

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

BMW OF NORTH AMERICA, LLC,
Petitioner,

v.

NORTHSTAR SYSTEMS LLC,
Patent Owner.

IPR2023-01017
Patent 8,014,943 B2

Before MEREDITH C. PETRAVICK, BENJAMIN D. M. WOOD, and
RYAN H. FLAX, *Administrative Patent Judges*.

PETRAVICK, *Administrative Patent Judge*.

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

I. INTRODUCTION

A. *Background and Summary*

BMW of North America, LLC (“Petitioner”) filed a Petition requesting *inter partes* review of claims 1–26 (all claims) of U.S. Patent No. 8,014,943 B2 (Ex. 1001, “the ’943 patent”). Paper 1 (“Pet.”). NorthStar Systems LLC (“Patent Owner”) file a Preliminary Response. Paper 7 (“Prelim. Resp.”). We also authorized the parties to submit additional briefing to address arguments raised by Patent Owner regarding discretionary denial and claim construction. Ex. 3001. Petitioner filed a Reply (Paper 8, “Pet. Prelim. Reply”) and Patent Owner filed a Sur-Reply (Paper 11, “PO Prelim. Sur-Reply”).

Under 35 U.S.C. § 314(a), an *inter partes* review may not be instituted unless the information presented in the petition “shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.”

After considering the Petition, the Preliminary Response, the Reply, the Sur-Reply, and the evidence of record, we determine the information presented shows a reasonable likelihood that Petitioner would prevail in establishing the unpatentability of at least one of the challenged claims of the ’943 patent. Accordingly, we institute an *inter partes* review of claims 1–26 of the ’943 patent on the grounds asserted in the Petition.

B. *Real Parties-in-Interest*

Petitioner identifies itself and Bayerische Motoren Werke AG as the real parties-in-interest. Pet. 84. Patent Owner identifies itself as the real party-in-interest. Paper 6, 2.

C. Related Matters

The parties identify the following related court proceedings:

NorthStar Systems LLC v. Bayerische Motoren Werke AG, Case No. 2:22-cv-00496 (E.D. Tex.) (filed Dec. 27, 2022); *NorthStar Systems LLC v. Hyundai Motor Group, Hyundai Motor Company, and KIA Motors Corporation*, Case No. 2:22-cv-00495 (E.D. Tex.) (filed Dec. 23, 2022); *NorthStar Systems LLC v. Volkswagen AG*, Case No. 2:22-cv-00486 (E.D. Tex.) (Dec. 22, 2022); *NorthStar Systems LLC v. Mercedes-Benz Group AG*, Case No. 2:22-cv-00323 (E.D. Tex.) (filed Aug. 19, 2022); *NorthStar Systems LLC v. Lenovo Group Ltd.*, Case No. 2:22-cv-00267 (E.D. Tex.) (filed July 18, 2022); *NorthStar Systems LLC v. HP Inc.*, Case No. 2:22-cv-00265 (E.D. Tex.) (filed July 15, 2022); *NorthStar Systems LLC v. Honda Motor Company, Ltd.*, Case No. 2:22-cv-00143 (E.D. Tex.) (filed May 11, 2022); *NorthStar Systems LLC v. Xiaomi Corporation et al.*, Case No. 2:22-cv-00139 (E.D. Tex.) (filed May 10, 2022); *NorthStar Systems LLC v. ZTE Corp.* 2:20-cv-00386 (E.D. Tex.) (filed Dec. 15, 2020); *NorthStar Systems LLC v. Shenzhen OnePlus Science & Tech. Co., Ltd.*, Case No. 2:20-cv-00385 (E.D. Tex.) (filed Dec. 15, 2020); *NorthStar Systems LLC v. Kyocera Corp.*, Case No. 2:20-cv-00384 (E.D. Tex.) (filed Dec. 15, 2020); and *NorthStar Systems LLC v. TCT Mobile Int'l Ltd.*, Case No. 2:20-cv-00383 (E.D. Tex.) (filed Dec. 15, 2020). Pet. 86–87; Paper 5, 2.

Patent Owner identifies an additional related proceeding commenced after the Petition was filed: *BMW of N. Am., LLC v. NorthStar Sys. LLC*, No. 6:23-cv-00456-ADA (W.D. Tex.). Prelim. Resp. 20.¹

¹ Petitioner is reminded of its duty to update its mandatory notices, including the list of related matters. 37 C.F.R. § 42.8(a)(3).

Additionally, we note the following *inter partes* reviews that may be related: IPR2023-00890, IPR2023-00934, IPR2023-01049, IPR2023-001190, and IPR2023-001191.

D. The '943 Patent

The '943 patent, titled “Method and System for Displaying Social Networking Navigation Information,” issued September 6, 2011, from an application filed November 13, 2008. Ex. 1001, codes (21), (22), (45), (54). The '943 patent relates “to social networking and navigation.” *Id.* at 1:16–17. The '943 patent explains that a “common facet of social networking is the ability to display objects of common interest on an electronic map,” such as “locations of members and meeting places.” *Id.* at 1:29–32. In particular, “[s]ocial-networking related objects, displayed on a map, may be demarcated by symbols indicating points-of-interest (‘POI’, way-points (‘WP’), business locations, places of interest, members’ residences, members’ meeting places, members’ current locations, members’ places of employment, etc. (collectively referred to in here as map-objects, or (‘MO’)).” *Id.* at 1:32–38.

For example, a user may enter a search query for meeting places and the results (i.e., MOs) are displayed on an electronic map as symbols. *Id.* at 1:38–42. However, one or more MOs may be located outside of the map area visible to the user (e.g., a user’s selected zoom level may display a visible area of the map in which an MO is not located). *Id.* at 1:50–53. Thus, the user may not be able to discern the distance and direction for an MO that is not located within the visible area of the map without panning or zooming the map. *Id.* at 1:53–62. To address this issue, the '943 patent discloses an object vector indicator (OVI) that displays information related

to MOs that are outside of the visible area of a map, as determined by a map-display application. *Id.* at 2:1–15.

Figure 1 of the '943 patent depicts a map display including OVIs according to one embodiment, and is reproduced below:

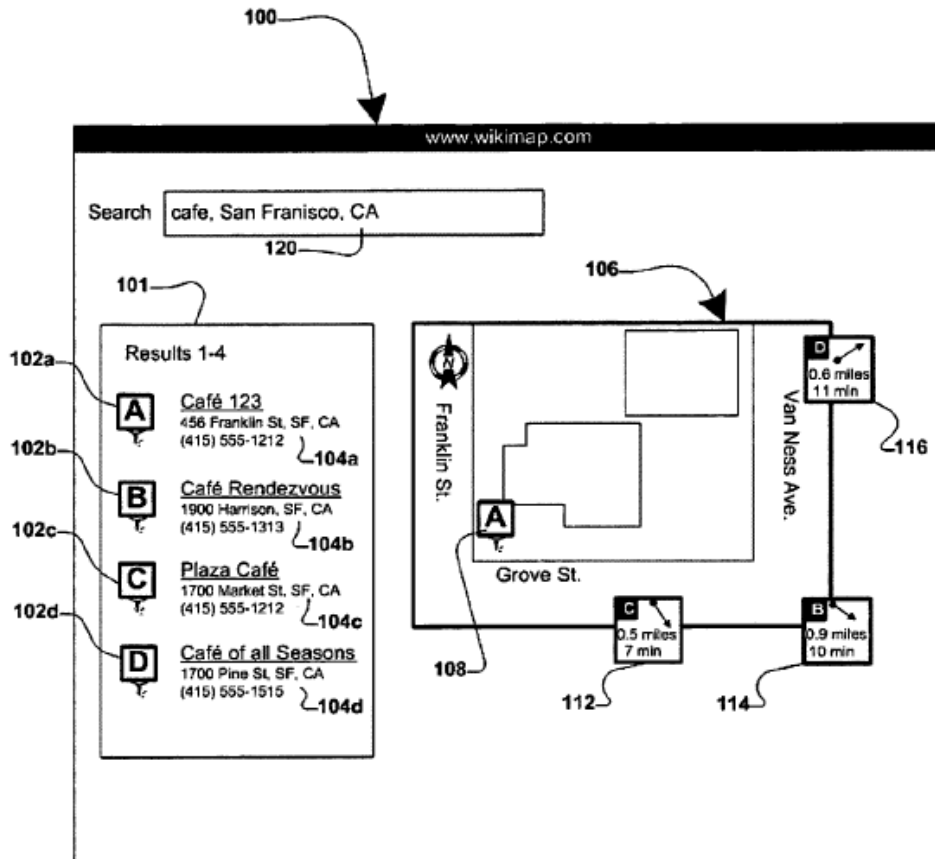


Figure 1 depicts map display application 100 on a computing device displaying a visible area of map 106, which may represent a small portion of a larger virtual map extending outside of the visible area. *Id.* at 3:18–27.

Map display application 100 may display location markers denoting social networking POIs in the visible area of map 106, as well as references to location markers that are outside of the visible area. *Id.* at 3:27–31. For example, a user may enter a social network search query 120, and the map display application renders the visible area of the map and a list of locations

101 with location marker identifiers 102*a*–102*d*. *Id.* at 3:32–39. Location marker identifier 102*a* corresponds to geographic coordinates indicated by location marker “A” 108 shown in the visible area of the map. *Id.* at 3:39–43. Location marker identifiers 102*b*–102*c* correspond to geographic coordinates that are outside of the visible area of the map and are referenced by object vector indicators (OVIs) “B” 114, “C” 112, and “D” 116 displayed by the map display application. *Id.* at 3:52–58. Information displayed in each OVI may include a vector (e.g., arrow) pointing in the direction of a respective location marker identifier, as well as the distance and travel time thereto. *Id.* at 3:66–4:4.

E. Illustrative Claims

Petitioner challenges claims 1–26 of the ’943 patent. Pet. 4. Claims 1, 18, and 23 are independent. Ex. 1001, 17:57–20:44. Claims 2–17 depend from claim 1, claims 19–22 depend from claim 18, and claims 24–26 depend from claim 23. *Id.* Claim 1 is illustrative and is reproduced below.

[1pre]² 1. A method for displaying object vector indicators (“OVI”) referencing social-network map-objects (“MO”) on an electronic map, comprising:

[1a] providing an electronic device having a map-display application that is coupled to a mapping service, a social network and a display for displaying a selected area of the electronic map;

[1b] authenticating to the social network;

[1c] obtaining from the social network the MO;

² Petitioner’s designations referencing the elements of claim 1 are set forth in brackets. Pet. 23–35. Herein we refer to the elements of claim 1 using Petitioner’s designations.

- [1d] determining that coordinates of the MO are not within the selected area of the electronic map;
- [1e] computing distance and travel-related information from a location within the selected area of the electronic map to the MO;
- [1f] computing a placement position of an OVI referencing the MO on the map-display application;
- [1g] creating the OVI containing the distance and travel-related information;
- [1h] displaying the OVI on the display at the computed placement position;
- [1i] receiving user input selecting the OVI;
- [1j] displaying a secondary area of the electronic map, wherein the secondary area is a region of the electronic map centered approximately around the MO; and
- [1k] displaying the MO approximately at the center of the secondary area.

Ex. 1001, 17:57–18:16.

F. Evidence and Asserted Grounds

Petitioner asserts that claims 1–26 of the '943 would have been unpatentable on the following grounds:

Ground	Claim(s) Challenged	35 U.S.C. §	Basis
1	1–8, 11–18, 23, 25, 26	103(a) ³	Kreitler, ⁴ Altman690, ⁵ Suomela ⁶

³ The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112–29, 125 Stat. 284 (Sept. 16, 2011), includes revisions to Sections 102 and 103 that became effective on March 16, 2013. Because the challenged claims issued from an application filed before March 16, 2013, we apply pre-AIA law.

⁴ U.S. Patent No. 9,607,092 B2, issued Mar. 28, 2017 (Ex. 1005).

⁵ U.S. Patent Application Publication No. US 2007/0281690 A1, published Dec. 6, 2007 (Ex. 1006).

⁶ U.S. Patent No. 6,697,734 B1, issued Feb. 24, 2004 (Ex. 1007).

Ground	Claim(s) Challenged	35 U.S.C. §	Basis
2	9, 10, 20, 21, 24	103(a)	Kreitler, Altman ⁶⁹⁰ , Suomela, Myr ⁷
3	19	103(a)	Kreitler, Altman ⁶⁹⁰ , Suomela, Rasmussen ⁸
4	22	103(a)	Kreitler, Altman ⁶⁹⁰ , Suomela, Rasmussen, Myr

Petitioner also relies on the Declaration of Dr. Craig Rosenberg (Ex. 1003) to support its analysis.

II. ANALYSIS

A. Discretionary Denial Under 35 U.S.C. § 314(a)

Patent Owner requests that we exercise our discretion under 35 U.S.C. § 314(a) to deny instituting *inter partes* review of the '943 patent. Prelim. Resp. 20–26.

Section 314(a) grants the Director discretion to deny institution of an *inter partes* review. *Cuozzo Speed Techs., LLC v. Lee*, 579 U.S. 261, 273 (2016) (“[T]he agency’s decision to deny a petition is a matter committed to the Patent Office’s discretion.”); *SAS Inst. v Iancu*, 138 S. Ct. 1348, 1356 (2018) (“[Section] 314(a) invests the Director with discretion on the question whether to institute review.”) (emphasis in original); *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1367 (Fed. Cir. 2016) (“[T]he PTO is permitted, but never compelled, to institute an IPR proceeding.”). Relevant to this case, the Board may, in the interest of fairness and efficient use of Board resources, deny institution under § 314(a) where there are parallel district-court proceedings involving the same or substantially the same

⁷ U.S. Patent No. 6,480,783 B1, issued Nov. 12, 2002 (Ex. 1008).

⁸ U.S. Patent No. 7,158,878 B2, issued Jan. 2, 2007 (Ex. 1009).

parties and invalidity challenges. *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 at 5–6, 12–13 (PTAB Mar. 20, 2020) (precedential) (“*Fintiv*”) (setting out six nonexclusive factors that the Board may consider in determining whether to deny institution because of a parallel district-court proceeding). Our analysis under *Fintiv* is guided by the USPTO Director’s June 21, 2022 Memorandum titled Interim Procedure for Discretionary Denials in AIA Post-Grant Proceedings with Parallel District Court Litigation (“Memorandum”).⁹

The Memorandum sets forth, *inter alia*, that the Board will not discretionarily deny institution under §314(a) when a petitioner submits a so-called *Sotera* stipulation, i.e., the petitioner “stipulates not to pursue in a parallel district court proceeding the same grounds as in the petition or any grounds that could have reasonably been raised in the petition.” Memorandum 7 (citing *Sotera Wireless, Inc. v. Masimo Corp.*, IPR2020-01019, Paper 12 (PTAB Dec. 1, 2020) (precedential as to § II.A)). Such a stipulation mitigates concerns of potentially conflicting PTAB and district-court decisions and duplicative efforts between the district court and PTAB. *Id.*

Patent Owner contends that in light of “parallel District Court Litigation,” i.e., *NorthStar Sys. LLC v. Bayerische Motoren Werke AG*, No. 2:22-cv-00496-JRG (E.D. Tex.), the *Fintiv* factors weigh in favor of denying institution under 35 U.S.C. § 314(a). Prelim. Resp. 20–26. Petitioner responds that discretionary denial is not appropriate because it “has stipulated that if the Board institutes IPR on this Petition, it will not pursue

⁹ Available at: https://www.uspto.gov/sites/default/files/documents/interim_proc_discretionary_denials_aia_parallel_district_court_litigation_memo_20220621.pdf

in the [parallel District Court Litigation] ‘any ground that [Petitioner] raised or reasonably could have raised’ during this proceeding.” Pet. Prelim. Reply 1 (citing *Sotera*, Paper 12 at 18–19; Ex. 1021). Under the mandatory *Fintiv* guidance discussed above, this stipulation is dispositive. Memorandum 7.

Patent Owner responds, however, that Petitioner “should not be credited with this stipulation as it has come at the eleventh hour.” PO Prelim. Sur-Reply 2. Petitioner submitted its *Sotera* stipulation to Patent Owner by email dated September 22, 2023, several days after Patent Owner filed its Preliminary Response.¹⁰ Patent Owner has not brought to our attention any binding precedent that establishes a time limit by which a *Sotera* stipulation must be submitted before we enter our decision on institution, and we are not aware of any such precedent. Nor does Patent Owner allege that it has been prejudiced by the timing of the stipulation.¹¹ Therefore, we are not persuaded that we should disregard Petitioner’s *Sotera* stipulation because of its timing.

Patent Owner also points out that Petitioner has filed a declaratory judgment action concerning the ’943 patent. PO Prelim. Sur-reply 2–3. Although Petitioner states that “[v]alidity is not at issue” in the declaratory-judgment action, as “Petitioner currently seeks a declaratory judgment of noninfringement” (Pet. Prelim. Reply 1 n.1), Patent Owner is doubtful. *See* PO Prelim. Sur-reply 2–3 (contending that “validity will certainly be at issue” in the declaratory-judgment action). Regardless, we are not

¹⁰ Patent Owner does not object to the form in which Petitioner submitted the *Sotera* stipulation, i.e., by email to Patent Owner. Ex. 1021.

¹¹ As a practical matter, of course, a petitioner would need to submit a *Sotera* stipulation well in advance of the Board’s deadline for entering its institution decision, in order to ensure that the Board has the opportunity to consider it.

persuaded that the declaratory judgment action is relevant to this analysis, because Patent Owner's *Fintiv* analysis is based entirely on the parallel District Court Litigation rather than the declaratory-judgment action. Prelim. Resp. 20–26. Patent Owner essentially argues that Petitioner's declaratory-judgment action, by itself, is sufficient to justify discretionarily denying *inter partes* review. We are not aware of any precedential support for such a notion, however.

Accordingly, in view of Petitioner's *Sotera* stipulation (Ex. 1021), we decline to exercise our discretion under § 314(a) to deny institution of *inter partes* review

B. Legal Standards

“In an IPR, the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.” *Harmonic*, 815 F.3d at 1363 (citing 35 U.S.C. § 312(a)(3) (requiring *inter partes* review petitions to identify “with particularity . . . the evidence that supports the grounds for the challenge to each claim”)); *Dynamic Drinkware, LLC v. Nat'l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015) (discussing the burden of proof in *inter partes* review). Although we may indicate in this Decision that certain Patent Owner arguments are not persuasive, in doing so we do not shift the ultimate burden from Petitioner.

A claim is unpatentable under § 103(a) if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). “[W]hen a patent claims a structure already known in the prior art that is altered by the mere

substitution of one element for another known in the field, the combination must do more than yield a predictable result.” *KSR*, 550 U.S. at 416 (citing *U.S. v. Adams*, 383 U.S. 39, 50–51 (1966)). The question of obviousness is resolved on the basis of underlying factual determinations, including (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) when in evidence, objective indicia of non-obviousness (i.e., secondary considerations). *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). Here, the present record contains no evidence of objective indicia of non-obviousness.

C. Level of Ordinary Skill in the Art

Petitioner contends that a person of ordinary skill in the art “would have had at least a bachelor’s degree in Computer or Electrical Engineering, or equivalent engineering discipline, and approximately three years’ experience in telecommunications, navigation, or geolocation systems.” Pet. 3. Petitioner also states that “[a]dditional education could substitute for professional experience, and significant work experience could substitute for formal education.” *Id.* at 3–4.

At this stage of the proceeding, Patent Owner does not dispute Petitioner’s proposed definition of the level of ordinary skill in the art and does not propose an alternative definition. Prelim. Resp. 7.

For purposes of this Decision, we adopt Petitioner’s assessment of the level of ordinary skill in the art as it is consistent with the ’943 patent and the asserted prior art. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001).

D. Claim Construction

In this *inter partes* review, we apply the same claim construction standard that would be used in a civil action under 35 U.S.C. § 282(b). 37 C.F.R. § 42.100(b). In applying this standard, we generally give claim terms their ordinary and customary meaning as would be understood by a person of ordinary skill in the art at the time of the invention and in the context of the entire patent disclosure. *See id.*; *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–14 (Fed. Cir. 2005) (en banc). Only those terms in controversy need to be construed, and only to the extent necessary to resolve the controversy. *Realtime Data LLC v. Iancu*, 912 F.3d 1368, 1375 (Fed. Cir. 2019).

Neither party explicitly proposes a construction of any claim term. The parties dispute, however, how the term “object vector indicator” (or “OVI”) is applied to the prior art, and this dispute implicates the proper construction of the term. We address this dispute in our analysis of Ground 1 below.

E. Ground 1: Obviousness Based on Kreitler, Altman690, and Suomela

Petitioner contends that claims 1–8, 11–18, 23, 25, and 26 would have been obvious over Kreitler, Altman690, and Suomela. Pet. 6–62.

1. Overview of Kreitler (Ex. 1005)

Kreitler is titled “Mapping Method and System,” and “relates to computer-network-based mapping systems.” Ex. 1005, code (54), 1:10–11. Figure 1 of Kreitler, reproduced below, illustrates a map display according to an exemplary embodiment.

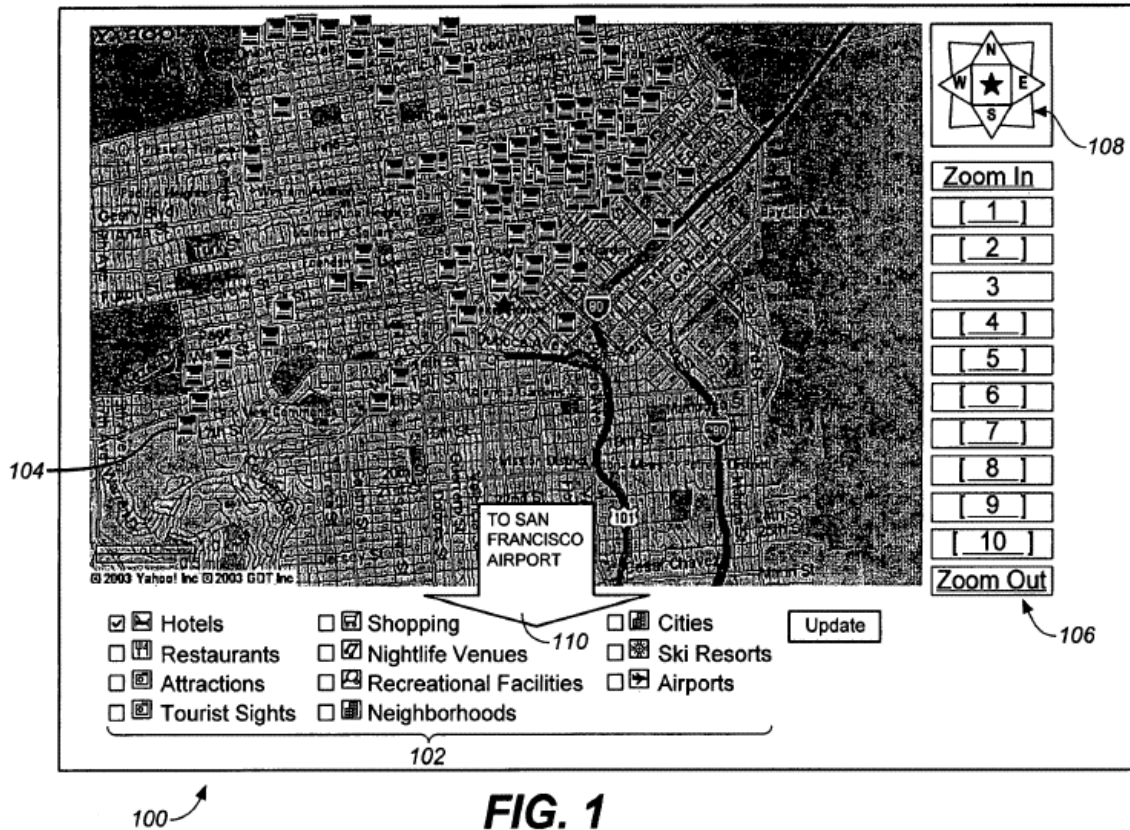


Figure 1 depicts map 100 and a plurality of checkboxes 102 beneath the map. Ex. 1005, 5:36–38. The box next to the label “Hotels” is checked, and icon 104 is displayed on the map at the location of each hotel in the visible area. *Id.* at 5:38–41. Other places that may be of interest to a user, but are located outside of the map’s visible area, may be identified by a distinct icon. *Id.* at 6:43–45. For example, special icon 110 at the bottom edge of the map is an arrow pointing South in the general direction of the closest airport relative to the visible area of the map. *Id.* at 6:55–57. The user may select the special icon, which re-centers and resizes the map’s visible area to show the airport’s location. *Id.* at 6:58–60.

2. Overview of Altman690 (Ex. 1006)

Altman690 is titled “Displaying and Tagging Places of Interest on Location-Aware Mobile Communication Devices in a Local Area Network,” and relates “to mobile communication networks.” Ex. 1006, code (54), ¶ 2. Altman690 discloses a location-based social network manager process executed on a server that determines the geographic location of a user’s mobile communication device, displays a map of an area around the user’s device, and superimposes the location of one or more other users of mobile communications devices on the map. *Id.* ¶ 8. As the user moves, his or her position is updated in real-time on the displayed map. *Id.* ¶ 40.

Figure 2A of Altman690, reproduced below, illustrates a map displayed on a mobile device according to an embodiment.

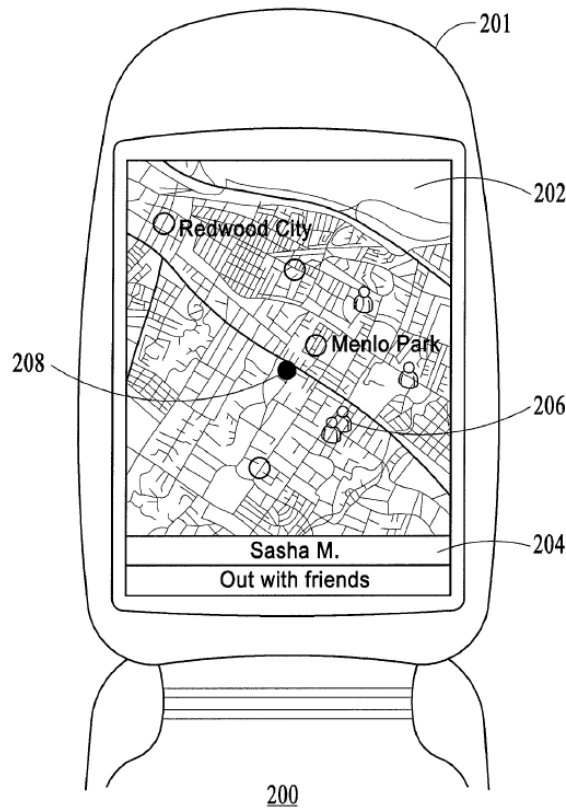


FIG.2A

Figure 2A depicts a user's cellular phone 200 (i.e., mobile communication device) with display screen 202 showing a map with icons superimposed thereon. *Id.* ¶42. Icon 208 indicates the location of the user's device and icons 206 indicate the location of the user's friends (i.e., with respective communication devices) or places of interest. *Id.*

3. *Overview of Suomela (Ex. 1007)*

Suomela is titled "System and Method for Displaying a Map Having Two Scales," and "relates generally to mobile devices." Ex. 1007, code (54), 1:7. Figure 5 of Suomela, reproduced below, illustrates a map display on a mobile device according to an exemplary embodiment.

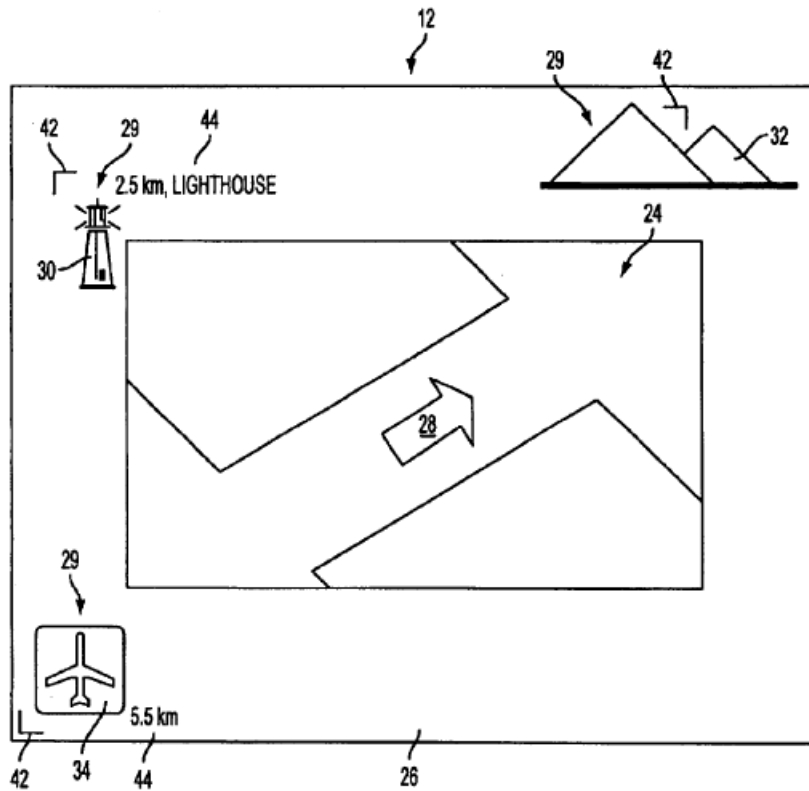


FIG. 5

Figure 5 depicts digital map 12 including detail area 24 and object area 26 generally surrounding the detail area in the peripheral area of the digital map. Ex. 1007, 3:30–34. Detail area 24 includes location indicator 28 showing the current location and direction of travel of the mobile device

determined via global positioning system hardware. *Id.* at 3:35–43. Object area 26 includes several objects 29 representing geographic locations and landmarks (e.g., lighthouse, airport, mountains). *Id.* at 3:48–51, 58–60. Direction indicators 42 and distance indicators 44 may be provided with an object to indicate direction and distance relative to location indicator 28 at the center of the map. *Id.* at 4:34–41.

1. *Independent Claim 1*

Petitioner contends that claim 1 is unpatentable as obvious over Kreitler, Altman690, and Suomela. Pet. 23–35.

Petitioner contends that the combination of Kreitler, Altman690, and Suomela teaches or suggests all of the limitations of claim 1, that the asserted references constitute analogous art, that the ordinarily skilled artisan would have had reason to combine the references, and such a person of ordinary skill would have had a reasonable expectation of success. Pet. 6–22. Petitioner supports its contentions with citations to Kreitler, Altman690, Suomela, and Dr. Rosenberg’s declaration. *Id.*

Turning to the elements of claim 1, Petitioner contends that Kreitler in combination with Altman690 teaches the preamble of claim 1 and limitations 1a, 1b, 1c, 1d, 1e and 1f. Pet. 23–32 (citing Ex. 1005, 1:38–46, 2:20–24, 5:36–37, 6:43–45, 6:50–55, 6:67–7:4, 10:27–29, 12:3–10, 12:16–18, Figs. 1, 2, 4, 15; Ex. 1006 ¶¶ 8, 9, 41, 55, 77, Fig. 8B; Ex. 1003 ¶¶ 101–114, 116–118). Petitioner contends, for example, that Kreitler’s special icon 110 corresponds to the claimed OVI that is placed in a position corresponding to an off-map MO. *Id.* at 23–24 (citing Ex. 1005, 6:43–62, Fig. 1; Ex. 1003 ¶ 97). Petitioner further contends that “*Altman690* discloses a social-networking system for displaying electronic maps with icons representing real-time locations of social network users and POIs.”

Pet. 7 (citing Ex. 1006 ¶¶ 8, 9; Ex. 1003 ¶¶ 61–62). Petitioner submits that “a POSITA would have found it obvious and advantageous to include *Altman690*’s social-networking functionality within *Kreitler*’s location-based items to enable sharing/accessing POIs between users.” Pet. 11 (citing Ex. 1003 ¶ 68).

For limitations 1e and 1g, Petitioner relies on *Kreitler* individually and in combination with *Suomela*. Pet. 29–30, 32–34 (citing Ex. 1005, 5:36–41, 6:43–45, 6:51–57, Fig. 1; Ex. 1007, Abstract, 2:1–15, 4:34–41, Fig. 5; Ex. 1003 ¶¶ 115, 119–123). Petitioner asserts, for example, that *Suomela* “expressly discloses displaying both distance and travel-related information,” and specifically discloses “‘a digital map’ including objects ‘in a peripheral portion’ representing off-map locations, placed according to the direction to the off-map locations.” *Id.* at 33 (citing Ex. 1007, Abstract, 2:1–15, 4:34–41, Fig. 5; Ex. 1003 ¶¶ 121–122). According to Petitioner, “[a] POSITA would have been motivated to add *Suomela*’s distance and travel-related information to *Kreitler*’s OVI] to provide further helpful information to a user.” *Id.* at 33 (citing Ex. 1003 ¶ 123). Petitioner further contends that:

The ’943, *Kreitler*, *Altman609*, and *Suomela* are all in the field of mapping on electronic devices. All four address the known problem of displaying MO information, with *Kreitler*, *Altman609*, and *Suomela* disclosing known solutions, the combination of which yields predictable results. Therefore, it would have been obvious for a POSITA to combine *Kreitler*, *Altman690*, and *Suomela* for a more effective and efficient navigation system showing POIs on electronic maps.

Id. at 10 (citing Ex. 1003 ¶ 67).

For limitations 1h to 1k, Petitioner relies on *Kreitler*. Pet. 34–35 (citing Ex. 1005, 6:50–60, 12:32–36, Fig. 1; Ex. 1003 ¶¶ 124–126).

Petitioner contends, for example, that Kreitler teaches that clicking special icon 110 recenters and resizes the map to show the San Francisco Airport in the image. Pet. 35 (citing Ex. 1005, 6:50–60, 12:32–36).

Having considered Petitioner’s contentions, Patent Owner’s arguments (discussed below), and the evidence currently of record, we determine that Petitioner is reasonably likely to prevail in showing that claim 1 would have been obvious over the combination of Kreitler, Altman 690, and Suomela.

Patent Owner disputes that Kreitler teaches limitation 1f, “computing a placement position of an OVI referencing the MO on the map-display application.” Prelim. Resp. 10–12. Patent Owner contends that U.S. Patent No. 8,032,297¹² “describes several methods of computing a placement position of the OVI,” such as “placement of OVI 208 . . . based on ‘the intersection of an imaginary line 212 connecting the location markers 204 and 206 and the periphery of the map region 202b.’” *Id.* at 10 (citing Ex. 2003, 4:36–48). According to Patent Owner, “[n]othing in the Kreitler reference approaches the level of detail provided by the ’943 Patent specification regarding the computation of a placement icon.” *Id.* at 12.

On the current record, this argument is unpersuasive. To support Ground 1, Kreitler need not teach what is disclosed in the ’297 patent’s Specification, i.e., “the level of detail provided by the ’943 Patent specification” (Prelim. Resp. 12), but rather what is claimed. *See In re Hiniker*, 150 F.3d 1362, 1369 (“the invention disclosed in Hiniker’s written description may be outstanding in its field, but the name of the game is the

¹² U.S. Patent No. 8,032,297 (Ex. 2003) is incorporated by reference in the ’943 Patent. Pet. 4 (citing Ex. 1001, 1:8–13).

claim.”). Claim 1 requires “computing a placement position of an OVI,” not necessarily creating an imaginary line between two points and placing the OVI on an intersection of that line and the periphery of a visible map region. Further, to the extent that Patent Owner is arguing that “computing” the OVI’s placement position requires some specific computation process, such an argument is also unpersuasive. The specific excerpt of the ’297 patent’s Specification relied on by Patent Owner is limited to specific embodiments of the invention, and thus does not define what is meant by “computing” as recited in claim 1, and, in any event, does not appear to actually discuss any computation:

[I]n the presently-preferred embodiment . . . [t]he OVI 208 may be positioned at the intersection of an imaginary line 212—connecting the location markers 204 and 206—and the periphery of the map region 202b. In an alternative preferred embodiment, the OVI 208 may be positioned at the intersection of the imaginary line 212 and the border of the map-display application 200. In these embodiments, the positioning of the OVI 208 may be along a straight line between the visible location marker 206 and the invisible location marker 204. In alternative embodiments, the positioning of the OVI 208 may vary depending on other factors . . .”

Ex. 2003, 4:36–48 (emphasis added); *see id.*, Fig. 2C (illustrating imaginary line 212 between location markers 204, 206). This excerpt describes specific embodiments of the invention rather than the invention itself. *See Phillips*, 415 F.3d at 1323 (“although the specification often describes very specific embodiments of the invention, we have repeatedly warned against confining the claims to those embodiments.”). Moreover, the excerpt seems to conceptualize the idea that the OVI is positioned in the direction of the off-map MO with respect to an on-map MO, rather than to describe a particular computation for determining that position.

Patent Owner next argues that Kreitler does not teach OVIs. Prelim. Resp. 12–18. Patent Owner asserts that Kreitler’s special icon 110 is “essentially just a static hyperlink” and “not a vector,” by which we understand Patent Owner to argue that the Kreitler graphical icon fails to represent “some magnitude and direction associated with the indicator.” Prelim. Resp. 13. According to Patent Owner, “nothing in Kreitler indicates that the direction arrow has anything to do with the magnitude of distance and direction between the hotel 104 and the San Francisco Airport.” *Id.* at 14.

Patent Owner’s argument is unpersuasive on the current record for several reasons. First, we disagree that special icon 110 has nothing to do with the direction between hotel 104 and the San Francisco Airport. On the contrary, special icon 110 is depicted as an arrow that informs a user of the location of the closest airport by “point in the general direction” of the airport.¹³ Ex. 1005, 6:43–55.

Second, Patent Owner improperly interprets the term “OVI” to require distance information. At the outset we note that Patent Owner has not expressly requested that any claim terms should be construed in this proceeding. *See supra* Section II.D. Patent Owner apparently reads the embedded term “vector” in isolation rather than as part of the term “object vector indicator.” *See IGT v. Bally Gaming Int’l, Inc.*, 659 F.3d 1109, 1117 (Fed. Cir. 2011) (“Extracting a single word from a claim divorced from the surrounding limitations can lead construction astray.”); *Trivascular, Inc. v.*

¹³ Patent Owner alleges that “[t]he placement of the ‘south’ icon is likely hard coded as static information and therefore not computed by Kreitler.” Prelim. Resp. 12. This allegation is unsupported attorney argument to which we give little weight. *In re Geisler*, 116 F.3d 1465, 1470 (Fed. Cir. 1997).

Samuels, 812 F.3d 1056, 1062 (Fed. Cir. 2016) (construing claim terms without considering the context in which those terms appear is not reasonable). Even if “vector,” read in isolation, means something akin to a “Euclidean vector” that would arguably contain both a “magnitude” (which we understand Patent Owner to mean distance) and a direction, an “OVI” would not necessarily contain this exact information. Moreover, defining “OVI” to contain both distance and direction would render superfluous the language in claim 1 that expressly requires the created OVI to “contain[] the distance . . . information.” *See Stumbo v. Eastman Outdoors, Inc.*, 508 F.3d 1358, 1362 (Fed. Cir. 2007) (construing a claim in a way that renders a term superfluous is “a methodology that [our reviewing court] has denounced”). We discern no reason to limit the claim language in such a way.

Construing “OVI” as a “Euclidian vector” that necessarily contains both distance and direction information would also be contrary to the ’943 patent’s written description. The written description indicates that the word “vector” is broader than “Euclidean vector,” in that it may simply be an “arrow” that is “pointing in the direction of the referenced remote location marker.” Ex. 1001, 3:66–4:4. The written description states that “[i]nformation displayed in the OVI . . . may include a vector (e.g. arrow) pointing in the direction of the referenced remote location marker, the distance and travel time to the remote location marker.” (Ex. 1001, 3:66–4:3 (emphasis added)), indicating that such information is optional rather than always present.

Patent Owner next argues that ““computing distance and travel-related information from a location within the selected area of the electronic map to the MO’ . . . must be performed before displaying the OVI,” but Kreidler, on which Petitioner relies to teach the computing step, fails to teach this.

Prelim. Resp. 15–16. According to Patent Owner, because Kreitler’s special icon 110 “is displayed without any map object selected, distance and direction cannot be known at the time of the [special icon 110’s] creation and placement.” *Id.* at 16 (citing Ex. 1005, 7:5–9). Patent Owner thus asserts that “the ‘special icon’ is not **created** containing the distance and travel-related information.” *Id.*

Although Patent Owner is correct that Petitioner relies on Kreitler to teach the “computing distance and travel-related information from a location within the selected area of the electronic map to the MO” (limitation 1e), it is limitation 1g (“creating the OVI containing the distance and travel-related information”), not limitation 1e, that requires computing distance and travel-related information before (or simultaneously with) creating the OVI. Indeed, this is precisely the limitation that Patent Owner asserts that Kreitler does not teach: “[Kreitler’s] ‘special icon’ is not created containing the distance and travel-related information.” Prelim. Resp. 16. For limitation [1g], Petitioner relies on the combination of Kreitler and Suomela. Pet. 32–34. Petitioner contends that Suomela “expressly discloses displaying both distance and travel-related information” with “objects” in a “peripheral portion” of a “digital map” representing “off-map locations,” the objects “placed according to the direction to the off-map locations.” *Id.* at 33 (citing Ex. 1007, Abstract, 2:1–15, 4:34–41, Fig. 5; Ex. 1003 ¶¶ 122–123). Thus, Patent Owner’s assertion that Kreitler’s “‘special icon’ is not created containing the distance and travel-related information” misses the mark. Prelim. Resp. 15.

Patent Owner further asserts that Suomela teaches “distance and direction information as **separate** from object indicators, not **contained** in object indicators.” Prelim. Resp. 17. According to Patent Owner, “Suomela

. . . states that ‘direction indicators 42 and distance indicators 44 may be selectively shown,’ indicating that these are not contained by the objects 29.” *Id.* at 18 (citing Ex. 1007, 4:45–47). Patent Owner contends that “Suomela’s teaching of separate indicators for distance and direction teaches against an OVI **containing** distance and direction or, at the very least, provide contradictory teachings that the Petitioner should have addressed.” *Id.*

Although Patent Owner does not state what it means for an OVI to “contain[] . . . information,” its argument implies that the information must be within some boundary of an icon, like lighthouse 30, mountain range 32, or airport 34 depicted in Figure 5 of Suomela. On the current record, however, we are not aware of any reason to interpret this limitation so narrowly, or why the cited prior art fails to teach it based on the graphics depicted in Kreitler’s Figure 1 and Suomela’s Figure 5. For example, it may be reasonable to consider each object 29 depicted in Figure 5, which contains multiple elements (e.g., icon 30, direction indicator 42, and distance indicator 44) as an OVI. *See* Ex. 1007, 4:34–37 (direction indicators 42 and distance indicators 44 are “include[d] . . . for each of the objects 29”). Each OVI would therefore “contain” the distance and direction indicators.

In any event, we understand that Petitioner’s proposed combination includes Suomela’s distance indicators “*within* [Kreitler’s] special icons.” Pet. 15 (emphasis added). We understand this to mean that it would have been obvious to one of ordinary skill in the art to have included distance information inside of the arrow-shaped special icon 110 depicted in Figure 1 of Kreitler, in which case the special icon would “contain” distance and direction information even under Patent Owner’s narrow construction of the term. Patent Owner has not pointed us to any teaching in Suomela that

discourages, or would lead in a direction away from, such a combination or modification, and thus Patent Owner's teaching-away argument is also unpersuasive. *See In re Gurley*, 27 F.3d 551, 553 (Fed. Cir. 1994) (“A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant.”).

2. *Independent Claims 18 and 23 and Dependent Claims 2–8, 11–17, 25, and 26*

Claims 18 and 23 are independent and, although there are differences in language, they contain limitations similar to the limitations recited in independent claim 1. Claims 2–8, 11–17 depend from claim 1, and claims 25 and 36 depend from claim 23. Petitioner contends that the limitations of independent claims 18 and 23 and the additional limitations of dependent claims 2–8, 11–17, 25, and 26 are taught or suggested by the combination of Kreitler, Altman690, and Suomela. Pet. 35–53. Patent Owner addresses Petitioner's contentions with respect to claim 18, but does not, at this stage of the proceeding, discuss any of the other claims.

For claim 18, Patent Owner argues that “[o]ne of ordinary skill in the art would not have been motivated to modify Kreitler to add more OVIs, despite the teachings of Suomela, at least because such an addition would render Kreitler inoperable.” Prelim. Resp. 18. According to Patent Owner, “if Kreitler were modified to add a second icon whose location is “south,” Kreitler does not explain how or where that icon could be displayed other than by overwriting the San Francisco Airport icon and Petitioner does not attempt to explain the inoperability of this combination.” *Id.*

On this record, this argument is unpersuasive. Although Kreitler only displays one special icon, Petitioner relies on the combination of Kreitler and Suomela, not on Kreitler alone, to teach displaying multiple OVIs. Suomela teaches how multiple icons can be displayed. Patent Owner has not identified any reason why more than ordinary skill would be required to display more than one of Kreitler's special icons in accordance with Suomela's teaching.

Patent Owner also argues that the combination of Kreitler and Suomela fails to teach displaying multiple OVIs because “[n]one of [Suomela's] icons contain distance or travel-related information.” Prelim. Resp. 18. That is, according to Patent Owner, “Suomela's icons alone would not satisfy the OVI limitations” because “[d]istances are presented separately (e.g., [distance indicators] 44) and travel-related information, such as direction, is presented with arrows 42.” *Id.* This argument is unpersuasive because, among other reasons, it is premised on the combination of references not teaching a limitation that is not present in claim 18. That is, unlike claim 1, claim 18 does not recite “creating the OVI containing the distance and travel-related information,” but only recites “creating an object vector indicator (“OVI”) for each of the MOs.” Ex. 1001, 19:20–21.

3. *Conclusion as to Ground 1*

We determine, on the current record, that Petitioner demonstrates a reasonable likelihood of prevailing in showing that independent claim 1 would have been obvious over Kreitler and Suomela. Petitioner thus satisfies the threshold requirement for institution of *inter partes* review on the basis of Ground 1.

“When instituting post-grant review, the Board will authorize the review to proceed on all of the challenged claims and on all grounds of unpatentability asserted for each claim.” 37 C.F.R. § 42.208(a). We must “either (1) institute as to all claims challenged in the petition and on all grounds in the petition, or (2) institute on no claims and deny institution.” Patent Trial and Appeal Board Consolidated Trial Practice Guide (Nov. 2019),¹⁴ 5–6, 64; *see also* 37 C.F.R. § 42.108(a), *PGS Geophysical AS v. Iancu*, 891 F.3d 1354, 1359–60 (Fed. Cir. 2018) (stating a decision to institute is “a simple yes-or-no institution choice respecting a petition, embracing all challenges included in the petition”). Thus, because we have decided to grant institution on Ground 1 with respect to claim 1, we must do the same for claims 18 and 23 and dependent claims 2–8, 11–17, 25, and 26.

F. The Remaining Grounds

As discussed above, because we have decided to institute *inter partes* review based on Ground 1, we must do the same for Grounds 2–4 as well, as institution must include all challenged claims under all asserted grounds. We note that, similar to Ground 1, under Grounds 2–4 Petitioner has mapped the limitations of the challenged claims to the teachings of the prior art combinations and articulated reasons why one of ordinary skill in the art would have combined the references, supporting its contentions with citations to the Rosenberg Declaration. Patent Owner at this stage does not raise any additional arguments specifically directed to these grounds.

¹⁴ Available at <https://www.uspto.gov/sites/default/files/documents/tpgnov.pdf?MURL=TrialsPracticeGuideConsolidated>

We note that for the remaining claims and grounds, Petitioner has mapped the limitations of the challenged claims to the teachings of the prior art combinations and articulated reasons why one of ordinary skill in the art would have combined the references, supporting its contentions with citations to the Dr. Rosenberg's Declaration. Patent Owner at this stage does not raise any additional arguments specifically directed to these claims and grounds.

III. CONCLUSION

After considering the evidence and arguments presented in the Petition, Preliminary Response, Reply, and Sur-Reply, we determine that the information presented shows a reasonable likelihood that Petitioner would prevail in establishing that at least one of claims 1–26 of the '943 patent is unpatentable.

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review is instituted for claims 1–26 of the '943 patent on the unpatentability grounds asserted in the Petition; and

FURTHER ORDERED that pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of a trial, which commences on the entry date of this decision.

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