

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.

IPR2023-01190
Patent 6,898,432 B1

Before KRISTEN L. DROESCH, MEREDITH C. PETRAVICK, and
BENJAMIN D. M. WOOD, *Administrative Patent Judges*.

WOOD, *Administrative Patent Judge*.

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

I. INTRODUCTION

A. *Background*

BMW of North America, LLC (“Petitioner”) filed a Petition (Paper 1, “Pet.”) requesting *inter partes* review of claims 1–8 (all claims) of U.S. Patent No. 6,898,432 B1 (Ex. 1001, “the ’432 patent”). NorthStar Systems LLC (“Patent Owner”) filed a Preliminary Response (Paper 6, “Prelim. Resp.”). In accordance with our authorization (*see* Ex. 3001), Petitioner filed a Preliminary Reply to Patent Owner’s Preliminary Resp. (Paper 7, “Pet. Prelim. Reply”), and Patent Owner filed a responsive Preliminary Sur-Reply (Paper 9, “PO Prelim. Sur-reply”).

We have authority under 35 U.S.C. § 314, which provides that an *inter partes* review may not be instituted “unless . . . there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a). Upon considering the Petition, Preliminary Response, Preliminary Reply, Preliminary Sur-Reply, and the present record, we determine that Petitioner has satisfied this threshold requirement, and therefore we institute *inter partes* review of claims 1–8 of the ’432 patent.

B. *Related Proceedings*

The parties state that the ’432 patent has been asserted in the following district 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 Company*, 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); and

BMW of North America, LLC v. NorthStar Systems LLC, No. 6:23-cv-00456-ADA (W.D. Tex.) (filed June 16, 2023), a declaratory-judgment action concerning the '432 patent initiated by Petitioner against the Patent Owner. Pet. 69; Paper 5 (Mandatory Notices), 1.

C. The '432 Patent

The '432 patent, titled “Route-Based Communication Planning Architecture and Method for Wireless Communication,” issued May 24, 2005, from an application filed Nov. 21, 2000. Ex. 1001, codes (21), (22), (45), (54).¹ The '432 patent relates to “a method of planning which of various wireless communication options to utilize for wireless communication in a mobile environment when one or more wireless communication options may be available for use, based on the location of the mobile user, the route the mobile user is travelling, and the availability of the various wireless communication options along the route.” *Id.* at 1:6–12.

The '432 patent states that “wireless communication options” means “the various wireless communication networks available,” including “the various levels of service that each type of wireless communication network has available (i.e., transmission power level), as well as any other option that may now be available or will be available in the future for wireless communication.” *Id.* at 1:45–51. Figure 1 “provides a general illustration of the presently available wireless communication systems”² (*id.* at 2:26–27), and is reproduced below.

¹ The '432 patent has expired.

² We understand wireless communication “systems” to be synonymous with wireless communication “networks.”

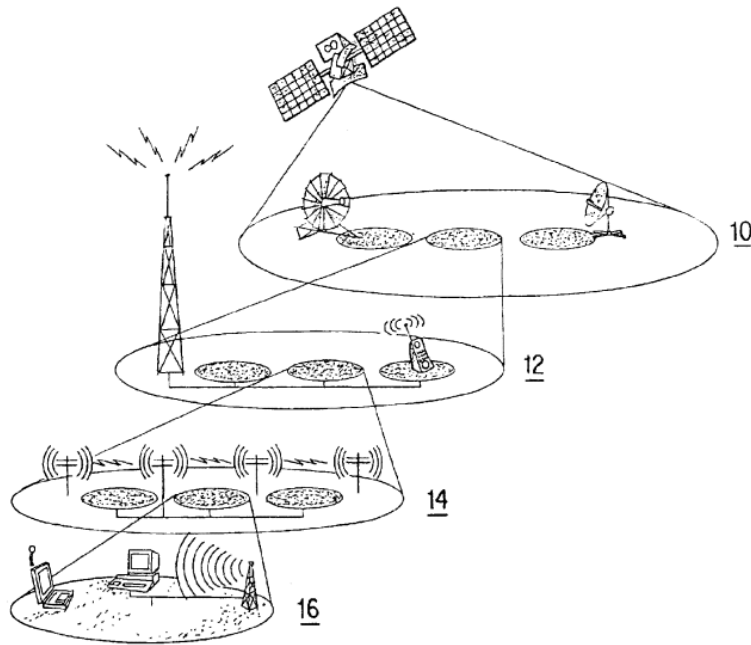


FIG. 1
Prior Art

As depicted in Figure 1, wireless communication networks available at the time of the invention included: (1) regional area wireless networks 10, such as satellite-based networks, which provide coverage over a large geographic region; (2) wide area networks 12, such as land-based cellular phone systems, which provide coverage over relatively large geographic regions, but to a lesser extent than regional area networks; (3) metropolitan area networks 14, which provide coverage only in metropolitan areas; and (4) wireless local area networks 16, which provide “very limited geographic coverage, typically on the order of 100 yards or less.” *Id.* at 2:26–52.

The '432 patent explains that a mobile communication device switching among wireless networks, i.e., “vertical handoff,” may “involve a cell phone having multi-network capability selecting which network to use based upon factors such as cost, availability and performance and switching to a second network if coverage from the first network is lost.” *Id.* at 3:7–

13. The '432 patent notes that there are problems with this technique, including “a loss of service due to the time that it takes to make the switchover,” and an inability to switch networks when the user first enters the coverage area, which may result in the user paying longer than necessary for a more expensive network. *Id.* at 3:37–47. To address these shortcomings, the '432 patent provides “a predictive method of achieving seamless vertical handoff in a wireless communication system.” *Id.* at 3:57–58. For example, as a vehicle traverses a route, a mobile data communications device determines what wireless communication networks are available at particular points in the route and whether (and when) it should switch networks. *Id.* at 3:36–44. Figure 2 depicts an exemplary system and is reproduced below.

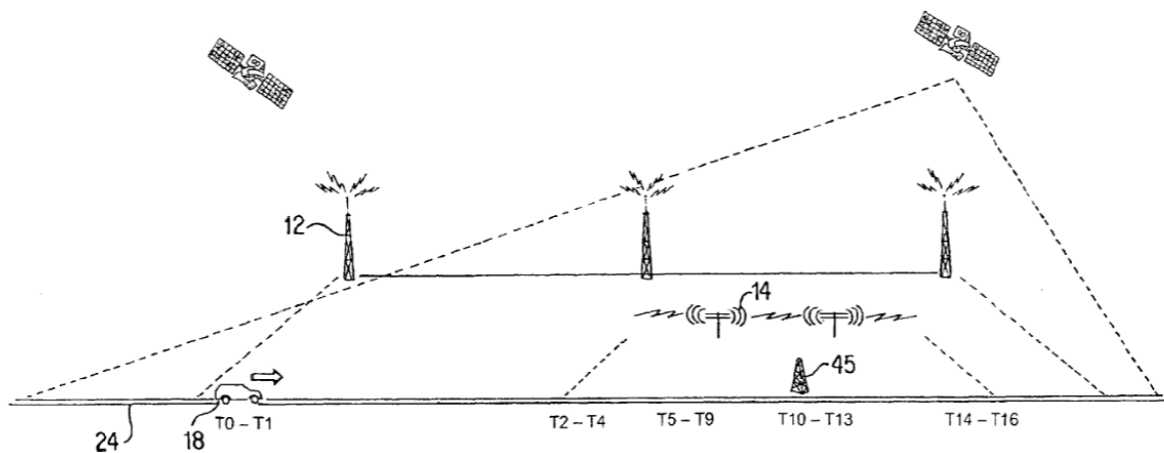


FIG. 2

Figure 2 depicts vehicle 18 traveling along route 24 through various wireless-network service areas. Ex. 1001, 4:46, 6:6. Vehicle 18 is equipped with mobile data communication device 20 and navigation system 26. *Id.* at 5:19–20, 29–30, Fig. 5. Mobile data communication device 20 is, in turn,

provided with communication availability monitor 34 and communication manager 36. *Id.* at 5:18–28, Fig. 3. Communication availability monitor 34 “obtains information about route 24” from an external source such as the vehicle's navigation system, creates a database of the coverage areas of the wireless networks that mobile communication device 20 can use as it traverses route 24, and “informs communication manager 36 what wireless networks and systems are available” along the route, such as satellite network 10, wide-area network (WAN) 12, and metropolitan area access network (MAN) 14. *Id.* at 5:59–6:1. At time T0, communication manager 36 determines that WAN 12 is the better wireless network to use, based on cost or performance, and at “T1 connects mobile communications device 20 to WAN 12.” *Id.* at 6:1–5. As vehicle 18 traverses route 24, it reaches various points along the way that are covered by different wireless networks, and at or just before the coverage boundary (e.g., time T2 for MAN 14), communication service availability monitor 34 informs communication manager 36 that coverage is available on a different network so that communication manager 36 can determine whether “the network to which mobile data communication device 20 is connected should be switched.” *Id.* at 6:6–15, Fig. 3.

D. The Challenged Claims

Petitioner challenges claims 1–8 of the '432 patent. Pet. 1. Claims 1, 2, 4, 7, and 8 are independent. Claims 1, 2, and 4 are directed to methods of selecting from a plurality of “wireless communication options” available to a mobile communication device traveling along a specified route, and claims 7 and 8 are directed to methods of storing and updating data indicative of coverage areas for wireless communication options available to a mobile

communication device traveling along a specified route. Ex. 1001, claims 1, 2, 4, 7, 9.

Claim 1 is reproduced below (with Petitioner's limitation designations in brackets added):

1. [1pre] A method of selecting which of a plurality of wireless communication options will be used by a mobile communication device, comprising the steps of:

[1A(i)] (a) storing in a database information indicative of coverage areas for the wireless communication options along a route that the mobile communication device will be traversing, [1A(ii)] including storing boundary locations of the coverage areas for the wireless communication options along the route where the boundary locations stored are limited to boundary locations that are on streets of the route;

[1B] (b) determining at the mobile communication device where on the route that the mobile communication device is at as it traverses the route;

[1C] (c) accessing the database to obtain information regarding the communication options available alone³ the route;

[1D] (d) determining whether to switch from a first one of the wireless communication options presently being used to a second one of the wireless communication options when the mobile communication device approaches a boundary of a coverage area of one of the wireless communication options based on the wireless communication options available once the boundary is crossed and those that will be available further along the route;

³ We, like Petitioner (Pet. 27 n.4), understand “alone the route” to be a typographical error and interpret all instances of this phrase in claims 1, 2, 4, 7, and 8 to mean “along the route.”

[1E] (e) switching from the first one of the wireless communication options to the second one of the wireless communication options if the determination was made to switch to that second one of the wireless communication options; and

[1F(i)] (f) obtaining updated information concerning the coverage areas of the wireless communication options and updating the database with the updated information,

[1F(ii)] wherein one of the plurality of wireless communication options is not using any wireless communication, and

[1F(iii)] wherein the step of obtaining updated information concerning the coverage areas of the wireless communication options includes obtaining this information from providers of the wireless communication options.

Ex. 1001, 11:60–12:30 (Claim 1).

E. Asserted Grounds of Unpatentability

Petitioner contends that the challenged claims are unpatentable based on the following specific grounds (Pet. 2):

No.	Claims Challenged	35 U.S.C. §	Reference(s)/Basis
1	1, 2	§ 103 ⁴	Oh, ⁵ Clark, ⁶ McGregor ⁷
2	3–6	§ 103	Oh, Clark, McGregor, Steer ⁸
3	7, 8	§ 103	Oh, Clark, Steer

Petitioner also relies on the Declaration of Dr. Samuel P. Pullen (Ex. 1003) to support its proposed grounds.

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 '432 patent based on the related district-court matters identified above. Prelim. Resp. 7–13.

⁴ Because the '432 patent issued from an application filed before March 16, 2013, the effective date of the amendment to 35 U.S.C. § 103 enacted by the Leahy-Smith America Invents Act (AIA), we apply the pre-AIA version of this section. *See* AIA, Pub. L. No. 112–29, § 3(n)(1), 125 Stat. 284, 293 (2011).

⁵ US 6,714,789 B1 (Mar. 30, 2004) (Ex. 1005). Oh issued from an application filed September 18, 2000, and thus qualifies as prior art under 35 U.S.C. § 102(e).

⁶ US 6,611,687 B1 (Aug. 26, 2003) (Ex. 1010). Clark issued from an application filed November 15, 1999, and thus qualifies as prior art under 35 U.S.C. § 102(e).

⁷ US 5,577,100 (Nov. 19, 1996) (Ex. 1009).

⁸ US 6,845,246 B1 (Jan. 18, 2005) (Ex. 1006). Steer issued from an application filed June 15, 2000, and thus qualifies as prior art under 35 U.S.C. § 102(e).

Section 314(a) grants the Director discretion to deny institution of an *inter partes* review. *SAS Inst., Inc. v Iancu*, 584 U.S. ---, 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 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))

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

(precedential as to § II.A)). A *Sotera* stipulation mitigates concerns of potentially conflicting PTAB and district-court decisions and duplicative efforts between the district court and PTAB. *Id.*

Petitioner has submitted a *Sotera* stipulation in this case. Ex. 1012; see Pet. Prelim. Reply 1. Patent Owner acknowledges that Petitioner’s *Sotera* stipulation “moot[s] Patent Owner’s *Fintiv* contentions in this proceeding.” Ex. 3001. Accordingly, and in light of the mandatory *Fintiv* guidance discussed above, we decline to exercise our discretion under § 314(a) to deny institution of *inter partes* review.

B. 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 of experience in navigation or geolocation systems along with a background in telecommunications,” but “[a]dditional education could substitute for professional experience, and significant work experience could substitute for formal education.” Pet. 10. Patent Owner does not oppose Petitioner’s contention. See Prelim. Resp. 4 (stating that, “[f]or the purposes of this Preliminary Response only, Patent Owner utilizes Petitioner’s proposed level of ordinary skill in the art”).

At this stage of the proceeding, we adopt Petitioner’s unopposed definition for purposes of this Decision. We also look to the cited prior art references as evidence of the level of ordinary skill at the time of the invention. See *Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001) (explaining the level of ordinary skill in the art may be evidenced by the cited references themselves).

C. Claim Construction

We construe claim terms “using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. [§] 282(b),” namely that articulated in *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (en banc). *See* 37 C.F.R. § 42.100(b). Thus, we accord claim terms their ordinary and customary meaning as would have been 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. *Phillips*, 415 F.3d at 1312–13. “In determining the meaning of the disputed claim limitation, we look principally to the intrinsic evidence of record, examining the claim language itself, the written description, and the prosecution history, if in evidence.” *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 469 F.3d 1005, 1014 (Fed. Cir. 2006) (citing *Phillips*, 415 F.3d at 1312–17). Any special definitions for claim terms must be set forth in the Specification with reasonable clarity, deliberateness, and precision. *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994). We need only construe terms “that are in controversy, and only to the extent necessary to resolve the controversy.” *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999); *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co. Matal*, 868 F.3d 1013, 1017 (Fed. Cir. 2017), *cert. denied* 138 S. Ct. 1695, 200 L. Ed. 2d 951 (2018).

“wireless communications options”

In the Petition and Preliminary Response, neither party expressly proposes a construction of any claim term. The parties dispute, however, how the term “wireless communications options” is applied to the prior art. In the Preliminary response, Patent Owner asserts that Oh “merely discloses

handoff between frequencies, which is only a single wireless communications option” rather than a selection between a plurality of communication options, as the claims require. Prelim. Resp. 6. Patent Owner further contends that “Petitioner’s argument regarding wireless communications options is cumulative of the arguments made by the Office and overcome during prosecution.” *Id.*

In its Preliminary Reply, Petitioner responds that the prosecution history establishes that the Examiner rejected the applicant’s construction of “wireless communications options” to exclude base-station hopping (taught by the Liu reference, the primary reference cited to reject the pending claims). Pet. Prelim. Reply 1–2. Petitioner also contends that “[t]he patent itself confirms the term ‘wireless communications options’ should be construed broadly.” *Id.* at 2.

In its Preliminary Sur-reply, Patent Owner counters that the prosecution history establishes that “the applicant set forth an explicit definition in response to a 35 U.S.C. § 112 rejection and that the rejection was overcome in light of applicant’s arguments.” PO Prelim. Sur-reply 1. According to Patent Owner:

In response to the rejection, the Applicant stated: “[T]he Applicant at page 2 provides an express statement regarding what he means by this term: ‘By wireless communication options, it is meant the various wireless communication networks available, ...’ Application at 2:9-13. The Applicant provided specific examples: regional area wireless networks 10, wide area networks 12, metropolitan area networks 14, and local area networks 16. Application at 3:19-21; see also Figure 1.” Ex. 1002 at 293. This definition overcame the 112 rejections. *Id.* at 299.

Id. at 1–2 (citing Ex. 1002, 293).

The Specification of the '432 patent expressly defines “wireless communication options” as follows:

By wireless communication options, it is meant the various wireless communication networks available, discussed below, the various levels of service that each type of wireless communication network has available (i.e. transmission power level), as well as any other option that may now be available or will be available in the future for wireless communication.

Ex. 1001, 1:45–51.

Based on this definition, “wireless communication options” encompasses not only the available wireless communication networks, but also levels of service within each type of network and, most broadly, “any other option . . . available” for wireless communication. The availability of different carrier frequencies used by a cellular telephone communication system and the option to switch between multiple carrier frequencies as taught by Oh would seem to fall within the “any other . . . option . . . available” part of this definition.

As noted above, however, Patent Owner asserts that during prosecution the applicant expressly defines “wireless communication options” to mean “the various wireless communication networks available.” PO Prelim. Sur-reply 2–3. We understand Patent Owner to be arguing that the applicant disclaimed the “any other option . . . available” portion of the Specification’s wireless-communication-options definition.

“[I]n order for prosecution disclaimer to attach, the disavowal must be both clear and unmistakable.” *3M Innovative Properties Co. v. Tredegar Corp.*, 725 F.3d 1315, 1325–26 (Fed. Cir. 2013). On the current record, we do not find a clear and unmistakable disclaimer of the “any other option . . . available” language. In responding to the Examiner’s indefiniteness

rejection, the applicant did not redefine “wireless communication options,” but rather referred the Examiner to the Specification’s definition. Ex. 1002, 293. In doing so, the applicant: (1) quoted only the portion of the definition referring to “the various wireless communication networks available . . .”; but (2) cited to the entire definition, including the “any other option . . . available” language. *See id.* (“the Applicant at page 2 [of the Specification] provides an express statement regarding what he means by this term: ‘By wireless communication options, it is meant the various wireless communication networks available . . .’ Application at 2:9–13.”).¹⁰ This response is, at best, ambiguous. By quoting only a portion of the definition, the applicant suggested a desire to limit the meaning of the term to only the quoted portion; yet by citing to the entire definition, the applicant suggested that the applicant wished to retain the full breadth of the definition. Any suggestion that the applicant wished to limit “wireless communication options” to only the quoted portion of the definition is undercut by applicant citing to, and thus referring the Examiner to, the entire definition. Therefore, on the current record, we are not persuaded that the applicant clearly and unmistakably disclaimed claim scope. *See K-fee Sys. GmbH v. Nespresso USA, Inc.*, ---F.4th--- (Fed. Cir. 2023) (“decidedly ambiguous” statements by applicant do not constitute prosecution disclaimer). Therefore, for purposes of this Decision, we apply the express definition of “wireless communication options” provided in the Specification.

¹⁰ “Application at 2:9–13” corresponds to page 5, lines 9 through 13 of Exhibit 1002. *Id.* at 5:9–13

D. Legal Standards Used in the Merits Analysis

“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.

E. Ground 1: Claims 1 and 2—Oh, Clark, and McGregor

Petitioner contends that claims 1 and 2 would have been obvious over the combination of Oh, Clark, and McGregor. Pet. 11–37. Patent Owner opposes. Prelim. Resp. 6.

1. Oh (Ex. 1005)

Oh is titled “Method and System for Inter-Frequency Handoff and Capacity Enhancement in a Wireless Telecommunications Network,” and relates to “allocation of air interface resources.” Ex. 1005, code (54), 1:10–12. Oh explains that “[i]n a typical cellular radio communications system (wireless telecommunications network), an area is divided geographically into a number of cell sites, each defined by a radio frequency (RF) radiation pattern from a respective base transceiver station (BTS) antenna.” *Id.* at 1:14–18. To handle high call demand, each cell may be further divided geographically into sectors (“physical sectors”), each served by a separate directional antenna component of the BTS, and may employ multiple carrier frequencies (“frequency sectors”). *Id.* at 1:34–41, 46–66, Fig. 3. A mobile

station moving from one cell to another typically passes through a “transitional area” where two cell sites (and consequently at least two physical sectors) overlap. *Id.* at 2:61–64. Oh’s invention seeks to optimize the allocation of air interface resources in a wireless network by using information about the location of a mobile station and the congestion on carrier frequencies available at that location to determine when communications with the mobile station can and should be switched to a different carrier frequency. *Id.* at 3:14–25.

A visual representation of a mobile station “handoff” is depicted in Figure 3 of Oh, reproduced below.

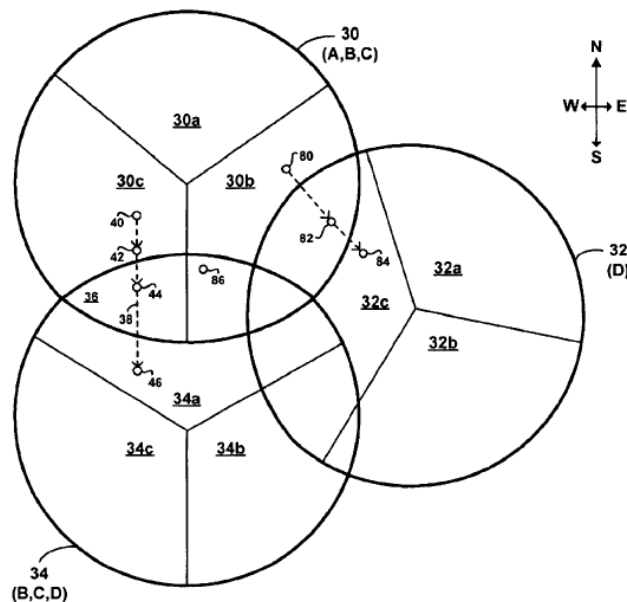


FIG. 3

Figure 3 is an idealized representation of an arrangement of three cells in a wireless network. Ex. 1005, 4:2–5. As shown, cells 30, 32 and 34 are divided into physical sectors a, b, and c, and each cell employs different frequency sectors: cell 30 uses carrier frequencies A, B, and C; cell 32 uses carrier frequency D; and cell 34 uses carrier frequency B, C, and D. *Id.* at

6:18–28. Oh explains that if the mobile station is at location 42, the network’s mobile switching center (MSC) may reference a location log to determine that the mobile station is on a trajectory along which the mobile station is about to head into area 36, which is an overlap of physical sectors 30c and 34a. *Id.* at 12:32–36. Using a sector-location table, the MSC may then determine that, in area 36, frequency-sectors A30c, B30c, C30c, B34a, C34a and D34a are candidates to serve the mobile station. *Id.* at 12:36–39. Then, referring to a sector-capacity table, the MSC determines that frequency-sector D34a is the least congested (in terms of traffic and noise, for instance), and as the mobile station moves to area 36, the MSC does a handoff of the mobile station to frequency-sector D34a, i.e., to sector 34a and frequency D. *Id.* at 12:40–45.

2. *Clark (Ex. 1010)*

Clark is titled “Method and Apparatus for a Wireless Telecommunication System that Provides Location-Based Messages,” and relates “to a wireless telecommunications system.” Ex. 1010, code (54), 1:10–12. Clark’s system uses location or position information of a wireless mobile unit to enable sending messages to the mobile unit indicating problems at or near that location. *Id.* at 2:39–42, 3:21–27.

Figure 8 of Clark, reproduced below, illustrates a wireless mobile unit traveling along a route.

FIG. 8

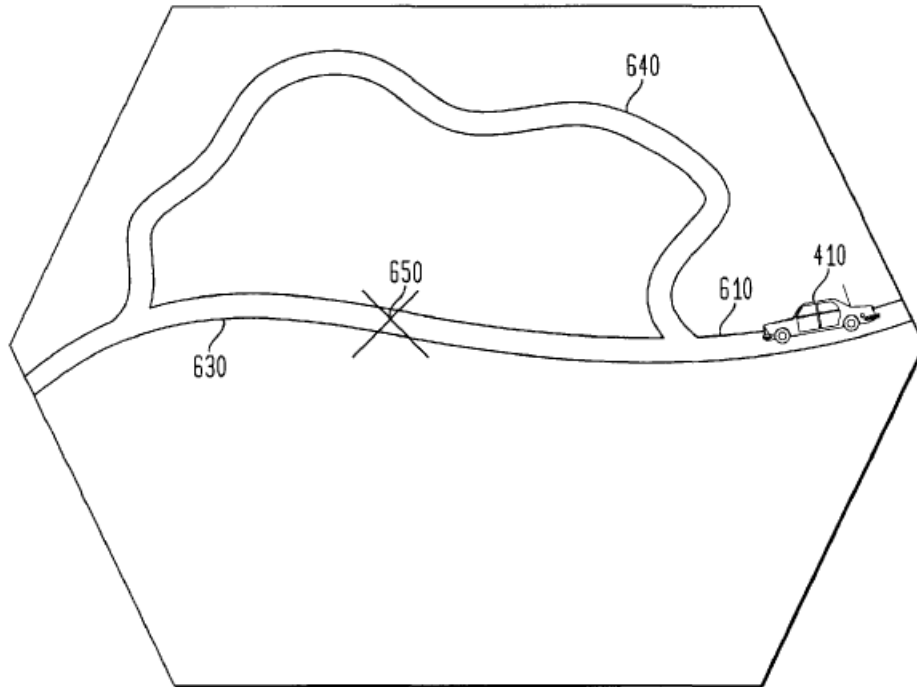


Figure 8 depicts wireless mobile unit 410 traveling on a first road 610. Ex. 1010, 7:5–6. Information from an external information source, such as the Internet, may indicate that the user should avoid main route 630 and take alternate route 640. *Id.* at 7:10–16. Clark explains that when wireless mobile unit 410 enters a particular region, “it can receive information relating to regions or cells neighboring the designated region separate from or along with information for the designated region, to thereby allow a user to plan alternate routes of travel to avoid problems.” *Id.* at 8:1–6.

3. *McGregor (Ex. 1009)*

McGregor is titled “Mobile Phone with Internal Accounting” and relates to “a mobile phone system with a mobile telephone accounting protocol for mobile phones” that are “capable of moving from one

transmission station to another in a communication network,” in which “the mobile telephone accounting protocol is adapted for a mobile debit phone in which the communication traffic with the service provider is minimized to expand traffic handling capacity of the service provider by accomplishing the accounting procedures within each mobile phone unit.” Ex. 1009, code (54); 1:6–15. McGregor discloses that certain mobile debit phones “will deactivate the phone unit if credit is exceeded or credit is not extended by the airway activation and credit transfer procedures that form a part of this mobile phone system.” *Id.* at 2:39–44. According to McGregor, the accounting system that provides these features is internal to the mobile phone unit, and includes a complex billing algorithm with a multiple factor accounting protocol to account for local charges, roaming charges when the mobile phone unit moves from one zone to another, long distance charges, international charges including country independent local charges, and surcharges which may be per call or rate based. *Id.* at 2:46–54. McGregor explains that the billing algorithm factors the multiple variables of a telephone call from a mobile phone into a billing equation that virtually mirrors the factors considered by public switched network providers and involved wireless service providers. *Id.* at 14:1–5.

4. *Steer (Ex. 1006)*

Steer is titled “Location Based Power Control for Mobile Communications Systems” and relates to “defin[ing] a preferred method for setting the power based upon the geographical location of the mobile station.” Ex. 1006, code (54), 1:12–13. Steer obviates or mitigates prior art disadvantages associated with setting power control in a mobile communications system by setting power control “based on the location of

the mobile station,” which significantly reduces or eliminates need for the traditional feedback control loop processes. *Id.* at 2:40–47. Steer accomplishes this by generating a power control map or table in which “[s]ome of the signaling received at the base station may relate to updating of the power control map information.” *Id.* at 10:7–35. Steer explains that a “mobile terminal may signal with its location and its (successful) power level and other modulation parameters,” and this “information is passed to the power control map update process,” which adjusts the “power control map information [] for the indicated location.” *Id.* at 10:14–15. According to Steer, this may mean “adding a new entry in the table if the mobile terminal is at a previously non-surveyed location.” *Id.* at 10:20–22.

5. *Principles of Law Regarding Patentability*

“A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in [35 U.S.C. § 102], if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains.” 35 U.S.C. § 103. Obviousness is a question of law based on underlying findings of fact. *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966). The underlying factual considerations “include the scope and content of the prior art, the differences between the prior art and the claimed invention, the level of ordinary skill in the art, and any relevant secondary considerations” of non-obviousness, including commercial success of the patented product or method, a long-felt but unmet need for the functionality of the patented invention, and the failure of others who have unsuccessfully

attempted to accomplish what the patentee has achieved. *Id.* at 17–18. The obviousness analysis should not be conducted “in a narrow, rigid manner,” but should instead focus on whether a claimed invention is merely “the result[] of ordinary innovation,” which is not entitled to patent protection. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 400, 427 (2007).

6. *Claim 1*

Petitioner contends that the combination of Oh, Clark, and Steer teaches or suggests all of the limitations of claim 1, that the ordinarily skilled artisan would have had reason to combine the references, and that a person of ordinary skill would have had a reasonable expectation of success combining the references. Pet. 11–34. Petitioner supports its contentions with a detailed mapping, supported by Dr. Pullen’s testimony, of how the combination of references satisfies each of the recited claim elements. *Id.*

For the elements of claim 1, Petitioner contends that Oh teaches the preamble of claim 1 and limitations [1A(i)], [1B], [1C], [1D], [1E], [1F(i)], and [1F(iii)]. Pet. 14–18, 25–32, 34 (citing Ex. 1005, 1:40–43, 3:17–32, 6:18–28, 6:44–51, 6:55–58, 7:18–20, 7:58–67, 8:11–29, 10:19–21, 10:31–43, 12:17–22, 12:32–36, 12:42–45, 12:52–13:5, 13:7–11, 13:36–39, Figs. 3–6, Abstract; Ex. 1003 ¶¶ 52–58, 72–82, 87, 88). Petitioner contends, for example, that Oh teaches “a plurality of wireless communication options,” because “Oh discloses that ‘a network entity uses information about the location of a mobile station, together with information about actual congestion on various carrier frequencies in areas of a wireless network, to determine . . . to which carrier frequency the communications should be switched.’” Pet. 14 (citing Ex. 1005, 3:17–25; Ex. 1003 ¶¶ 52–53) (emphasis omitted).

For limitation [1A(ii)], Petitioner relies on the combination of Oh and Clark. Pet. 18–25 (citing Ex. 1005, 1:40–43, 8:11–16, 11:19–24, 11:48–51, 12:17–22; Ex. 1010, 1:32–34, 3:38–62, 3:66–4:11, 4:21–31, 4:45–62, 6:31–35, 7:5–20, 8:1–6, 8:16–18, Fig. 8; Ex. 1003 ¶¶ 59–71). For limitation [1F(ii)], Petitioner relies on the combination of Oh and McGregor. Pet. 32–34 (citing Ex. 1009, 2:39–43, 2:48–54, 3:9–12, 14:1–6; Ex. 1003 ¶¶ 84, 86).

In the Preliminary Response, Patent Owner disputes Petitioner’s contention on a single page, as follows:

Petitioner does not explain how the combination of Oh, Clark, and McGregor can arrive at the claimed “plurality of wireless communications options,” as specified in all of the Challenged Claims. As set forth above, the Oh reference merely discloses handoff between frequencies, which is only a single wireless communications option. Petitioner incorrectly attributes frequency hopping to a plurality of wireless communications options. Frequency hopping, like base station hopping in the prior art, does not meet the claims. One of skill in the art would have understood that the plain meaning of the term “wireless communications option” would not include merely frequency hopping or changing base stations as in Liu or Oh. Petitioner’s argument regarding wireless communications options is cumulative of the arguments made by the Office and overcome during prosecution. None of the other references advanced by Petitioner overcome this limitation as Petitioner relies on Oh. Accordingly, because Oh cannot support a plurality of wireless communications options, the combination fails and the Petition should be denied in its entirety.

Prelim. Resp. 6.

As addressed above, however, the Specification broadly defines “wireless communication options” to include available wireless networks, different service/power levels within each network, and “any other option that may now be available or will be available in the future for wireless

communication.” Ex. 1001, 1:45–51. On the current record, we find that providing multiple carrier frequencies for use on a given network falls within the “any other option . . . available” portion of this definition. Further, as discussed above, we are not persuaded on the current record that the applicant disclaimed the coverage afforded by this language in the course of prosecuting the application that issued as the ’432 patent.

In sum, having carefully considered Petitioner’s contentions, Patent Owner’s arguments, and the evidence currently of record, we determine that Petitioner is reasonably likely to prevail in showing that independent claim 1 would have been obvious over Oh, Clark, and McGregor.

7. *Claim 2*

Claim 2 is independent and includes virtually the same limitations recited in independent claim 1, differing only in the wherein clause addressing obtaining updated information concerning the coverage areas of the wireless communication options. Petitioner contends that the limitations of independent claim 2 are taught or suggested by the combination of Oh, Clark, and McGregor. Pet. 35–37. Patent Owner does not raise any arguments specifically concerning claim 2.

8. *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 Oh, Clark, and McGregor. 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),¹¹ 5–6, 64; *see also 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 claim 2.

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 and 3 as well, as institution must include all challenged claims under all asserted grounds. We note that, similar to Ground 1, under Grounds 2 and 3 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 Pullen Declaration. Pet. 37–66. Patent Owner at this stage does not raise any arguments specifically directed to these grounds.

III. CONCLUSION

For the foregoing reasons, we determine that Petitioner has shown that there is a reasonable likelihood that it would prevail with regard to at least

¹¹ Available at <https://www.uspto.gov/sites/default/files/documents/tpgnov.pdf?MURL=TrialPracticeGuideConsolidated>

one of the claims challenged in the Petition. Accordingly, we institute *inter partes* review of claims 1–8 of the '432 patent on all asserted grounds.

IV. ORDER

For the reasons given, it is

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review of claims 1–8 of the '432 patent on all asserted grounds is *instituted*; and

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

IPR2023-01190
Patent 6,898,432 B1

PETITIONER:

Lionel Lavenue
Kara Specht
R. Maxwell Mauldin
Safiya Aguilar
FINNEGAN, HENDERSON, FARABOW,
GARRETT & DUNNER, LLP
lionel.lavenue@finnegan.com
kara.specht@finnegan.com
r.maxwell.mauldin@finnegan.com
safiya.aguilar@finnegan.com

PATENT OWNER:

Vincent Rubino
John Rubino
FABRICANT LLP
vrubino@fabricantllp.com
jarubino@rubinoip.com