

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

UNITED SERVICES AUTOMOBILE ASSOCIATION,
Petitioner,

v.

AUTO TELEMATICS LTD.,
Patent Owner.

IPR2023-00859
Patent 10,198,879 B2

Before GEORGE R. HOSKINS, FRANCES L. IPPOLITO, and
SEAN P. O'HANLON, *Administrative Patent Judges*.

O'HANLON, *Administrative Patent Judge*.

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

I. INTRODUCTION

A. Background

United Services Automobile Association (“Petitioner”) filed a Petition for *inter partes* review of claims 1–55 (“the challenged claims”) of U.S. Patent No. 10,198,879 B2 (Ex. 1001, “the ’879 patent”). Paper 3 (“Pet.”), 1. Auto Telematics Ltd. (“Patent Owner”) filed a Preliminary Response. Paper 7 (“Prelim. Resp.”).

Institution of an *inter partes* review is authorized by statute only when “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). We have authority, acting on the designation of the Director, to determine whether to institute an *inter partes* review under 35 U.S.C. § 314 and 37 C.F.R. § 42.4(a). For the reasons set forth below, upon considering the Petition, Preliminary Response, and evidence of record, we conclude that the information presented in the Petition fails to establish a reasonable likelihood that Petitioner would prevail in showing the unpatentability of any of the challenged claims. Accordingly, we decline to institute *inter partes* review.

B. Real Parties in Interest

Petitioner identifies itself and Noblr Reciprocal Exchange as real parties in interest. Pet. 91; Paper 6, 1.

Patent Owner identifies itself as the sole real party in interest. Paper 5, 2.

C. Related Matters

The parties indicate that the '879 patent is the subject of the following district court proceeding:

Auto Telematics Ltd. v. United Services Automobile Ass 'n,
No. 6-22-cv-00474 (W.D. Tex. filed May 11, 2022).

Pet. 91; Paper 5, 2. We note that the '879 patent was also the subject of the following district court proceeding:

Auto Telematics Ltd. v. United Services Automobile Ass 'n,
No. 6-23-cv-00506 (W.D. Tex. filed July 17, 2023).

The parties note that Petitioner filed two additional petitions for *inter partes* review of the '879 patent in IPR2023-00857 and IPR2023-00858.

Pet. 91; Paper 5, 2. Petitioner filed a notice explaining the differences between the three petitions and ranking the petitions in the order that Petitioner wishes the Board to consider them. Paper 2. Although Petitioner ranked the petition in this proceeding third (*see id.* at 1–2), the Office sent a Notice of Filing Date Accorded in this proceeding three weeks prior to similar notices sent in the other two proceedings. *Compare* Paper 4, 1 (mailed May 31, 2023), *with* IPR2023-00857, Paper 5 at 1 (mailed June 21, 2023) *and* IPR2023-00858, Paper 5 at 1 (mailed June 21, 2023). Thus, we consider the petition in this proceeding first.

Petitioner further notes other petitions for *inter partes* review it filed challenging related patents owned by Patent Owner. Pet. 91.

D. The Challenged Patent

The '879 patent discloses a mobile device adapted for installation to a vehicle and configured to log driving information associated with how the vehicle is driven. Ex. 1001, 1:22–27. The '879 patent acknowledges that

data logging devices for road vehicles exist, but asserts that they are difficult and costly to install. *Id.* at 1:34–58. The ’879 patent purports to improve upon known data logging devices by using the driver’s mobile telecommunications device, such as a smart phone, loaded with an application to provide data logging functionality. *Id.* at 2:15–26.

The mobile device contains a sensor set, including an image capture module, an accelerometer, a GPS receiver, and an audio capture module, for sampling physical data. Ex. 1001, 15:47–53. The device uses data captured by the sensors to derive driving information that is used to determine the occurrence of a driving incident, such as a collision. *Id.* at 13:36–46. For example, the accelerometer provides information regarding the pitch, yaw, and roll of the vehicle, which data may be used to determine the g-forces to which the vehicle has been subjected. *Id.* at 15:63–16:2. This data is useful in determining the severity of a collision. *Id.* at 16:2–3. The data captured by the sensors can also be used to monitor the driver’s driving performance and determine a profile for the driver, which an insurance company may use to determine the driver’s risk assessment on which insurance premiums are based. *Id.* at 13:46–49, 22:9–20.

E. The Challenged Claims

Petitioner challenges claims 1–55 of the ’879 patent. Pet. 1–2. Claims 1, 21, 46, 51, 54, and 55 are independent. Claim 1 is illustrative of the challenged claims and is reproduced below with bracketing used by Petitioner.

1. [1.1] A mobile telecommunications device configured to log driving information associated with a vehicle, the mobile telecommunications device comprising:

[1.2] a sensor set comprising an image sensor, an audio sensor, an accelerometer or a positioning module, or a combination thereof;

[1.3] a user interface;

[1.4] a processor and;

[1.5] a memory;

[1.6] the mobile telecommunications device being configured to:

determine, based on at least one of the inputs received by the user interface and sensor data from the device's sensor set, a start of a driving period during which the mobile device is removably attached to the vehicle and the vehicle is in use;

[1.7] process the sensor data from the sensor set during the driving period to derive driving information associated with how the vehicle is driven; and

[1.8] store a selection of the driving information to the memory;

[1.9] wherein the driving information is derived without data from the vehicle sensors, and [1.10] the mobile telecommunications device is controlled by a downloaded application to control the mobile device to process the driving information to generate a driving score associated with a particular driver.

Ex. 1001, 31:43–32:2; Pet. xi.

F. Asserted Grounds of Unpatentability

The Petition relies on the following prior art references:

Name	Reference	Exhibit
Tamir	US 7,821,421 B2, issued October 26, 2010	1006
Balachandran	US 6,073,004, issued June 6, 2000	1007
Thompson	Chris Thompson et al., “Using Smartphones to Detect Car Accidents and Provide Situational Awareness to Emergency	1008

Name	Reference	Exhibit
	Responders,” Mobilware 2010, LNICST 48, pp. 29–42, 2010	
Willis	WO 2007/114716 A1, published October 11, 2007	1009
Berkobin	US 2008/0255888 A1, published October 16, 2008	1010
Rabu	US 8,682,399 B2, issued March 25, 2014	1013
Katayama	EP 1 914 691 A1, published April 23, 2008	1024
Forstall	US 2009/0005975 A1, published January 1, 2009	1028
Langle	Lonnie Langle et al., “Are You a Safe Driver?” 2009 International Conference on Computational Science and Engineering, IEEE, 2009	1029
Warren	US 2006/0053038 A1, published March 9, 2006	1030

Petitioner asserts the following grounds of unpatentability:

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1–3, 5, 8, 11–13, 19–23, 25, 28–31, 39–44, 46–49, 51, 52, 54 ¹	103(a) ²	Forstall, Rabu, Warren, Langle
4, 24	103(a)	Forstall, Rabu, Warren, Langle, Tamir

¹ Although not listed in the table of grounds (*see* Pet. 1), Petitioner includes claim 40 in this challenge (*see id.* at 54). Although listed in the table of grounds (*see id.* at 1), Petitioner does not address claim 45 (*see id.* at 44–53).

² The application resulting in the ’879 patent claims priority to a date prior to when the Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112–29, 125 Stat. 284 (2011), took effect. Thus, we refer to the pre-AIA version of section 103.

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
6, 7, 16, 26, 27, 34	103(a)	Forstall, Rabu, Warren, Langle, Balachandran
9, 10, 14, 15, 17, 18, 32, 33, 35–38	103(a)	Forstall, Rabu, Warren, Langle, Katayama
14, 15, 32, 33	103(a)	Forstall, Rabu, Warren, Langle, Thompson
40, 50, 53	103(a)	Forstall, Rabu, Warren, Langle, Willis
55	103(a)	Forstall, Rabu, Warren, Langle, Berkobin

Pet. 1–2. Petitioner submits a declaration of William R. Michalson, Ph.D. (Ex. 1003, “Michalson Declaration”) in support of its contentions. Patent Owner does not submit any witness testimony with its Preliminary Response.

II. ANALYSIS

A. Principles of Law

A patent claim is unpatentable under 35 U.S.C. § 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 the 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 skill in the art, and (4) when in evidence, any objective

evidence of nonobviousness.³ *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

B. Level of Ordinary Skill in the Art

The level of ordinary skill in the art is “a prism or lens” through which we view the prior art and the claimed invention. *Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001). The person of ordinary skill in the art is a hypothetical person presumed to have known the relevant art at the time of the invention. *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995). In determining the level of ordinary skill in the art, we may consider certain factors, including: “(1) the educational level of the inventor; (2) type of problems encountered in the art; (3) prior art solutions to those problems; (4) rapidity with which innovations are made; (5) sophistication of the technology; and (6) educational level of active workers in the field.” *Best Med. Int’l, Inc. v. Elekta Inc.*, 46 F.4th 1346, 1353 (Fed. Cir. 2022) (quoting *Daiichi Sankyo Co. v. Apotex, Inc.*, 501 F.3d 1254, 1256 (Fed. Cir. 2007)). “The patent’s purpose can also be informative.” *Id.*

Petitioner contends that a person having ordinary skill in the art at the time of the invention would have had “a Bachelor’s of Science Degree (or equivalent) in an academic area emphasizing electrical engineering, computer engineering, computer science, or a related technical field, and about 2-3 years of experience in the field of telematics systems (e.g., familiarity with control and diagnostic systems, navigation systems and wireless communication technology),” and that “[a] greater amount of

³ The parties have not directed us to any such objective evidence.

education, i.e., a doctorate in an academic area emphasizing electrical engineering, computer engineering, computer science, or a related technical field, would compensate for fewer years of work experience.” Ex. 1003 ¶ 15; *see also* Pet. 19 n.5 (citing same).

Patent Owner does not contest Petitioner’s proposed definition or proffer a definition of its own. Prelim. Resp. 16.

Based on the arguments presented and the cited references, we find Petitioner’s definition of the level of ordinary skill reasonable and for purposes of this Decision, adopt it as our own.

C. Claim Construction

In an *inter partes* review, claims are construed using the same claim construction standard that would be used to construe the claims in a civil action under 35 U.S.C. § 282(b), including construing the claims in accordance with the ordinary and customary meaning of such claims as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent. 37 C.F.R. § 42.100(b). “[T]he ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention” and “after reading the entire patent.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313, 1321 (Fed. Cir. 2005) (en banc). In addition to the specification and prosecution history, we also consider use of the terms in other claims and extrinsic evidence including expert and inventor testimony, dictionaries, and learned treatises, although extrinsic evidence is less significant than the intrinsic record. *Id.* at 1312–17. Usually, the specification is dispositive, and it is the single best guide to the meaning of a

disputed term. *Id.* at 1315. We also consider “[a]ny prior claim construction determination concerning a term of the claim in a civil action . . . that is timely made of record” in this proceeding. 37 C.F.R. § 42.100(b).

“The Board is required to construe ‘only those terms . . . that are in controversy, and only to the extent necessary to resolve the controversy.’” *Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1375 (Fed. Cir. 2019) (alteration in original) (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)).

Petitioner asserts that “no express constructions are required,” but argues that, “[b]ased on plain meaning, the recited ‘driving period’ references a time period ‘during which [a] mobile device is removably attached to the vehicle and the vehicle is in use.’” Pet. 3–4 (second alteration in original) (citing Ex. 1003 ¶¶ 62, 128). According to Petitioner, “[t]hese attributes may be satisfied by a start of a monitoring period, whether at the onset of vehicle driving or whether instead before or thereafter.” *Id.* at 4 (citing Ex. 1003 ¶ 130).

Patent Owner disagrees with Petitioner’s interpretation of “driving period,” arguing that “[n]owhere in the ’879 [patent] specification or claims is Petitioner’s constructed term ‘monitoring period’ used or defined.” Prelim. Resp. 17–18. Patent Owner argues that, “[i]nstead, the claims require that the mobile device be removably attached *during* the driving period.” *Id.* at 18.

On this record and for purposes of this decision, we determine that no claim terms require express construction.

D. Overview of the Asserted Prior Art

1. *Forstall*

Forstall describes mobile device aided navigation, and the use of dead reckoning to estimate the location of a mobile device. Ex. 1028, code (57). For example, Forstall describes navigation based on device position, received sensor data, and an interpretation of the received sensor data as corresponding to movement along a pathway defined by map data. *Id.* ¶ 6. Specifically, “[s]ensor data from accelerometers, a compass, gyroscopes, and impact sensors can be used alone or in combination to, for example, measure the movement of the device 100 from a point of origin or known location (a ‘fix’) to determine the device’s location relative to the fix.” *Id.* ¶ 62. The “mobile device 100 can be, for example . . . a cellular telephone, . . . a smart phone,” or any of several possible other devices. *Id.* ¶ 24. The mobile device may include different types of sensors, such as a proximity sensor, an ambient light sensor, an accelerometer, a compass, and a gyroscope. *Id.* ¶¶ 35–36.

2. *Rabu*

Rabu “relates generally to portable media devices and in particular to determining a docking status of a portable media device using data from one or more motion sensors.” Ex. 1013, 1:7–10. Rabu’s portable media device (“PMD”) can receive input from one or more motion sensors, such as an accelerometer and a gyroscope. *Id.* at 7:11–13. “[T]he input can indicate orientation angle and motion information of the PMD.” *Id.* at 7:14–15. The PMD can determine a holder status and can determine whether it is in a moving vehicle, in a stationary vehicle, being handled by a moving person,

or being handled by a stationary person. *Id.* at 7:15–16, 7:22–26. “[T]he PMD can select a mode of operation based on the holder status and the holder motion status.” *Id.* at 3:1–3.

3. *Langle*

Langle is a technical conference publication (“2009 International Conference on Computational Science and Engineering”) titled “Are You a Safe Driver.” Ex. 1029, 1.⁴ Langle relates “to aid[ing] in safe driving practices and detection of emergencies” via a cell phone’s accelerometers and compass. *Id.* Langle describes that “[m]obile phones which have embedded accelerometers may be used for risk level detection while riding in a vehicle.” *Id.* According to Langle, “[p]rogramming with accelerometers on the Android platform is straightforward and supports three axes.” *Id.* Langle describes using accelerometers to assess safe and unsafe braking, acceleration, and lane changes. *Id.* at 1–4.

4. *Warren*

Warren is directed to the collection of “driver characteristic data” and the generation of a “driver score based on the collected driver characteristic data,” where the “driver score can then be applied in the calculation of insurance premiums or risk analysis.” Ex. 1030 ¶ 4. Warren proposes that “a vehicle monitor is installed or coupled to a vehicle to be monitored,” where the “vehicle monitor collects data from various sensors to identify

⁴ Our citations herein refer to the pagination added by Petitioner to the bottom, center of each page.

vehicle operation data,” and, “[b]ased at least in part on the vehicle operation data, a driver score is calculated.” *Id.* ¶ 12.

5. *Tamir*

Tamir discloses the collection of driving information from a plurality of vehicles and the evaluation of “driving behavior of a first vehicle based on information from at least one other vehicle or to a statistical analysis of multiple other vehicles.” Ex. 1006, 2:19–23. Tamir describes that, in some embodiments, “samples are collected at a dynamically adjusted rate” and the “rate of sampling is optionally determined according to the location of the driving, for example accumulating more samples at areas where there [are] many accidents or near intersections.” *Id.* at 9:10–20. Tamir further describes that, “when it is determined that the driver is driving relatively daringly, a higher sampling rate is used.” *Id.* at 20:62–21:1.

6. *Balachandran*

Balachandran describes “enabling emergency call initiations in response to the detection of a vehicle accident.” Ex. 1007, code (57). More specifically, Balachandran relates to “the use of a cellular telephone for automatically initiating an outgoing call in response to a vehicle accident.” *Id.* at 1:6–9. Balachandran describes the importance of “automatically initiating an emergency call through a cellular telephone system in response to a vehicle accident without the need for subscriber initiation.” *Id.* at 1:27–30. Balachandran’s system “includes a plurality of sensors 10 strategically located about a vehicle to detect an accident involving the vehicle.” *Id.* at 2:19–21. In the event of an accident that warrants an emergency call, “the processor activates a timer 35 located within the

cellular telephone 15,” and the “timer 35 provides a preselected time delay before initiating an outgoing emergency call in response to detection of a vehicle accident.” *Id.* at 2:50–56. An “audio or visual indication notifies the passengers of activation of the timer 35 and ceases with expiration or cutoff of the timer” to provide “the passengers in the vehicle a period of time to gather their wits after an accident.” *Id.* at 2:56–60. “After the time delay period expires the processor 30 initiates emergency call setup.” *Id.* at 2:64–66.

7. *Katayama*

Katayama describes a driving monitor that records driver behavior and “a surrounding situation” during a period before and after an accident. Ex. 1024 ¶ 1. Katayama’s driving recorder includes an information processing device that includes a data receiving section, a temporary data storage section, a situation data recording section, and a data administration section. *Id.* ¶¶ 31, 44. The “data administration section 804 determines whether or not the content of the situation data stored in the temporary data storage section 802 meets the predetermined condition,” and if so, the situation data is “transferred from the temporary data storage section 802 to the situation data recording section 803.” *Id.* ¶ 46.

8. *Thompson*

Thompson is a university publication (“Institute for Software Integrated Systems, Vanderbilt University”) titled “Using Smartphones to Detect Car Accidents and Provide Situational Awareness to Emergency

Responders.” Ex. 1008, 1.⁵ Thompson purports to provide “contributions to the study of using smartphone-based accident detection systems” and “solutions to key issues associated with detecting traffic accidents, such as preventing false positives by utilizing mobile context information and polling onboard sensors to detect large accelerations” and “the architecture of [a] prototype smartphone-based accident detection system.” *Id.*

Thompson explains that “[b]uilding a smartphone-based wireless mobile sensor network for accident detection system is hard . . . because phones can be dropped (and generate false positives) and the phone is not directly connected to the vehicle.” Ex. 1008, 2. Thompson further explains that “conventional in-vehicle accident detection systems rarely incur false positives because they rely on sensors, such as accelerometers and airbag sensors, that directly detect damage to the vehicle.” *Id.* Thompson purports to provide a solution by showing “how smartphones in a wireless mobile sensor network can capture the streams of data provided by their accelerometers, compasses, and GPS sensors to provide a portable ‘black box’ that detects traffic accidents and records data related to accident events, such as the G-forces (accelerations) experienced by the driver.” *Id.*

9. Willis

Willis generally relates to “a method of determining the proximity of a first radio frequency device to a second radio frequency device” and “a method for the control of a switch based on the proximity to each other of a first radio frequency device and a second radio frequency device.”

⁵ Our citations herein refer to the pagination added by Petitioner to the bottom, center of each page.

Ex. 1009, 2:5–9. As an example, Willis discloses an embodiment that provides “proximity detection of the phone coming within 2 meters of the vehicle in any manner and from any direction.” *Id.* at 15:28–29.

10. Berkobin

Berkobin’s disclosure relates to “determining driver behavior [by] receiving vehicle performance data, determining a driver safety metric based on the vehicle performance data, and transmitting the safety metric to a remote host.” Ex. 1010 ¶ 2. “[A]n embedded GPS and cellular transceiver . . . support real-time, remote driver and vehicle performance metrics.” *Id.* ¶ 21. As an example, Berkobin’s apparatus includes vehicle-mounted transceivers. *Id.* ¶ 25. The apparatus “can interface and monitor various vehicle systems and sensors to determine vehicle conditions.” *Id.* ¶ 38. “[S]ubsystems can include a BlueTooth transceiver . . . to interface with devices such as phones” and “user inputs[] such as [an] emergency button . . . caus[ing a] processor 106 to initiate a voice and data connection from the vehicle to a central monitoring station . . . referred to as a remote call center.” *Id.* ¶ 44. “Data such as GPS location and occupant personal information can be transmitted to the call center.” *Id.* The apparatus “can transmit vehicle performance data upon a triggering event such as, but not limited to vehicle crash indication, acceleration above a threshold, speed above a threshold, and the like.” *Id.* ¶ 54.

E. Asserted Obviousness Based on Forstall, Rabu, Warren, and Langle

Petitioner argues that claims 1–3, 5, 8, 11–13, 19–23, 25, 28–31, 39–44, 46–49, 51, 52, and 54 would have been obvious in view of Forstall,

Rabu, Warren, and Langle. Pet. 6–54.⁶ In support of its showing, Petitioner relies upon the Michalson Declaration. *Id.* (citing Ex. 1003). We have reviewed Petitioner’s assertions and supporting evidence. For the reasons discussed below, and based on the record before us, we determine that Petitioner does not demonstrate a reasonable likelihood of prevailing in showing that at least one challenged claim would have been obvious in view of the combination of Forstall, Rabu, Warren, and Langle.

Independent claim 1 recites, in relevant part, a mobile communications device configured to process sensor data from the device’s sensor set during a driving period to derive driving information associated with how a vehicle is driven. Ex. 1001, 31:59–61. Independent claims 21, 46, 51, and 54 contain similar recitations. *Id.* at 33:57–59, 36:14–16, 37:7–9, 38:4–6. Petitioner relies on Forstall to disclose a mobile telecommunications device (mobile device 100) with a sensor set, including accelerometer 172. Pet. 25–28. Petitioner relies on Langle to teach “evaluating (‘processing’) sensor data (e.g., accelerometer measurements) to identify driving safety data indicating safe and unsafe driving behaviors (‘driving information associated with how the vehicle is driven’).” *Id.* at 35 (emphases omitted) (citing Ex. 1029, 1–3, Figs. 2, 4). Petitioner argues that it would have been obvious to an ordinarily skilled artisan to “incorporate[e] [Langle’s] safety techniques into Forstall’s mobile device” because “[m]obile-based navigation systems were known to increase the risk of

⁶ Although Petitioner does not list claim 40 in the table of grounds (*see* Pet. 1), Petitioner includes claim 40 in this challenge (*see id.* at 54). Although Petitioner lists claim 45 in the table of grounds (*see id.* at 1), Petitioner does not address claim 45 (*see id.* at 44–53).

accidents.” *Id.* at 22 (citing Ex. 1003 ¶¶ 113, 116). Petitioner relies on its arguments advanced for claim 1 in challenging the similar recitations of the other independent claims, including the recitations noted above. *Id.* at 39–40.

Patent Owner argues that the Petition does not set forth adequate reasoning for combining the teachings of Forstall, Rabu, and Langle. Prelim. Resp. 43–49. Patent Owner argues that an ordinarily skilled artisan “would not be motivated to combine the Forstall navigation system (whether alone or in combination with Rabu) with the acceleration curve classification methods of Langle.” *Id.* at 45. According to Patent Owner, “Petitioner has not established[] how evaluating vehicle acceleration, braking, and lane changing as discussed by Langle could address a safety risk associated with using a navigation system as disclosed by Forstall.” *Id.* at 46. Patent Owner further argues that Petitioner’s rationale for incorporating the teachings of Langle are generic and conclusory. *Id.* at 46–49.

We agree that Petitioner has not explained adequately how the teachings of Langle would be incorporated into Forstall’s navigation system. As noted above, Petitioner relies on Langle’s asserted “safety techniques.” Pet. 22. However, Petitioner does not identify adequately what these “safety techniques” are or how they would be incorporated into Forstall’s device. *See id.*; Ex. 1003 ¶¶ 113–116. To the extent Petitioner relies on Langle to teach a technique of using a [mobile device] to ‘classify safe versus unsafe driving[]’” (Pet. 15 (second alteration in original)), Petitioner has not explained adequately how this classification would impact “the risk of accidents,” Petitioner’s rationale for combining the teachings of Langle with those of Forstall (*see id.* at 22).

Nor does our review of Langle support Petitioner's assertions. Generally, Langle is directed to the potential use of mobile phone sensors in aiding "safe driving practices and detection of emergencies." Ex. 1029, 1. Langle teaches that "[i]n this paper, we used the multiple sensors in a Google phone to classify safe versus unsafe driving." *Id.* This classification was done by the authors by collecting sensor measurements and modeling driving behavior. To do so, Langle provides detailed mathematical calculations, performed by the authors, to model several different driving behaviors. *Id.* at 1–5. For example, Langle teaches that

we calculated the displacement in the axis perpendicular to the trajectory of vehicle and used it to classify safe and unsafe lane changes. The direction of the phone with respect to the motion of the vehicle is important during calibration of the above measurements, so we used 2D and 3D rotation matrices for transforming device orientation. Future work includes calibration of braking distance, lane changes, and reliable transformation of phone orientation with respect to trajectory of the vehicle.

Id. at 1 (emphases added). Even assuming that programming with accelerometers is "straightforward," as asserted by Petitioner (*see* Pet. 22), it is unclear what specific "safety techniques" in Langle that Petitioner contends would have applied to Forstall. As discussed, Langle discloses detailed calculations and graphed data curves produced by the authors of the paper using data collected from mobile device sensors. In some instances, Langle observes that the modeling shows "safe" versus "unsafe" driving behavior such as safe or unsafe deceleration. *See* Ex. 1029, 2. Langle notes, however, that "'safe' is a relative term so this paper only assumes that 'safe' driving and 'unsafe' driving have [measurable] differences in acceleration." *Id.* In other instances, Langle cautions that the methods discussed in the

paper were preliminary and that “[g]eneral classification is possible given [a mobile phone’s] GPS speed sensor and triple-axis accelerometer, but the hardware may not be accurate enough to perform other measurements such as braking distance and lane change width reliably.” *Id.* at 5. For example, Langle acknowledges that “[s]ensor data collection with the mobile phone requires some extra considerations regarding device placement.” *Id.* at 4.

As another example, Langle discloses,

As we see in [Figure 1], safe acceleration and deceleration never reaches more than 0.3 g in either the positive or negative direction.

....

The unsafe acceleration depicted in Figure 2 shows the same overall shape of safe acceleration but a slightly higher G-force of 0.43 g on this incline. Apparently the car used (2007 Pontiac G6 Sport) does not have enough power to significantly amplify the acceleration chart.

....

Using this data it is easy to see the difference between safe and unsafe deceleration, yet the distinction is not so clear for accelerations.

Id. at 2 (emphases added). We understand Langle to report varied methods and results for the modeling performed. Yet, the Petition does not set forth with requisite particularity what aspects of Langle that Petitioner argues an ordinarily skilled artisan would have incorporated into Forstall’s navigation application that would have predicted accident-related risks. *See* Pet. 22 (asserting that Langle “describe[s] a technique to predict accident related-risks”).

Even assuming that an ordinarily skilled artisan may have been able to discern what aspects of Langle to apply to Forstall, Petitioner’s asserted combination does not explain adequately how the techniques described in

Langle improve safety in combination with Forstall's navigation system. Petitioner argues that "[m]obile-based navigation systems were known to increase the risk of accidents since they typically involve mounting a mobile device to a vehicle dashboard so that a user may view navigation information while driving." Pet. 22 (citing Ex. 1003 ¶ 113; Ex. 1031 ¶ 2). As discussed, Langle describes the classification of data into "safe" and "unsafe" driving. Ex. 1029, 1. Langle explains that

[g]eneral classification is possible given [a mobile phone's] GPS speed sensor and triple-axis accelerometer, but the hardware may not be accurate enough to perform other measurements such as braking distance and lane change width reliably. In order to be useful as a measurement tool and phone, the coordinate space must be periodically measured and corresponding accelerometer measurements adjusted for.

Id. at 5. Petitioner, however, has not explained adequately how the classification of GPS speed sensor and accelerometer data into "safe" or "unsafe" driving categories, by itself alone, would improve navigation driving safety in Forstall's navigation system.

For the foregoing reasons, Petitioner has not shown sufficiently that the asserted combination of references discloses deriving driving information as recited in independent claims 1, 21, 46, 51, and 54 and incorporated into their respective dependent claims. Therefore, Petitioner does not demonstrate a reasonable likelihood of prevailing in showing that claims 1–3, 5, 8, 11–13, 19–23, 25, 28–31, 39–44, 46–49, 51, 52, and 54 would have been obvious in view of Forstall, Rabu, Warren, and Langle.

F. Petitioner's Other Asserted Challenges

Petitioner's other challenges rely on the same combination of Forstall, Rabu, Warren, and Langle discussed above. Pet. 1–2, 54–87. Petitioner's reliance on Tamir, Balachandran, Katayama, Thompson, Willis, and Berkobin does not remedy the deficiencies noted above regarding the combination of Forstall and Langle. *See id.* For at least the same reasons set forth above, Petitioner does not demonstrate a reasonable likelihood of prevailing on any of its other asserted challenges to the claims of the '879 patent.

III. CONCLUSION

For the foregoing reasons, we are not persuaded that the Petition establishes a reasonable likelihood that Petitioner would prevail in any of its challenges to claims 1–55 of the '879 patent.

IV. ORDER

In consideration of the foregoing, it is hereby ordered that the Petition is *denied*, and no trial is instituted.

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For PETITIONER:

W. Karl Renner
Thomas Rozylowicz
Andrew B. Patrick
Michael T. Zoppo
Ryan Chowdhury
Jennifer J. Huang
FISH & RICHARDSON P.C.
IPR36137-0027IP3@fr.com
PTABInbound@fr.com
axf-ptab@fr.com
tar@fr.com
patrick@fr.com
zoppo@fr.com
rchowdhury@fr.com
jjh@fr.com

For PATENT OWNER:

Steven E. Tiller
Gregory Stone
WHITEFORD, TAYLOR & PRESTON, L.L.P.
stiller@whitefordlaw.com
gstone@whitefordlaw.com