

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ALLSTATE INSURANCE COMPANY,
Petitioner,

v.

ATOS, LLC,
Patent Owner.

IPR2021-01209
Patent 9,152,609 B2

Before AMANDA F. WIEKER, RICHARD H. MARSCHALL, and
RYAN H. FLAX, *Administrative Patent Judges*.

MARSCHALL, *Administrative Patent Judge*.

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

Allstate Insurance Company (“Petitioner”) filed a Petition for *inter partes* review of claims 1–25 (all claims) of U.S. Patent No. 9,152,609 B2 (Ex. 1001, “the ’609 patent”). Paper 1 (“Pet.”). ATOS, LLC (“Patent Owner”) filed a Preliminary Response. Paper 5 (“Prelim. Resp.”). With our authorization, Petitioner filed a Preliminary Reply (Paper 6, “Pet. Reply”) and Patent Owner filed a Preliminary Sur-reply (Paper 7, “PO Sur-reply”).

Under 35 U.S.C. § 314 and 37 C.F.R. § 42.4(a), we have authority to institute an *inter partes* review if “the information presented in the petition . . . and any response . . . 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.” 35 U.S.C. § 314(a) (2018). After considering 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 ’609 patent. Accordingly, we institute an *inter partes* review of claims 1–25 of the ’609 patent on all grounds asserted in the Petition.

BACKGROUND

A. Real Parties-In-Interest and Related Matters

Petitioner identifies itself, Esurance Insurance Services, Inc., and Arity, LLC, as real parties-in-interest. Pet. 3. Patent Owner identifies itself as its sole real party-in-interest. Paper 4, 2.¹

¹ In its Mandatory Notices, Patent Owner states that it “is the assignee of” the ’609 patent “based on recorded assignments.” Paper 4, 2. Because this statement appears under the heading “REAL PARTY-IN-INTEREST,” we interpret this statement as a representation that Patent Owner is the sole real party-in-interest. *See id.* We note, however, that an assignee identified in “recorded assignments” may not necessarily identify the current assignee, and identifying an assignee of a patent as a real party-in-interest does not

The parties identify the following proceedings related to the '609 patent: *ATOS, LLC v. Allstate Insurance Company, Esurance Insurance Services, Inc., and Arity, LLC*, No. 1:20-cv-06224 (N.D. Ill.); IPR2021-01118 (addressing Patent Owner's US 8,527,140 B2). Pet. 3; Paper 4, 2.

B. Overview of the '609 Patent

The '609 patent relates to a method that detects “the state of a vehicle by a portable device carried by a user and the various actions taken upon the detection of the state.” Ex. 1001, 1:16–18. In the background discussion of related art, the '609 patent describes problems the art attempts to address, such as using a portable device to remember a parking spot or disabling certain user actions on a portable device while a user moves or exceeds a speed limit. *Id.* at 1:20–25, 1:48–51. The '609 patent also describes disadvantages of using GPS alone to address these problems. *See id.* at 1:42–47, 1:51–61.

To address the drawbacks in the related art, the '609 patent employs “an accelerometer in a portable device” to detect “the stopping and starting of a car.” Ex. 1001, 2:16–17. According to the '609 patent, an accelerometer can detect engine vibrations to determine whether an engine remains running or has stopped running, and can also detect vibrations that indicate walking by the user. *Id.* at 2:16–25. In one embodiment, the '609 patent describes combining the state of the vehicle determined using accelerometer information (engine on/off) with GPS location information to determine the location of a stopped car. *Id.* at 2:26–33.

necessarily indicate that all real parties-in-interest are identified. To the extent that other real parties-in-interest exist, Patent Owner must promptly file updated Mandatory Notices identifying such parties.

Figure 1 of the '609 patent is reproduced below.

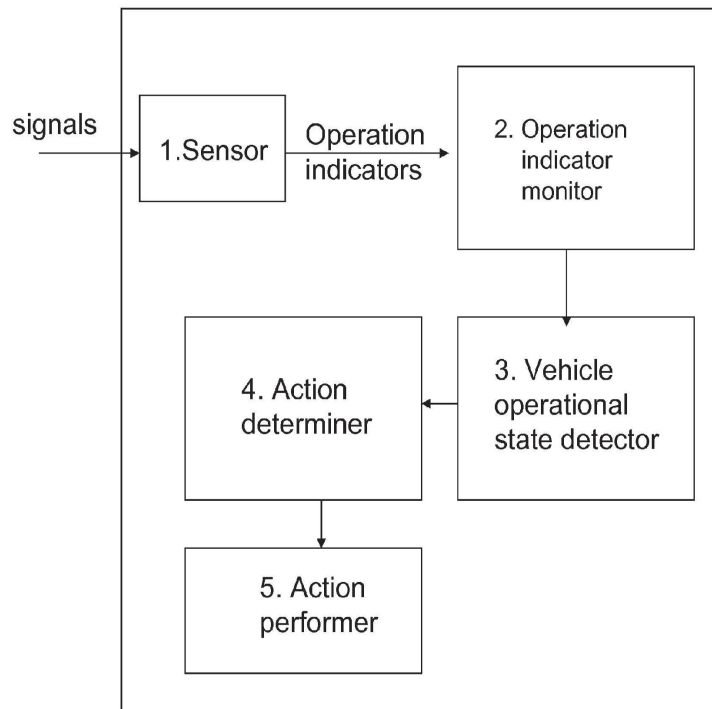


Figure 1: Portable device for taking action based on state of vehicle.

Figure 1 “illustrates the portable device apparatus carried by an individual to determine if certain actions should be performed.” Ex. 1001, 3:50–52. A portion of Figure 1 depicts a sensor receiving “signals” as an input and generating “[o]peration indicators” as an output. *Id.* at Fig. 1. The '609 patent describes basing a decision to perform an action on “determining the operational state of a vehicle surrounding the portable device,” which in turn involves monitoring “an onboard sensor on the device.” *Id.* at 3:52–55. According to the '609 patent, the sensor receives signals from the environment and converts them to “operation indicators.” *Id.* at 3:54–57. The '609 patent provides an example that employs a vibration sensor, such as an accelerometer, that measures “forces over time (i.e. the signals) and convert[s] them into number of vibrations measured per second (operation indicators).” *Id.* at 3:57–60.

The operation indicators from the sensor “are forwarded to the operation indicator monitor unit (unit 2) which continuously monitors and collects the operation indicators over time.” Ex. 1001, 4:9–12. The monitor unit then forwards the operation indicators to an “operational state detector unit” that “uses pre-determined criteria which are a set of rules to help determine the operational state of the vehicle.” *Id.* at 4:12–16. The next step described by the ’609 patent involves sending the operational state information to an “[a]ction determiner” to determine whether to take an action and an “[a]ction performer” to perform any action decided upon by the action determiner. *Id.* at 4:36–41, Fig. 1.

C. Challenged Claims

Petitioner challenges claims 1–25 of the ’609 patent. Pet. 4. Claims 1 and 25 are independent. Ex. 1001, 11:2–14:41. Claim 1 is illustrative and reproduced below:

1. A method of performing one or more actions on a portable device carried by an individual, comprising:
 - monitoring, at least one operation indicator transparently to the individual, wherein the at least one operation indicator is created by an on-board component of the portable device when the portable device is located inside a vehicle;
 - detecting the at least one operation indicator that meets one or more predetermined criteria;
 - determining one or more operational states of the vehicle based on the one or more predetermined criteria;
 - determining at least one action to be performed on the portable device carried by the individual, based at least in part on:
 - i) the one or more operational states of the vehicle and

- ii) at least one previous change in the operational state of the vehicle wherein the at least one previous change in the operational state comprises at least one of the following: a change from the vehicle being in a moving state to being a lingering state; a change from the vehicle engine being in an on-state to being in an off-state; a change from the vehicle being in the moving state to being in a stationary state; a change from the vehicle's speed being in a below predetermined speed limit state to being in an above the predetermined speed limit state; a change from the vehicle being in the stationary state to being in the moving state; a change from an engine being in an is off-state to being in an on-state; and a change from the engine being in the is off-state to the vehicle being in the moving state; and

performing the at least one action on the portable device.

Ex. 1001, 11:2–11:33.

D. Asserted Grounds of Unpatentability

Petitioner asserts that claims 1–25 are unpatentable based on the following grounds (Pet. 4):

Claims Challenged	35 U.S.C. §	References/Basis
1–5, 9, 11, 13–14, 17–19, 21–25	102 ²	Kim ³
6–8, 15	103(a)	Kim, Rubin ⁴
10, 12	103(a)	Kim, Mitrovic ⁵
16, 18, 19	103(a)	Kim, Barbera ⁶
20	103(a)	Kim, Barbera, Kohli ⁷

Petitioner also relies on the Declarations of Dr. William R. Michalson and Dr. Hsieh-Yee. *See* Exs. 1003, 1011. At this stage of the proceeding, Patent Owner does not rely on declaration testimony.

DISCUSSION

A. Principles of Law

To anticipate a claim under 35 U.S.C. § 102, “a single prior art reference must expressly or inherently disclose each claim limitation.” *Finisar Corp. v. DirecTV Group, Inc.*, 523 F.3d 1323, 1334 (Fed. Cir. 2008).

² The Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (“AIA”), amended 35 U.S.C. §§ 102 and 103. Because the ’609 patent has an effective filing date before the effective date of the applicable AIA amendments, we refer to the pre-AIA versions of 35 U.S.C. §§ 102 and 103. Our decision would not differ based on applying either pre- or post-AIA law.

³ KR 10-0775006, published June 4, 2007 (Ex. 1005, “Kim”).

⁴ US 8,065,508 B2, filed November 10, 2008 (Ex. 1006, “Rubin”).

⁵ Mitrovic, D., *Reliable Method for Driving Events Recognition*, IEEE Transactions on Intelligent Transportation Systems, Vol. 6, No. 2 (June 2005) (Ex. 1008, “Mitrovic”).

⁶ US 7,505,784 B2, published March 29, 2007 (Ex. 1007, “Barbera”).

⁷ US 6,236,937 B1, issued May 22, 2001 (Ex. 1013, “Kohli”).

That “single reference must describe the claimed invention with sufficient precision and detail to establish that the subject matter existed in the prior art.” *Verve, LLC v. Crane Cams, Inc.*, 311 F.3d 1116, 1120 (Fed. Cir. 2002).

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). 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 ordinary skill in the art; and (4) when in evidence, objective indicia of non-obviousness. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

B. Level of Ordinary Skill in the Art

Petitioner contends that a person of ordinary skill in the art at the time of the invention “would have been someone with a bachelor’s or master’s degree in the field of mechanical engineering, electrical engineering, or physics, or with a bachelor’s or master’s degree in a related field, and at least three years of experience in designing or developing portable device systems.” Pet. 4 (citing Ex. 1003 ¶ 53). Patent Owner does not address Petitioner’s proposal or offer a competing definition of the level of ordinary skill in the art. *See generally* Prelim. Resp.

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 ’609 patent and the asserted prior art. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001).

C. 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) (2019). 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).

Petitioner proposes constructions for “operation indicator” and “on-board component.” Pet. 7–10. Patent Owner disputes Petitioner’s proposed construction for “operation indicator” and proposes its own construction, and argues that we need not construe “on-board component” at all. Prelim. Resp. 7–13. We agree with Patent Owner that we need not construe “on-board component” because, at this time, no issue turns on our construction of that limitation. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (holding that only claim terms in controversy need to be construed, and only to the extent necessary to resolve the controversy (citing *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))). We limit our analysis to the construction of “operation indicator.”

Independent claim 1 requires the step of “monitoring at least one operation indicator” and independent claim 25 requires “at least one operation indicator” and “at least one operation indicator monitor configured to monitor one or more operation indicators.” Ex. 1001, 11:4, 14:19–22. Petitioner argues that we should construe “operation indicator” to mean “a sensor measurement determined from signals from the environment.” Pet. 7. Petitioner contends that although the ’609 patent does not provide an express

definition of “operation indicator,” it defines the term “through context” when it states that vibration sensors measure forces over time and “convert them into number of vibrations measured per second (operation indicators).” *Id.* (quoting Ex. 1001, 3:57–60 (emphasis removed)). Petitioner also relies on the statement in the ’609 patent that the “sensor receives signals from the environment and converts them into operation indicators.” *Id.* at 8 (quoting Ex. 1001, 3:63–66) (emphasis omitted).

Patent Owner argues that we should construe “operation indicator” to mean “information derived by converting sensing device output determined from signals from the environment.” Prelim. Resp. 7–8 (emphasis omitted). Patent Owner summarizes the differences between the parties’ constructions:

The difference between the parties’ proposed constructions is that Petitioner’s construction would equate the measurements taken by a sensing device with “operation indicators.” By contrast, under Patent Owner’s construction, sensing device measurements are not, standing alone, “operation indicators.” Instead, the output from the sensing device must be *converted* into operation indicators.

Id. at 8. According to Patent Owner, “the measurements determined from the sensing device must be converted—i.e., processed in some way—before becoming a meaningful indicator of the car’s operation.” *Id.* at 8–9. Patent Owner relies on aspects of the specification stressing the conversion of signals, including the statement that the invention “require[s] . . . a sensor that converts sensory signals to operation indicators.” *Id.* at 9 (quoting Ex. 1001, 4:5–8 (emphasis removed)). Patent Owner also argues that Petitioner improperly relies on a portion of specification stressing the conversion of signals, but then omits the term “converts” from its proposed construction and instead uses the term “determined.” *Id.* at 10–11.

In its Reply, Petitioner argues that the sensor outputs are “operation indicators” and the sensors transform environmental signals into those operation indicators. Pet. Reply 1–2. According to Petitioner, the specification confirms this interpretation multiple times and never suggests that any further conversion of the sensor output occurs to create operation indicators, as Patent Owner argues. *Id.* at 2–4. Petitioner also notes that both proposed constructions use the word “determined,” undermining Patent Owner’s complaint that Petitioner improperly uses that term in its proposal. *Id.* at 4–5.

In its Sur-reply, Patent Owner again argues that Petitioner omits a crucial “converting” step that must take place after a sensor takes measurements before it produces an operation indicator. PO Sur-reply 1. Patent Owner contends that such a conversion must take place so that the operation indicator can “‘indicate’ something about the ‘operation’ of a vehicle.” *Id.* at 2. Patent Owner further contends that a sensor may contain two components, one to measure signals from the environment and another to convert the output of the first component to an operation indicator, although Patent Owner acknowledges that the specification’s figures do not depict such a structure. *Id.* at 4.

Based on our review of the parties’ arguments and cited evidence, we agree with Petitioner’s proposed construction and disagree with Patent Owner’s contention that “operation indicators” mean something more than the output of a sensor measurement based on signals from the environment. First, the plain language of the claims does not support Patent Owner’s construction. In claim 1, the limitation appears in a step requiring “monitoring at least one operation indicator . . . wherein the . . . operation indicator is created by an on-board component,” i.e., created by the sensor

the specification describes. *See* Ex. 1001, 3:54–58, 11:4–6. Nothing in that limitation or its analogous limitation in claim 25 suggests anything more than “monitoring” the operation indicator created by the on-board component—no extra converting of that output appears in the claim suggests that mere monitoring of the indicator requires further conversion prior to the monitoring. In addition, to the extent that sensor output such as vibrations per second do not indicate something meaningful enough about the vehicle in Patent Owner’s view, later limitations in the claims provide additional information about the operation of the vehicle, suggesting that the “operation indicators” themselves need not contain all of the information as to the vehicle’s state. *See* PO Sur-reply 2; Ex. 1001, 11:9–12 (setting forth steps in claim 1 that require detecting when the operation indicator meets predetermined criteria and determining operational states of the vehicle based on that criteria).

The specification also supports Petitioner’s construction by equating “operation indicator” with a sensor’s output. Ex. 1001, 3:57–60 (“[A] vibration sensor may measure forces over time (i.e. the signals) and convert them into number of vibrations measured per second (operation indicators).”). The only converting the specification describes in the context of operation indicators involves converting signals from the environment, not converting the output of the sensor as Patent Owner argues. *Id.* Patent Owner contends that the specification’s description of sensor output in vibrations per second, an operation indicator, may involve some additional converting of sensor output within a two-part sensor, but the specification does not describe such a two-part sensor or the extra conversion step. *See* PO Sur-reply 3–4; Ex. 1001, 3:52–66, Fig. 1. To the extent that the specification describes conversion of sensor output into something different,

it occurs in later steps after the “monitoring” step, and not before the sensor creates operation indicators. *See* Ex. 1001, 4:12–20 (describing operation of state detector unit that determines operational state of a vehicle after receiving operation indicators from monitoring unit). Finally, although the specification describes a sensor measurement converted from environmental signals and Petitioner’s proposal uses the phrase “determined from signals from the environment,” we view the phrases “converted from” and “determined from” as providing no meaningful distinction as applied to the prior art in this case. *See* Pet. 7. Patent Owner uses the same phrase in its own proposal when discussing the sensor’s actions on signals from the environment, and we do not view Petitioner’s use of that phrase in its construction as problematic. *See* Prelim. Resp. 8 (describing a portion of proposed construction as “determined from signals from the environment” (emphasis omitted)). To the extent the parties find the distinction between “converted” and “determined” meaningful, they can address the issue further during the trial.

Based on the foregoing, we construe “operation indicator” to mean “a sensor measurement determined from signals from the environment.”

D. Anticipation of Claims 1–5, 9, 11, 13, 14, 17–19, and 21–25 by Kim

Petitioner contends that claims 1–5, 9, 11, 13, 14, 17–19, and 21–25 are anticipated by Kim. Pet. 4, 14–43. Petitioner relies on the Declaration of Dr. William R. Michalson in support of its showing. *See id.* (citing Ex. 1003). For the reasons discussed below, we find that Petitioner has shown a reasonable likelihood that at least claims 1–3, 9, 11, and 25 are anticipated by Kim.

1. Overview of Kim

Kim “relates to a terminal device for providing a context aware-based mobile service.” Ex. 1005 code (57) (Abstract). More specifically, Kim discloses a terminal device that includes sensors that output data to a “context awareness unit” that estimates the environment surrounding the user of the terminal device. *Id.* The terminal device then outputs context-appropriate content to the user. *Id.* According to Kim, using its disclosed system, “it is possible to seamlessly provide a mobile service suitable for the user’s current location and context automatically without the user’s intentional selection inside of a vehicle, outdoors or indoors.” *Id.*

In one embodiment, Kim discloses terminal 100 having sensing unit 110 that includes a number sensors, including camera 111, microphone 112, GPS 113, and acceleration sensor 114. Ex. 1005 ¶¶ 38–40. Acceleration sensor 114 detects “the motion state of an object by detecting dynamic forces such as acceleration, vibration, and impact” and can detect engine and vehicle vibrations. *Id.* at ¶¶ 40–41. Kim discloses sending the data from sensing unit 110 to context recognition unit 120, which “estimates an external context or a user’s behavior by comparing the sensor data sensed through the sensor unit 110 with a pattern of reference signals stored therein.” *Id.* at ¶ 42. According to Kim, “the context awareness unit 120 continuously detects a change in the user’s context and detects a change in a service environment, for example, an area such as inside, outdoors, or indoors of the vehicle 200.” *Id.* at ¶ 43. After examining the user’s context, user intention setting unit 130 examines the context and determines the user’s intention based on information previously input and stored by the user, and service creation unit 609 selects an appropriate service based on the context and user intention. *Id.* at ¶¶ 44–45.

2. Discussion of Independent Claim 1

Petitioner argues that Kim discloses every limitation of claim 1, and provides a limitation-by-limitation analysis of claim 1 with specific citations to Kim and declaration support. Pet. 14–25. Patent Owner argues that Kim does not anticipate claim 1 because Kim does not disclose (1) “operation indicators,” (2) “monitoring at least one operation indicator continuously and *transparently* to the individual,” (3) “determining at least one action . . . based at least in part on . . . at least one previous change in the operational state of the vehicle;” and (4) certain changes enumerated by claim 1. Prelim. Resp. 15–29. We address each of Patent Owner’s arguments in turn below.

a. operation indicator

Petitioner relies on its proposed construction of “operation indicator” in arguing that Kim discloses “monitoring at least one operation indicator.” Pet. 16. According to Petitioner, Kim discloses a terminal having “‘sensor unit 110 [that] detects an external context or action using various sensors and outputs the corresponding sensor data’—(i.e., ‘*operation indicator*’)—for example by utilizing ‘an acceleration sensor 114 for instantaneous detection of the motion state of an object by detecting dynamic forces such as acceleration, vibration, and impact.’” *Id.* (citing Ex. 1003 ¶ 136; Ex. 1005, ¶¶ 39–40 (emphasis omitted)).

Patent Owner argues that Petitioner fails to establish that Kim discloses the claimed “operation indicators” because Petitioner’s argument “rests on an incorrect claim construction.” Prelim. Resp. 15. Patent Owner relies on its own proposed construction in arguing that Kim fails to disclose operation indicators. *Id.* at 15, 16 (“Under the correct construction, sensing device data is not itself an operation indicator.”), 18 (“[I]n Kim, no conversion is performed on sensor data before it is input to the context

recognition unit to determine whether it ‘meets one or more predetermined criteria.’”).

Based on the current record, Petitioner establishes sufficiently that Kim discloses “monitoring at least one operation indicator.” Patent Owner’s arguments do not undermine Petitioner’s showing because they are based on Patent Owner’s flawed construction of “operation indicator” that we rejected in our discussion above. *See supra* 9–13.

b. monitoring . . . transparently to the individual

Claim 1 requires “monitoring, at least one operation indicator continuously and transparently to the individual.” As to the “continuously and transparently to the individual” aspect of the limitation, Petitioner contends that Kim discloses context recognition unit 120 that acquires signals from sensor unit 110 and estimates the context, or operational state of a vehicle, through *continuous* detection of changes in the user’s context. Pet. 16–17 (quoting Ex. 1005 ¶¶ 43, 74). Petitioner also argues that “the ‘terminal’ in Kim monitors information in a way that is not visible to the user, (i.e., ‘transparently to the individual’).” *Id.* (citing Ex. 1003 ¶ 137; Ex. 1005 ¶ 43 (emphasis omitted)).

Patent Owner argues that the ’609 patent discloses several actions that are performed “***transparently*** to the user . . . based on the operational state of the vehicle.” Prelim. Resp. 18–19 (quoting Ex. 1001, 7:4–6). Patent Owner contends that Petitioner’s cited evidence as to the “transparently” limitation does not have “anything to do with transparency.” *Id.* at 19. Patent Owner argues that Kim’s paragraph 43, which describes context awareness unit 120 continuously detecting a change in a user’s context and service environment, “says nothing about transparency.” *Id.* at 19–20 (citing Ex. 1005 ¶ 43). As to Petitioner’s declarant testimony that Kim’s

monitoring of information and context “can be performed entirely without user input or observation,” Patent Owner contends the statement does not appear in Kim and lacks sufficient explanation. *Id.* at 20 (citing Ex. 1003 ¶ 137). Patent Owner also argues that Dr. Michalson’s testimony conflicts with his testimony in a related proceeding addressing the same “transparently” limitation, where Petitioner allegedly “construed transparency to require user input or observation—directly contrary to Petitioner’s position in the present petition.” *Id.* at 20–21 (emphasis omitted) (citing IPR2021-01449, Ex. 1001, 5:14–15; Ex. 1003 ¶ 248). Patent Owner also asserts that although “Kim’s method appears to work automatically,” it “notifies the user,” which “is the opposite of and does not disclose the claimed method, which requires transparency.” *Id.* at 21–22 (citing Ex. 1005 ¶ 102).

Based on the current record, Petitioner establishes sufficiently that Kim discloses “monitoring at least one operation indicator continuously and transparently to the individual.” Petitioner relies on Kim’s disclosure of continuous detection of changes in a user’s context by context recognition unit 120, which assesses the output of sensor unit 110. Ex. 1005 ¶ 43; Pet. 17. Petitioner also relies on its declarant testimony that Kim’s terminal “monitors information in a way that is not visible to the user” and that context recognition unit 120 can monitor signals from sensor unit 110 “without user input or observation.” Ex. 1003 ¶ 137 (citing Ex. 1005 ¶ 74). We do not view this testimony as so conclusory that we should give it no weight, as Patent Owner urges. *See* Prelim. Resp. 20. We also do not view Petitioner’s allegedly contradictory assertions filed in a related matter as sufficient to fatally undermine its arguments and evidence in this proceeding at this stage, although such contradictions may impact how we weigh the

evidence during the trial. *See id.* at 20–21. At a minimum, we view the evidence at this stage as consistent with Petitioner’s declarant testimony that Kim monitors information continuously and automatically, and does not require user input and, therefore, the information need not be viewed by the user in order for the system to operate.

Although neither party proposes a formal construction for “transparently,” Patent Owner does not dispute that Kim’s method discloses continuous monitoring and an automatic method that does not require user input, and the lack of any description of user input as to the “monitoring” step in Kim generally supports Petitioner’s position. *See* Prelim. Resp. 20–21. Patent Owner points to one instance where Kim notifies terminal 100 when “context awareness server 600 . . . finds special information or an application service,” but Patent Owner does not tie this disclosure to the portions of Kim relevant to “monitoring at least one operation indicator,” i.e., monitoring the output of Kim’s sensor unit 110. *See id.* at 21–22 (citing Ex. 1005 ¶ 102). Instead, the fact that Kim specifically describes when it notifies a user terminal 100 in some situations, and does not do so when discussing monitoring the output of Kim’s sensor unit 110, arguably supports Petitioner’s position. Moreover, Patent Owner does not propose a construction that would support its position that mere notification to a user of certain information, without requiring a user to act or even view the information for the system to operate, falls outside the scope of the “transparently” limitation. The parties may address this issue further during trial, including any proposed constructions of “transparently” and any evidence that may support their positions.

c. based at least in part on . . . at least one previous change in the operational state of the vehicle

Claim 1 requires “determining at least one action . . . based at least in part on . . . at least one previous change in the operational state of the vehicle.” As to the “at least one previous change” aspect of the limitation, Petitioner argues that Kim discloses that the service provided changes based on the operational state, which Petitioner equates to determining an action. Pet. 22 (citing Ex. 1005 ¶ 65). Petitioner also argues that “it is possible to automatically provide a corresponding service according to changes in the service environment.” *Id.* (quoting Ex. 1005 ¶ 26 (emphasis omitted)) (citing Ex. 1003 ¶¶ 164–165). When addressing the limitation requiring at least one specific “previous change in the operational state,” Petitioner argues that Kim discloses determining an action when a vehicle changes (1) from being on to off; (2) from a moving state to stationary state; (3) from a stationary state to a moving state; and (4) from being off to on. *Id.* at 23–25.⁸

Patent Owner argues that

to satisfy the “at least one previous change in the operations state of the vehicle” limitation, the mobile device must be capable of remembering a prior state. It is not enough for the mobile device to detect the current state. It must have the

⁸ Patent Owner contends that Kim does not disclose the second and third of these four changes, but does not contest Petitioner’s other contentions as to this limitation. *See* Prelim. Resp. 26–29. The limitation in question merely requires “wherein the at least one previous change in the operational state comprises *at least one* of the following.” Ex. 1001, 11:18–32 (emphasis added). Because Patent Owner does not contest Petitioner’s contention that Kim discloses a change from an on-state to an off-state and vice versa, and we find Petitioner’s contentions supported by the record, Patent Owner’s arguments as to the other aspect of claim 1, even if true, would not establish that Kim does not disclose all of the limitations of claim 1.

capability of being aware of transitions in the vehicle's state in the past, and if a specific transition took place, taking action.

Prelim. Resp. 23. Patent Owner contends that Kim merely determines actions “based on the current state of the vehicle alone” and does not disclose a terminal that “is aware of the vehicle's prior states or whether any particular transition took place.” *Id.* at 24; *see also id.* at 25 (“Kim discloses no capability of remembering any prior state of the vehicle.”). Patent Owner also argues that although Kim states that its “context awareness unit 120 continuously detects a change in the user's context and detects a change in a service environment,” when read in context, Kim merely describes detection of a car's current status. *Id.* at 24–25 (quoting Ex. 1005 ¶¶ 42–43). Patent Owner also contends that, even if Kim discloses the ability to determine actions based on changes in state, that does not mean that Kim discloses determining actions based on a previous change in state. *Id.* at 25–26.

Based on the current record, Petitioner establishes sufficiently that Kim discloses “determining at least one action . . . based at least in part on . . . at least one previous change in the operational state of the vehicle.” Petitioner relies on portions of Kim that expressly refer to automatically changing service according to changes in service environment. Pet. 22 (citing Ex. 1003 ¶¶ 164–165; Ex. 1005 ¶¶ 26, 65). Petitioner also points to detecting a number of changes in the environment, including detecting when a vehicle changes from being on to off and vice versa. *Id.* at 23–25. Those portions of Kim, as well as the declarant testimony, adequately support Petitioner's contentions at this stage. Although Petitioner places little emphasis on the term “previous changes” and appears to assume that any change that just occurred amounts to a “previous change,” at this stage we

view Petitioner's assertions as sufficient. *See Id.* at 22–25; Ex. 1003 ¶¶ 164–165.

Patent Owner contends that the claimed “previous change” must be detected in a particular manner by relying on memory of past vehicle states and changes in states. Prelim. Resp. 23–24. We decline to read such a requirement into the claims in the absence of any specific claim construction proposal from Patent Owner with supporting citations to the relevant evidence. We agree with Patent Owner that the term “previous change” refers to a change that already occurred, but we do not place any further timing restrictions on the timing of the “previous change” at this time. Patent Owner suggests that the previous changes must have occurred at some time well before the moment that a terminal detects a change, and that the step requires storing the previous changes, but Patent Owner not only fails to propose a construction in support of this argument, but also does not direct us to portions of the specification describing what “previous changes” means, or how it requires storing the changes in memory. *See, e.g., id.* at 23 (citing Ex. 1001, 4:36–39); Ex. 1001, 4:36–39 (describing actions taken based on current and past operational states, without mentioning “previous changes” or “changes”). Accordingly, Patent Owner's assertions at this stage do not undermine Petitioner's contention that Kim discloses determining an action based on previous changes in operational states, such as changing from a vehicle on-state to vehicle off-state, and vice versa, as recited in claim 1. *See Pet.* 22–25.

Further, to the extent that Patent Owner equates a failure to disclose “previous changes” with Kim's alleged failure to disclose any memory of past vehicle states, that argument lacks support. *See Prelim. Resp.* 23–25. For example, the passage from Kim that Patent Owner quotes refers to a

comparison of current sensor data from sensor unit 110 to “previously stored pattern data” in context awareness unit 120. *Id.* at 24–25 (quoting Ex. 1005 ¶ 42). “Stored” sensor data refers to data stored in memory, and such sensor data would appear to include vehicle state data when terminal 100 resides within a vehicle and the sensors output data reflecting the vehicle’s state. *See, e.g.*, Ex. 1005 ¶ 41 (describing use of sensor 114 to sense vibrations in a vehicle). Kim contains numerous other references to stored data or a comparison of current sensor data to stored pattern data to recognize a particular context around a user. *See, e.g., id.* at 3 (claims 1 and 5), 5 (claims 11 and 13), ¶¶ 19, 26, 64, 74. Accordingly, even if the claims required some sort of memory to compare a current state to past states as Patent Owner contends, Kim arguably discloses that memory. The parties may address these arguments further during trial.

d. Conclusion as to Claim 1

We have reviewed Petitioner’s argument and evidence for the remaining limitations and determine that Petitioner establishes sufficiently that Kim discloses each of those limitations. Based on the current record, the Petition shows a reasonable likelihood that Petitioner would prevail in demonstrating that Kim anticipates claim 1.

3. Dependent Claims 2, 3, 9, 11, and 21–24

Petitioner argues that Kim discloses each of the limitations of dependent claims 2, 3, 9, 11, and 21–24. Pet. 25–30, 33–37. Patent Owner does not raise any additional arguments as to claims 2, 3, 9, 11, and 21–24. *See Prelim. Resp.* 30, 33, 41.

We have reviewed Petitioner’s argument and evidence for the additional limitations in claims 2, 3, 9, 11, and 21–24. Based on the current

record, the Petition shows a reasonable likelihood that Petitioner would prevail in demonstrating that Kim anticipates claims 2, 3, 9, 11, and 21–24.

4. Independent Claim 25

Petitioner argues that Kim discloses each of the limitations of independent claim 25. Pet. 37–43. Petitioner cites to portions of Kim and declarant testimony in support of its arguments. *See id.* Patent Owner first argues that Kim does not anticipate because it fails to disclose operation indicators. *See* Prelim. Resp. 15, 42 (relying on same argument for claims 1 and 25). For the same reasons discussed above in the claim construction section and analysis of claim 1, we reject Patent Owner’s proposed construction of “operation indicator” and determine, based on the current record, that Petitioner establishes adequately that Kim discloses monitoring operation indicators.⁹

Patent Owner also argues that Kim fails to disclose “whereby the one or more operati[on] indicators are generated without any connection to other apparatuses in the vehicle and outside the vehicle.” Prelim. Resp. 42. Petitioner argues that Kim discloses this limitation because its sensor unit generates operation indicators, and that unit “functions entirely with built in components” without connecting to other apparatuses. Pet. 43 (citing Ex. 1003 ¶ 334; Ex. 1005 ¶ 40). Patent Owner argues that “[n]othing in Kim ever suggests that the “operati[on] indicators are generated without any connection to other apparatuses in the vehicle and outside the vehicle.” Prelim. Resp. 42. Patent Owner also argues that Petitioner’s declarant testimony in support of its position lacks support. *Id.* (citing Ex. 1003

⁹ Patent Owner’s arguments as to the “transparently” and “previous change” limitations, discussed in the context of claim 1, do not apply to claim 25. *See* Prelim. Resp. 18, 22.

¶ 334). Patent Owner interprets Petitioner’s argument as an inherency argument that lacks support because in some situations Kim’s terminal connects to other apparatuses in a car such as a phone cradle or mount. *Id.* at 42–43 (citing Ex. 1005 ¶ 73).

Based on the current record, Petitioner establishes sufficiently that Kim discloses “whereby the one or more operati[on] indicators are generated without any connection to other apparatuses in the vehicle and outside the vehicle.” Patent Owner does not contest Petitioner’s contention that Kim’s sensing unit uses built in components such as a camera, microphone, and acceleration sensor, and we find those contentions adequately supported by the record. Ex. 1005 ¶ 40. Petitioner’s contention based on the ability to generate operation parameters with a sensing unit included with the terminal, without the need for any other structures to generate those operation indicators, adequately supports Petitioner’s contention that the operation indicators are generating without any connection to other apparatuses of the vehicle. *See* Pet. 43; Ex. 1003 ¶ 334. We do not agree with Patent Owner’s position that Kim must also expressly state that the sensing unit is not connected to any apparatus on the vehicle when that can be discerned from Kim’s disclosure by one of ordinary skill in the art. *See id.*¹⁰ The parties can explore these issues further during trial.

¹⁰ We do not interpret Petitioner’s argument as an inherency argument, as Patent Owner suggests. *See* Prelim. Resp. 42–43.

We have reviewed the remaining limitations of claim 25 and determine that Petitioner sufficiently establishes, based on the current record, that Kim discloses each of those limitations. Based on the current record, the Petition shows a reasonable likelihood that Petitioner would prevail in demonstrating that Kim anticipates claim 25.

5. Dependent Claims 4, 5, 13, 14, and 17–19

Petitioner argues that Kim discloses each of the limitations of dependent claims 4, 5, 13, 14, and 17–19. Pet. 27–37. Petitioner cites to portions of Kim and declarant testimony for its argument as to the additional limitations added by these dependent claims. *See id.* Patent Owner raises additional arguments as to each of these claims. *See* Prelim. Resp. 30–41.

Because we already determined that Petitioner establishes a reasonable likelihood that Kim anticipates claims 1, 2, 3, 9, 11, 21–24, and 25, we institute review of all challenged claims on all grounds set forth in the Petition, which includes Petitioner’s challenges to dependent claims 4, 5, 13, 14, and 17–19 as anticipated by Kim. *See SAS Inst. v. Iancu*, 138 S. Ct. 1348, 1354, 1359–60; PTAB Rules, 85 Fed. Reg. at 79,120 (“[T]he Board will either institute review on all of the challenged claims and grounds of unpatentability presented in the petition or deny the petition.”). Patent Owner’s arguments raise factual issues as to the proper interpretation of Kim that are best addressed after review of a full record developed during trial.

E. Remaining Challenges

Petitioner raises additional obviousness challenges against claims 6–8, 10, 12, 15, 16, and 18–20 based on Kim alone or Kim in combination with other art. *See* Pet. 4, 43–67. Patent Owner raises several arguments against these challenges. *See* Prelim. Resp. 43–61. As noted above, because Petitioner made an adequate showing as to anticipation of several claims by

Kim, we also institute *inter partes* review based on all of the obviousness challenges presented in the Petition, including the challenges to claims 6–8, 10, 12, 15, 16, and 18–20. As to the arguments raised by Patent Owner, we view these contested factual issues as best addressed after further development at trial.

CONCLUSION

After considering the evidence and arguments, we determine that the information presented shows a reasonable likelihood that Petitioner would prevail in establishing that at least one of the challenged claims of the '609 patent is unpatentable on grounds asserted in the Petition.

This decision does not reflect a final determination on the patentability of the claims. No arguments from the Preliminary Response carry over to trial and any arguments not made in Patent Owner's Response may be considered waived.¹¹

ORDER

Accordingly, it is

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review is instituted for claims 1–25 of the '609 patent on the unpatentability grounds asserted in the Petition; and

¹¹ See Consolidated Trial Practice Guide 52 (Nov. 2019) (“Once a trial is instituted, the Board may decline to consider arguments set forth in a preliminary response unless they are raised in the patent owner response.”); *In re NuVasive, Inc.*, 842 F.3d 1376, 1381 (Fed. Cir. 2016) (explaining that the patent owner waived an issue presented in its preliminary response that it failed to renew in its response during trial).

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.

PETITIONER:

Scott Border
SIDLEY AUSTIN LLP
sborder@sidley.com

PATENT OWNER:

Reginald J. Hill
Lisa M. Schoedel
JENNER & BLOCK LLP
rhill@jenner.com
lschoedel@jenner.com