yet Petitioner's obviousness rationale for each cited reference lacks a sufficient explanation of why one of ordinary skill in the art would have added the zoom levels in the prior art to Feldman's request. *See id.* At most, Petitioner argues that it would be convenient to specify the search area in this way. *Id.* at 14. Petitioner, though, does not sufficiently explain how or why the prior-art features provide this convenience. *See id.*

Petitioner argues that Feldman provides a motivation to incorporate the known techniques from the prior art:

> Feldman itself provides motivation to incorporate this known technique in Feldman's system, because it can accomplish Feldman's goal of "modify[ing] what is searched at the same time the area the user desires to view is selected dynamically,"

> thus "dynamically generat[ing] such maps associated with posts quickly and easily without numerous user interface options."

MTA Reply 10. This rationale lacks any discussion of the request that Petitioner proposes to modify to meet the claim. *See id.*

As discussed in § III.B.1 discussing the first obviousness rationale above, Feldman does not need to send the zoom level in the request because the search request already contains search perimeter 303. In fact, Petitioner explains how the zoom level, in some cases, is already accounted for in the radius specified by search perimeter 303. *See* MTA Opp. 10 (arguing that Feldman's radius "indicates" the zoom level); MTA Reply 4–8 (arguing Feldman's radius is adjusted by the zoom level).

Petitioner does not sufficiently explain how sending the zoom level alone would supply the information represented by the radius. *See* MTA Opp. Nor does Petitioner explain how Feldman would obtain the search radius if only the zoom level were sent in the request. *See id.* It is unclear from Petitioner's Opposition whether there would be any advantage to sending both the zoom level and the search radius under Petitioner's reasoning that perimeter 303 already accounts for the zoom level. *See* Ex. 1006 ¶ 62.

Petitioner provides seven additional references with teachings related to zoom level. *See* MTA Opp. 11–15 (citing Ex. 1028 ("Badger"), Ex. 1029 ("Bergboer"), Ex. 1030 ("Jakobson"), Ex. 1031 ("Marra"), Ex. 1032 ("O'Clair"), Ex. 1033 ("Smith"), Ex. 1016 ("Soni")). Yet none of the references or the accompanying discussion provides sufficient explanation about whether one of ordinary skill in the art would have modified Feldman's request to include a zoom level. *See id.*

We do not disagree with Petitioner's summary of each reference:

> Badger's teachings that zoom level specifies what map space to both view and search for content, Bergboer's teachings that zoom level determines map portion to both display and search for images, Jakobson's teachings that zoom level determines both map data and corresponding POI content, Marra's teachings that zoom level determines both displayed map region and returned social content, O'Clair's teachings that zoom level updates both map view and businesses retrieved, Smith's teachings that zoom level refreshes both map portion viewed and search area, and Soni's teachings that zoom level changes both map region displayed and area searched for posts.

MTA Reply 10; *see also* MTA Opp. 11–15. Even accepting Petitioner's characterization, none of these teachings support Petitioner's conclusion that it would have been obvious to modify Feldman. That is, the issue here is whether it would have been obvious to modify Feldman's request, and more specifically, whether Petitioner has articulated a sufficient rationale for using the current zoom level in Feldman's request.

Yet Petitioner summarizes Badger then merely states that "POSAs would have been motivated by these teachings to include the display's zoom level in the request to identify a map area and corresponding posts to display in Feldman's system." MTA Opp. 11–12 (citing Second Williams Decl. ¶ 80). Petitioner makes similar statements about O'Clair and Bergboer. *See id.* at 12–13.

Petitioner's reasoning here is conclusory and lacking sufficient discussion of how Feldman would have used the zoom level or why this would have been convenient. Apart from the summary, there is no discussion of how the specific features of Badger, O'Clair, or Bergboer would have improved or otherwise have been used in Feldman, which already sends a request with a different parameter. *See supra* § III.B.1. As

for Jakobson, Marra, Smith, and Soni, Petitioner simply summarizes a selection of teachings without further explanation. *See* MTA Opp. 11–14.

Petitioner asserts that including the zoom level would have been a "predictable design choice to implement Feldman's goal of 'modify[ing] what is searched at the same time the area the user desires to view is selected dynamically." *Id.* at 14 (citing Feldman ¶ 88, Second Williams Decl. ¶ 88). But Feldman already achieves this by sending the perimeter 303 in the request. *See supra* § III.B.1. Petitioner does not explain how adding information to the request or possibly replacing the perimeter 303—which is not clear—would further this goal. *See* MTA Opp. That is, Petitioner does not fully explain how one of ordinary skill in the art would have applied the teachings, let alone how that application would produce predictable results. *See id.* at 14; MTA Reply 11–12.

Petitioner asserts that "POSAs would have expected success because Feldman's client device knows the zoom level." MTA Opp. 15. Here, Petitioner argues that Feldman's system has the zoom level, which is recited in the claim, but Petitioner's argument lacks a reason for using the zoom level in the same way that is claimed. *See id.*

In its Reply, Petitioner asserts that, under its proposed combination, "the user need only adjust the zoom and need not spend extra actions specifying the zoom level view and search area separately," and "search results are not wasted on map areas that are not in view." MTA Reply 10–11. There is no basis for this conclusion in Feldman or elsewhere. For example, Petitioner has not shown that Feldman requires the user to separately specify the zoom level and search area for each search. *Id.* Rather, Feldman's perimeter 303 can be a circle superimposed on the screen, and the user can change a map's zoom perspective by moving slider 300, clicking

plus to zoom in or minus to zoom out, and tapping a scale. Ex. 1005 ¶¶ 82, 88. Petitioner does not fully explain how this interaction, for instance, could be modified to reduce the number of actions or wasted map areas. *See* MTA Reply 10–11.

In its Reply, Petitioner further argues that the other cited references supply the motivation "to provide an option in Feldman's system to specify the current zoom level in the search request, for example to determine the appropriate level of detail at which to display the map and search results." *Id.* at 11. To support this argument, Petitioner cites Badger's teaching that the "zoom level parameter define[s] the level of detail for map 109" and Bergboer's teaching that "the number of search results returned and displayed can depend on the zoom level." *Id.* (citing Ex. 1028 ¶¶ 34, 40, 41, 70; Ex. 1029, 3:54–62, 6:57–7:3). But these teachings add little to Petitioner's reasoning. Instead, they merely explain that it was known to specify the zoom level without more. *See* Ex. 1028 ¶¶ 34, 40, 41, 70; Ex. 1029, 3:54–62, 6:57–7:3.

In sum, Petitioner has not provided a sufficient articulated reasoning, supported by rational underpinnings, why one of ordinary skill in the art would have modified Feldman with any of the cited references. *See KSR*, 550 U.S. at 418.

Every substitute claim has the zoom-level limitation because it either expressly recites a request with a zoom level or it inherits that limitation through a dependency from a claim that does. Thus, Petitioner has not shown that the subject matter recited in claims 21–23, 25, 27–33, 35, and 37–40 would have been obvious.

IV. CONCLUSION

Petitioner has met its burden to show that claims 1–20 are unpatentable. Patent Owner's contingent Motion to amend is granted, as summarized in the table below.

Claim(s)	35 U.S.C. §	Reference(s)/ Basis	Claim(s) Shown Unpatentable	Claim(s) Not shown Unpatentable
1–11, 13–15, 17–20	103	Feldman, Jackson	1–11, 13–15, 17–20	
12, 16	103	Feldman, Jackson, Rush	12, 16	
Overall Outcome			1–20	

Motion to Amend Outcome	Claim(s)
Original Claims Cancelled by Amendment	1–20
Substitute Claims Proposed in the Amendment	21–23, 25, 27–33, 35, 37–40[4]
Substitute Claims: Motion to Amend Granted	21–23, 25, 27–33, 35, 37–40
Substitute Claims: Motion to Amend Denied	
Substitute Claims: Not Reached	

[4] Patent Owner withdrew substitute claims 24, 26, 34, and 36. MTA Sur-reply 2.

V. ORDER

It is

ORDERED that claims 1–20 of U.S. Patent 10,616,727 B2 are unpatentable; and

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