

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

UNITED SERVICES AUTOMOBILE ASSOCIATION,
Petitioner,

v.

AUTO TELEMATICS LTD.,
Patent Owner.

Case IPR2023-00857
Patent No. 10,198,879

PATENT OWNER AUTO TELEMATICS LTD's RESPONSE
PURSUANT TO 37 C.F.R. §42.120

TABLE OF CONTENTS

I.	INTRODUCTION	1
II.	THE '879 PATENT	1
	A. The Problem Addressed by the '879 Patent	1
	B. The '879 Patent's Solution.....	2
III.	PERSON OF ORDINARY SKILL IN THE ART.....	4
IV.	CLAIM CONSTRUCTION.....	4
	A. Claim Language.....	7
	B. The Specification Supports Patentability.....	12
	C. Prosecution History Supports Patentability Then and Now.....	16
	D. As in Plante, Disclosure of Driving Information Logging and Processing is Lacking in References Relied Upon by Petitioner ..	18
	1. Curry <i>et al.</i> – Exhibit USAA-1005.....	18
	2. Rabu – Exhibit USAA-1013	25
V.	GROUND 1A: THE CITED CLAIMS ARE PATENTABLE OVER THE COMBINATION OF CURRY AND RABU.....	29
	A. Claim 1 is Patentable Over the Combination of Curry and Rabu Because the References, Alone or In Combination, Does/Do Not Teach, Suggest, or Render Obvious All Elements	30
	B. Petitioner Lacks Sufficient Motivation to Combine Curry and Rabu	47
	1. The Combination Would Provide No Reasonable Expectation of Success	47

2. Petitioner’s Rationale to Combine Curry and Rabu Is Based Entirely On Impermissible Hindsight, Using the ’879 Patent as a Roadmap	51
C. Claims 2, 3, 5, 6, 8, 11-13, 19-23, 25, 28-31, 39-44, 46-49, 51, 52, and 54 Are Patentable Over the Combination of Curry and Rabu	54
VI. GROUND 1B: CLAIMS 4 AND 24 ARE PATENTABLE OVER THE COMBINATION OF CURRY, RABU, AND TAMIR	55
VII. GROUND 1C: CLAIMS 6, 7, 16, 26, 27, AND 34 ARE PATENTABLE OVER THE COMBINATION OF CURRY, RABU, AND BALACHANDRAN	56
VIII. GROUND 1D: CLAIMS 9, 10, 14, 15, 17, 18, 32, 33, AND 35-38 ARE PATENTABLE OVER THE COMBINATION OF CURRY, RABU, AND KATAYAMA.....	56
IX. GROUND 1E: CLAIMS 14, 15, 32, AND 33 ARE PATENTABLE OVER THE COMBINATION OF CURRY, RABU, AND THOMPSON2010	58
X. GROUND 1F: CLAIMS 45, 50, AND 53 ARE PATENTABLE OVER THE COMBINATION OF CURRY, RABU, AND WILLIS.....	61
XI. GROUND 1G: CLAIM 55 IS PATENTABLE OVER THE COMBINATION OF CURRY, RABU, AND BERKOBIN	62
XII. CONCLUSION	63

TABLE OF AUTHORITIES

CASES

<i>Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.</i> , 800 F.3d 1375 (Fed. Cir. 2015).....	30
<i>Graham v. John Deere Co. of Kansas City</i> , 383 U.S. 1 (1966).....	29
<i>Harmonic Inc. v. Avid Tech., Inc.</i> , 815 F.3d 1356 (Fed. Cir. 2016).....	30
<i>In re Fritch</i> , 972 F.2d 1260 (Fed. Cir. 1992).....	52
<i>In re Kahn</i> , 441 F.3d 977 (Fed. Cir. 2006).....	29
<i>In re Magnum Oil Tools Int’l, Ltd.</i> , 829 F. 3d 1364 (Fed. Cir. 2016).....	29
<i>In re Nuvasive, Inc.</i> , 842 F.3d 1376 (Fed. Cir. 2016)	29
<i>In re Rinehart</i> , 531 F.2d 1048, 189 USPQ 143 (CCPA (1976))	47
<i>Intercontinental Great Brands LLC v. Kellogg N. Am. Co.</i> , 869 F.3d 1336 (Fed. Cir. 2017)	52
<i>KSR Int’l Co. v. Teleflex Inc.</i> , 550 U.S. 398 (2007)	29
<i>Netword, LLC v. Centraal Corp.</i> , 242 F.3d 1347 (Fed. Cir. 2001)....	12
<i>Phillips v. AWH Corp.</i> , 415 F.3d 1303 (Fed. Cir. 2005)	4,5,12,16,41,52,54

STATUTES

35 U.S.C. § 103.....	29
35 U.S.C. § 312.....	30

REGULATIONS

37 C.F.R. § 42.100	4
37 C.F.R. § 42.104	30

	EXHIBIT LIST
AT-2001	Declaration of Christopher K. Wilson
AT-2002	Ogawa, A. et al., <i>Identification of Human Activity Modes with Wearable Sensors for Autonomous Human Positioning System</i> , 22nd Asian Conference on Remote Sensing, Centre for Remote Imaging, National University of Singapore, Nov. 5-9, Singapore (2001)
AT-2003	National Highway Traffic Safety Administration EDR Q&As, https://www.nhtsa.gov/sites/nhtsa.gov/files/edr_qas_11aug2006.pdf (Last visited - January 29, 2024)
AT-2004	List of References Cited by Applicant and Considered by Examiner, considered July 17, 2013 and posted July 23, 2013, from Information Disclosure Statement (IDS), filed December 15, 2009, in USPTO file wrapper of Patent Application 12/638,454
AT-2005	Authentication Declaration of Mary Longchamp for AT-2003
AT-2006	Authentication Declaration of Christopher K. Wilson for AT-2003
AT-2007	Excerpts from the Prosecution History of U.S. Pat. No. 9,633,487 B2 (“the ’487 Patent”)

Patent Owner Auto Telematics Ltd. (“Patent Owner”) submits this Response to the Petition of United Services Automobile Association (“Petitioner”) for *Inter Partes* Review (“IPR”) of claims 1-55 of U.S. Patent No. 10,198,879 (“the ’879 patent”).

I. INTRODUCTION

The ’879 patent describes methods and systems for logging driving information associated with a vehicle when driven. The mobile device is arranged to determine the start of the driving period during which the device is installed to the vehicle and the vehicle is in use to log driving information. The mobile device is also arranged to process sensor data during the driving period to derive driving information associated with how the vehicle is driven. The mobile device uses the sensors of the mobile device but not the sensors of the vehicle.

II. THE ’879 PATENT

A. The Problem Addressed by the ’879 Patent

Before the invention of the ’879 patent, data logging devices for road vehicles, or “black boxes,” were used to log data about events associated with the behavior of a vehicle using vehicle sensors. Such events could stem from a vehicle malfunction or driver negligence and causes of such events could be estimated from analysis of the logged vehicle sensor data. Taking data from vehicle-

integrated sensors, these black boxes were integrated with the car data network. AT-2001, ¶¶ 35-37.

However, such black boxes that integrate with vehicle sensors were difficult and costly to install. Thus, mobile data logging devices for logging driving information having their own sensors that could be easily and inexpensively installed to vehicles and that could perform event detection and analysis during entire driving periods while managing data storage were not known in the art at the time of the invention. AT-2001, ¶37.

B. The '879 Patent's Solution

The '879 patent is directed to for logging driving information associated with how and when a vehicle is being driven. USAA-1001, Abstract. A mobile device including a sensor set is adapted for installation (e.g., removable physical and/or electronic attachment) to the vehicle and configured to log such driving information, process driving information to detect a driving incident, and maintain a selection of the driving information related to the driving incident during a driving period. *Id.*, Abstract, 3:5-18, 4:50—5:21, 8:8-17. AT-2001, ¶19.

For example, location, speed, and acceleration of the vehicle associated with how the vehicle is driven can be captured and processed, using only the sensor data from only the mobile device's sensors. USAA-1001, 2:15-26. Driving information such as variation in velocity, speed of impact, pitch, yaw, roll, G-force,

bearing/heading, and time elapsed can be derived from the sensor data. *Id.*, 10:42-49, 13:64—14:14, 15:65—16:3, 16:48-61, 19:45-48, 21:21-29, 25:65—26:11. The derived driving information can be processed using only the processing capabilities of the mobile device and analyzed to automatically detect and capture an event such as a crash in real time. *Id.*, 5:27-38, 7:23-26, 17:53-58, 19:17-43. The derived driving information related to that crash can be enhanced, persistently stored in the phone, and prevented from being overwritten so that it can later be used by third parties. *Id.*, 5:22-26, 6:39-60, 7:42-49, 8:12-17, 17:8-14, 17:22-26, 18:5-10, 20:5-15. The mobile device can calculate a driving score associated with a driver with respect to the driving information over that driving period and update the driving score associated with additional driving periods. *Id.*, 10:27-30, 12:16-26. AT-2001, ¶20.

“[T]he use of a mobile telecommunication device enables a data logging device to be conveniently and inexpensively retrofitted to a vehicle....A generic mobile telecommunication device already owned by a driver of the vehicle can be loaded with the application to provide such data logging functionality that would otherwise necessitate a dedicated black-box. Thus, the functionality of a black-box can be realised without additional expense.” USAA-1001, 2:15-26. However, as black-box functionality is applied to a mobile phone, storage concerns arise. The invention can limit the storage of data to a selection of important data while

providing focused recording on the device of data corresponding to detected events (e.g., “driving information”) to address these concerns. *Id.*, 2:11-14; 11:1-17. When a driving event is detected and considered to be important, this data is determined from the sensor data and stored to long-term storage. *Id.*, 18:5-10; AT-2001, ¶¶39-43.

III. PERSON OF ORDINARY SKILL IN THE ART

Auto Telematics (“AT”) does not dispute Petitioner’s proposed definition of a person of ordinary skill in the art (“POSITA”). AT’s expert, Christopher K. Wilson (“Wilson”), nonetheless opines that a POSITA would *also* include individuals with a Bachelor of Science degree in other fields, including physics, and that the particular educational experience becomes less relevant as the individual’s experience in the telematics field increases. AT-2001, ¶¶10-11. In this regard, Wilson opines that a POSITA would include individuals with a B.S. Degree in any discipline and 3–5 years of experience in the field of telematics systems. *Id.*

IV. CLAIM CONSTRUCTION

In an IPR, claim terms are generally given their ordinary and customary meaning as would be understood by a POSITA at the time of the invention in the context of the entire patent disclosure. *See* 37 C.F.R. §42.100(b); *see also Phillips*

v. AWH Corp., 415 F.3d 1303, 1312–14 (Fed. Cir. 2005).¹ Here, Petitioner initially asserts that no express constructions are required in this proceeding.” Pet. 3. Petitioner then construes the term “driving period” as having only two attributes: “(1) ‘the mobile device is removably attached to the vehicle’ and (2) ‘the vehicle is in use.’” *Id.*, 4. Further, Petitioner asserts that “[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.* Similar arguments were rejected by the Court in the parallel District Court proceeding and should likewise be rejected here.

Petitioner’s characterization of the start of a driving period as a “monitoring period” that starts at any time with respect to the onset of driving (*id.*) is simply inaccurate and has no basis in the specification or claims. Nowhere in the ’879 specification or claims is the term “monitoring period” used or defined. *See generally* USAA-1001. Instead, the claims require that the mobile device

¹ Patent Owner notes that in the parallel District Court proceeding involving the ’879 patent (among others), Petitioner sought construction of several terms including “sensor set,” “driving period,” “driving information,” and “driving score.” As to each of these terms, the Court agreed with Patent Owner that no construction was required and that the plain and ordinary meaning of each term applied.

“determine, based on inputs received by the user interface and sensor data from the 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.” *See id.*, Claim 1 (emphasis added). The claim language accurately captures the scope of the invention, and there is no need for a different construction incorporating Petitioner’s manufactured limitations for the driving period.

Based on a plain reading of the language of Claim 1, “...during which the mobile device is removably attached to the vehicle and the vehicle is in use” does not itself define a “driving period.” Rather, this language simply provides additional limitations of the overall invention. AT-2001, ¶53. A “driving period” is the period in which the vehicle is being driven. Given the purpose of the invention (to determine insurance premiums, modify driving behavior, or determine a cause of an event such as an accident) (USAA-1001, 1:28-30), the driving period must be the entire period in which the vehicle is being driven (absent short periods related to getting up to speed, backing out of driveway, leaving a particular geo-fence, etc.). AT-2001, ¶54. The purpose of the invention would not be met if the “driving period” could start at the beginning, middle or end of the period in which the vehicle is being driven, as Petitioner argues. Pet. 3. Accidents and poor driving could be missed. In other words, a monitoring period that starts at any point and monitors only a portion of a driving period for some random period of time,

untethered from the vehicle actually being driven, is not a “driving period” as claimed. AT-2001, ¶55.

A. Claim Language

The '879 patent has six independent claims. Claim 1 provides:

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

a sensor set comprising an image sensor, an audio sensor, an accelerator or a positioning module, or a combination thereof;

a user interface;

a processor and;

a memory;

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;

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

store a selection of the driving information to the memory;

wherein the driving information is derived without data from the vehicle sensors, and 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.

USAA-1001 at 31:43—32:2. Claim 46 is substantially similar to claim 1, but replaces the final paragraph of claim 1 with:

wherein the driving information is derived without data from the vehicle sensors and the mobile telecommunications device is configured to process the sensor data by determination of at least one of:
vehicle acceleration events; and
vehicle braking events;
wherein the determining of such events occurs when data from the sensor set accords with predefined threshold values; and
wherein 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.

Id., 36:19-32. Further, claim 54 is nearly identical to claim 1, but replaces the term “attached” with “affixed.” *Id.*, 38:2. Finally, claim 55 is substantially similar to claim 1, and adds the following:

the processing involving the use of a neural network on the mobile telecommunications device to determine whether the driving information represents an acceptable or unacceptable driving pattern.

Id., 38:33-37.

Further, claim 21 provides:

21. A non-transitory computer readable medium having instructions comprising a software application stored thereon, wherein the instructions are configured to be executed on a processor of a mobile telecommunications device to enable the mobile telecommunications device to log driving information associated with a driver of a vehicle, the mobile telecommunications device including a display; a sensor set comprising an image sensor, an audio sensor, and accelerometer or a positioning module, or a combination thereof; the processor, and a memory, wherein the instructions, upon execution by the processor, enable the mobile telecommunications device to:

present a user interface on the display;

determine, based on at least one of the inputs received by the user interface and/or sensor data from the sensor set, a start of a driving period during which the mobile telecommunications device is removably attached to a vehicle and the vehicle is being driven by the driver;

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

store a selection of the driving information to the memory; and

generate a driving score associated with the driver, wherein the driving information is derived without data from vehicle sensors.

Id., 33:39-64. Claim 51 is substantially similar to claim 21, replacing the phrase “based on at least one of the inputs received by the user interface and/or sensor data from the sensor set” with “based on at least inputs received by the user interface and sensor data from the sensor set,” and adding the following to the final paragraph:

and comprises the determination of at least one of:
vehicle acceleration events; and
vehicle breaking events;

wherein the determination of such events occurs when data from the sensor set accords with predetermined threshold parameters.

Id., 37:14-20.

Independent claims 1, 46, 51, 54, and 55 require that the mobile device be 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**,” and claim 21 similarly requires that the mobile device be configured to determine, “based on at least one of the inputs received by the user interface and/or sensor data from the sensor set, **a start of a driving period**.” *See, e.g., id.*, 31:54-58 (emphasis added). Critical to the invention is that the mobile device determines the start of a driving period to initialize its logging functionality on the mobile device. Each of the independent claims also requires that the mobile device “***process the sensor data from the sensor set during the driving period to derive driving information associated with how the vehicle is driven***.” *See, e.g., id.*, 31:59-61 (emphasis added).

The mobile device then processes sensor data from its sensor set, from the start of the period in which the vehicle is being driven and during that entire driving period, to derive driving information associated with how the vehicle is driven and to store this derived driving information. *Id.*, 19:17-22; 20:23-29; AT-

2001, ¶¶50-52. Driving information is distinct from raw sensor data because it is derived from raw sensor data and is transformed by the phone for further analysis associated with how the vehicle is driven. *See supra* Section II.B. AT-2001, ¶56.

B. The Specification Supports Patentability

The claims must be read in light of the specification. *Phillips v. AHW Corp.*, 415 F.3d at 1316, *citing* *Netword, LLC v. Centraal Corp.*, 242 F.3d 1347, 1352 (Fed. Cir. 2001) (“The claims are directed to the invention that is described in the specification; they do not have meaning removed from the context from which they arose.”). “[T]he interpretation [of a claim] can only be determined and confirmed with a full understanding of what the inventors actually invented and intended to envelop with the claim.” *Phillips*, 415 F.3d at 1316.

According to the specification, at the time of the invention, automotive black boxes integrated with vehicle sensors were prohibitively expensive and difficult to install. USAA-1001, 1:49-58. The inventor realized that use of a mobile device for automotive black box functionality would provide a convenient and inexpensive alternative. *Id.*, 2:15-26; 33-52.

“A main purpose of the mobile telecommunications device, when arranged within a vehicle in motion,...is to monitor and process sensor data captured by the mobile device, to derive driving information associated with the moving automobile....[T]his driving information is subsequently used by the mobile device

to determine if a driving incident or event has occurred. [T]he sensor data and/or the driving information may be used to determine for example, if the driver is [cautious or reckless].” *Id.*, 13:26-55. The invention provides cost-effective black box functionality for efficiently capturing significant driving events while also providing accessible data for driver assessment and insurance rate setting. AT-2001, ¶¶57-58.

“[T]he use of such a generic mobile device in this context may be counter-intuitive to a person skilled in the art—such generic devices are not designed to withstand events such as catastrophic crashes. Furthermore, such generic devices are usually not necessarily configured to appropriately detect conditions that may need to be recorded.” USAA-1001, 2:57-65. Thus, the invention was ahead of its time. AT-2001, ¶59.

The inventor recognized additional concerns regarding using a mobile device for black box functionality. For example, recognizing memory limitations of mobile devices, the inventor understood the need to “register[] the start of a driving period during which the [mobile device]...is being driven” which “minimis(es) the unnecessary usage of memory.” USAA-1001, 3:25-31. Further, the inventor understood the need to make utilization of the “finite storage capacity” on the mobile device more efficient. *Id.* To that end, the mobile telecommunications device “store[s] only selected driving information

for...logging how the vehicle is driven during a driving period.” *Id.*, 4:50-59. AT-2001, ¶62.

The specification defines “sensor data *and* driving information” as two distinct things. *See, e.g.*, USAA-1001, 20:19-29. “Driving information” is defined as “any data which may be derived from raw sensor data” *Id.*, 16:51-56. The specification provides various examples of derived driving information. *See supra* Section II.B. The specification also refers to “sensor data *and* driving information” separately. *See, e.g., id.* 16:62-64; 19:25-28; AT-2001, ¶¶60-64.

The mobile telecommunications device’s processor provides a large suite of black box processing features, with additional features enabled by the technology of the mobile device. *See, e.g.*, USAA-1001, FIG. 3; the processor executes downloaded application (13:57-63); forwards driving incident data to insurance server and/or emergency services (13:64—14:42); determines start of driving period (18:63-19:10); continuously analyzes sensor data (17:53-55, 19:17-22); determines driving incident has occurred (16:62-65, 19:23-25, 19:29-64); performs benchmarking (23:18-40); pairs mobile device with driver and/or vehicle (10:21-26); monitors driving performance and generates user profile (13:46-49); generates driving score (10:27-30); and displays/plays data/video feedback (10:42-49). AT-2001, ¶66.

Like a black box, the mobile device includes an event detector for detecting occurrence of a “predetermined event of significance.” USAA-1001, 5:12-38. The specification defines this event as a serious accident or impact “corresponding to both the deceleration...and the orientation of the vehicle.” *Id.*, 5:39—6:2. However, the specification does not define, nor did the inventor intend, the predetermined event of significance to be a phone call, with phone call handling being a separate function from detecting predetermined events of significance. *See id.*, 3:37—4:49; AT-2001, ¶¶69-70.

The mobile device can take a predetermined action in response to a predetermined event. USAA-1001, 6:39-44, 32:6-7. Such “predetermined action” can be one or more of, e.g., “transmitting driving information and/or sensor data to a remote system” to alert emergency services (*id.*, 6:44-53; 32:16-18); “storing data captured at a higher...sampling rate than when an event is not detected” to prevent down-sampling and loss of detail or overwriting of event data (*id.*, 7:4-9; 32:12-14); “providing feedback to a user to indicate that an event has been detected,” such that a user can confirm or deny the event (*id.*, 7:10-16; 32:20-25), and “transferring data from...short term memory to long term memory” to prevent important event data from being overwritten (*id.*, 8:12-17; 32:57-59).

Additionally, understanding the mobility of a mobile device and the differences in users, the inventor realized the opportunity to use the mobile device

to associate driving behavior with a “driver-vehicle pair” to “ensure[] that different drivers and vehicles do not disrupt the accurate event detecting capabilities of the event detector.” *Id.*, 6:30-38. This is useful because the mobile device is not integrated to a specific vehicle like a black box, so accounting for variations in users, user devices, and the use and handling of such devices provides for more reliable data collection. *See id.*, 10:21-26. Such functionality also allows the mobile device to evaluate each driver individually and generate a user profile (*id.*, 13:46-51) and driving score (*id.*, 10:27-30) associated with the user of the mobile device. AT-2001, ¶72.

C. Prosecution History Supports Patentability Then and Now

“In addition to consulting the specification,...a court ‘should also consider the patent’s prosecution history, if it is in evidence.” *Phillips*, 415 F.3d at 1317. In a Notice of Allowance regarding a related patent (US Pat. No. 9,633,487; “the ’487 patent”), all claims were allowed after resolution of one non-final office action in which claim 1 of the ’487 patent was rejected under §102(b) over Plante, which prosecution history Petitioner brought into evidence in a related proceeding, IPR2023-00518. *See* AT-2007, 8-15. Because the subject matter that was under examination of the ’487 patent is the same subject matter as the instant ’879 patent, this prosecution history is relevant and probative here.

The claims of the '487 patent were found allowable over the art for similar reasons that the claims remain allowable here. Specifically, Plante was not found to show or suggest a mobile device configured to “determine, based on 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,...and wherein the driving information is derived without data from vehicle sensors, and the mobile telecommunications device is controlled by a downloaded application to [control the] mobile device to detect occurrence of a predetermined event and in response take at least one predetermined action.” *Id.*

Prosecution of the claims found that “there is no driving information derived from sensor data by Plante on the mobile device itself” because “all that Plante does is to record data from the sensors. This is not processed driving information that is derived from sensor data...” *Id.*, 34. Thus, Plante was found to not disclose the device “being configured to process the sensor data during the driving period to derive driving information associated with how the vehicle is driven[,] because “as there is no processing of data on the data recorder, there can be no determination of this driving information.” *Id.*, 32-33 (emphasis in original). Rather, like Curry, Plante “transfer[s] recorded data to a server for processing ...” *Id.*, 33.

D. As in Plante, Disclosure of Driving Information Logging and Processing is Lacking in References Relied Upon by Petitioner

1. Curry *et al.* – Exhibit USAA-1005²

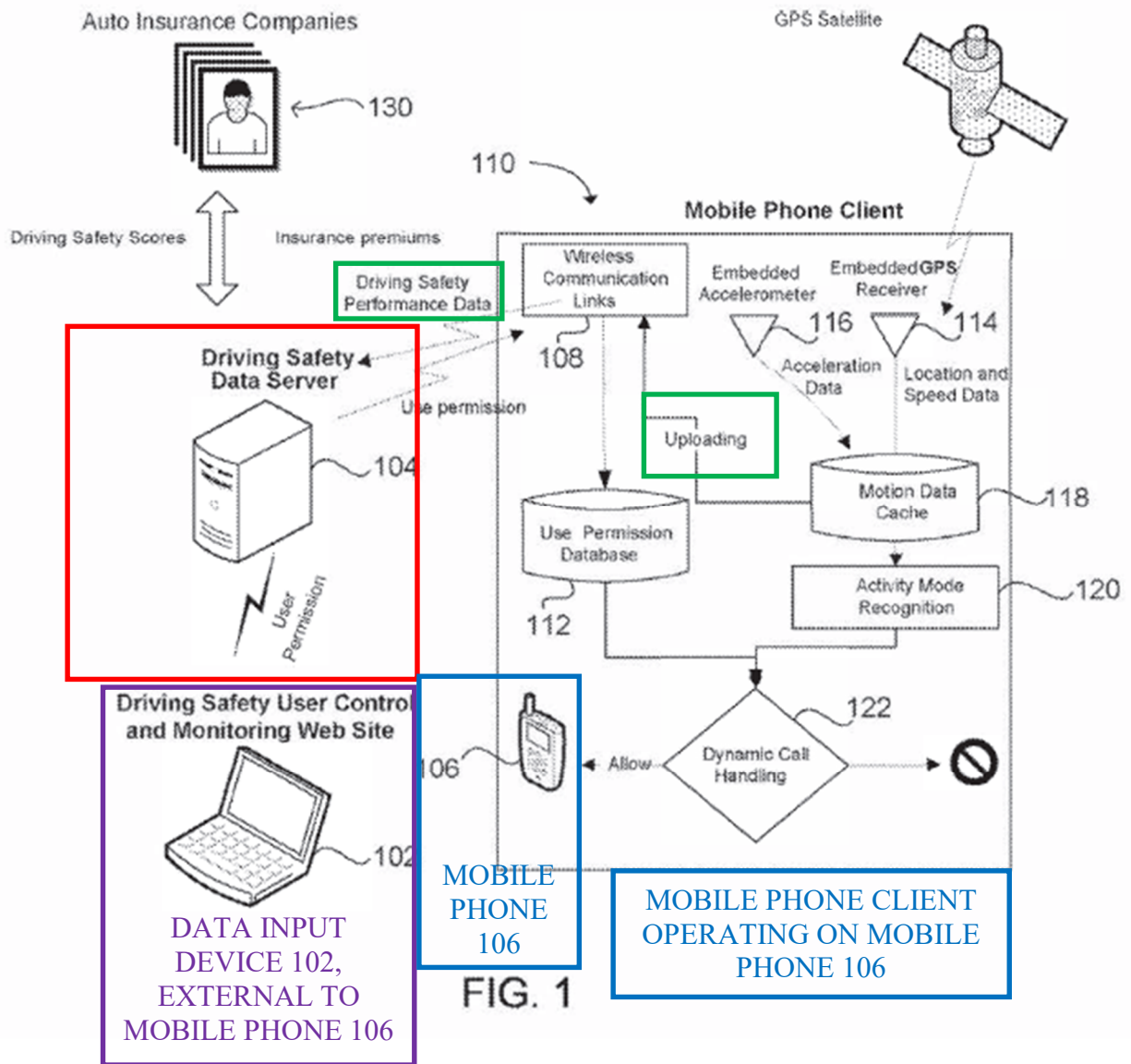
Curry discloses “[a] system and method for preventing cell phone use while driving.” USAA-1005, Title. In this regard, “[a] computing device [other than the mobile device] in communication with [a] data server [is provided that] can be used to select timing and location information in which use of the [mobile] device is permitted or restricted.” *Id.*, 3:16-18; FIG. 1.

As illustrated in FIG. 1 below, while Curry’s mobile phone client 110 can determine from raw sensor data of accelerometer 116 and GPS receiver 114 that a user is driving at a moment in time, use permission data (from remote data input device 102, purple) is required to be provided by a remote, centrally-managed server 104 (red) to permit or restrict use of the mobile phone 106 (blue) for calling or texting. *Id.*, 8:30—9:20; FIG. 1. Using this externally provided information, Curry’s mobile phone 106 performs “dynamic call handling” based on estimated activity mode (e.g., standing, walking, or driving) at the time of the call. *Id.*, 4:16-24; FIG. 1.

Further, raw sensor data 114, 116 from the motion data cache 118 is uploaded (green) in raw form as “driving safety performance data” to the remote

² See also Wilson Declaration, AT-2001, ¶¶74-88.

server 104 (red) for post-processing, evaluation, statistical analysis, and scoring. *Id.*, 7:8-10; 11:15-18. *See also id.*, FIG. 2 (208, 212, 218); 13:1-2; FIG. 3 (324); 14:19-21. Other than sending raw motion data to the server, Curry's mobile phone uses the raw data only to estimate context (e.g., standing, walking, driving) of the mobile phone using pre-set permissions from the server. *Id.*, 9:1-3, 5-11, 31-33. Curry's mobile phone does not perform further processing, evaluation, statistical analysis, or scoring, especially as concerns how the vehicle is driven or for detecting a driving incident. Importantly, a phone call is not a driving incident, as previously discussed. *See supra* Section IV.B. AT-2001, ¶¶75-76.



USAA-1005, FIG. 1.

Curry's FIG. 2 and its specification make clear that any processing, evaluation, statistical analysis, or scoring is performed at Curry's remote, centrally-managed server (red). *Id.*, FIG. 2 (below); 3:24—4:6 (server uses model to determine abnormal driving); 7:8-17 (driving safety evaluation module on server

performs statistical analysis); 8:5-18 (server uses its interface to collect use permission data); 9:23—10:5 (raw motion data and activity mode estimation sent to server for safety score evaluation); 11:3-18 (server post-processes using previously collected motion data); 13:1-19 (server calculating safety score); 14:17-26 (“driving safety information” defined as collected data from motion data cache and activity mode recognition module, which is sent to server); 16:7-22 (unsafe driving is determined and penalized by server). AT-2001, ¶77.

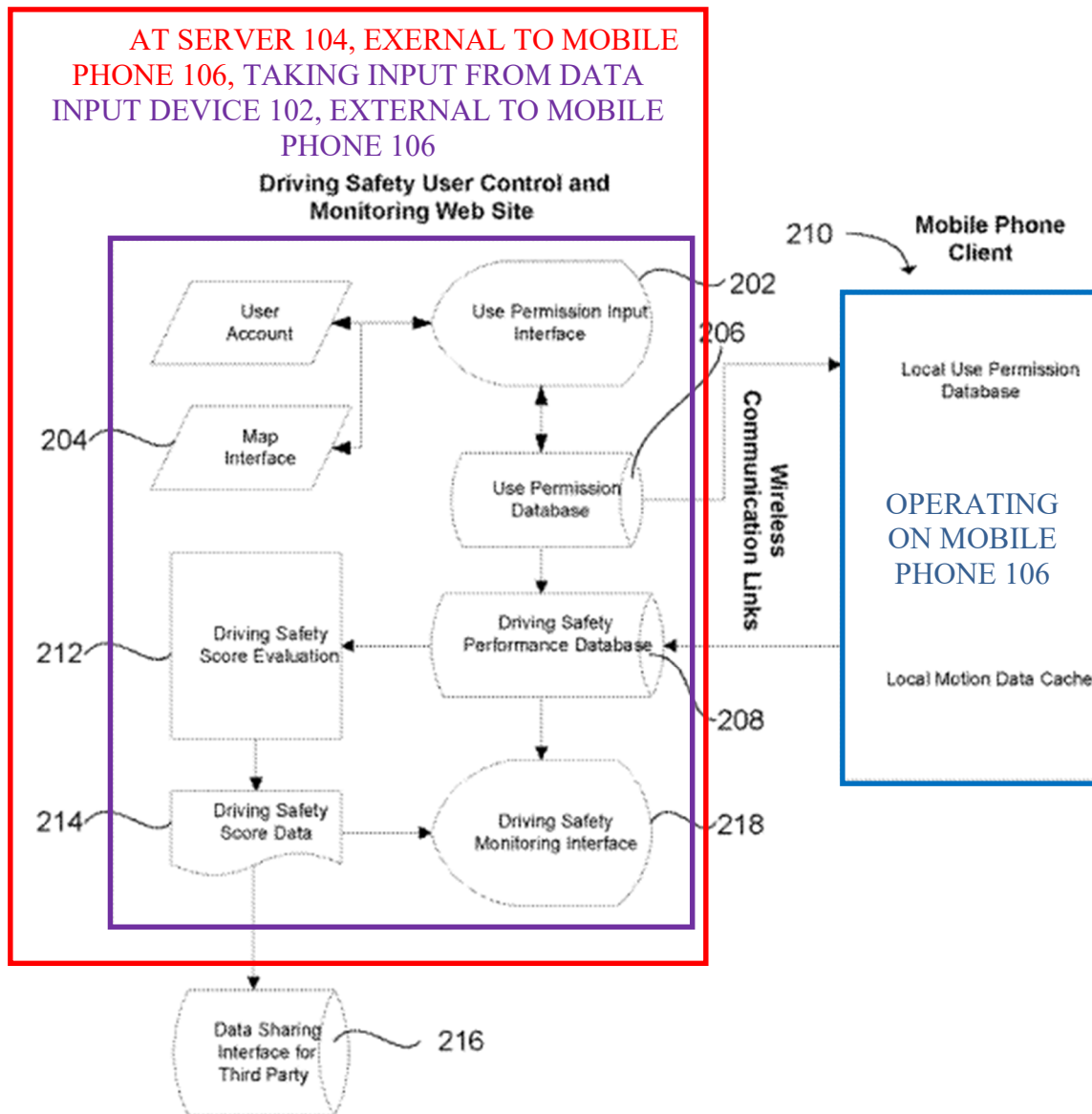


FIG. 2

USAA-1005, FIG. 2.

Curry's mobile phone, handling only raw motion data from accelerometer and GPS sensors and pre-set user permission data from an external server, and determining only an estimate of whether (not how) a vehicle is driving, thus does

not disclose, teach, or suggest a mobile device (1) determining the start of a driving period, (2) processing sensor data from a sensor set to derive driving information associated with how the vehicle is driven throughout that driving period, or (3) storing a selection of such driving information. AT-2001, ¶79.

Rather, Curry discloses a system and method that collect speed and location information at a time at which, and for a period after which, the user's mobile device has been triggered to detect such data after a phone call (or text) is initiated or received. *See* USAA-1005, FIG. 4 (below). Specifically, “[w]hen a call is made or received using a mobile phone, the mobile phone can record location, speed, and acceleration data from sensors embedded in the wireless device,” *Id.*, 8:30-32, and then store that raw data “for an extended time period...to provide sufficient information for a user activity mode recognition program,” *id.*, 9:1-3, which “estimates the context of mobile phone use...[and] can be used to determine if the use of a mobile phone...violates the pre-set permission policies.” *Id.*, 9:6-11; AT-2001, ¶80.

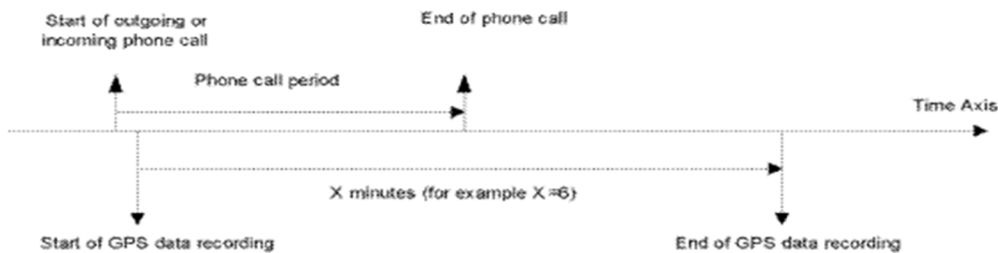


FIG. 4

USAA-1005, FIG. 4.

Curry's server (not phone) may use such information to assist in scoring a driver and determining use permission policies. *See, e.g., id.*, 13:1-19. Thus, when Curry's user activity mode recognition program later determines that the user is driving during a call, a call handling program may then control (*e.g.*, limit or prohibit) phone operation using these scores and policies. *Id.*, 8:4-27, 9:5-20. AT-2001, ¶81.

Because Curry addresses the problem and dangers associated with distracted driving caused by mobile device usage, it need not (and does not) disclose monitoring how a vehicle is being driven during a driving period. Curry does not disclose any data collection unrelated to the phone call, and specifically does not disclose any time period for data collection, other than a period starting with a phone call. *See* USAA-1005, FIG. 4. Rather than tracking a user's driving information from the start of and throughout a driving period, the Curry system triggers all motion data collection upon the initiation or receipt of a call (or text) at the mobile device. *See id.* Curry's mobile device merely stores raw sensor data and estimates an activity mode of mobile phone use, *e.g.*, simply whether a phone associated with a user is driving, walking, or standing still (not *how* a vehicle is driving), and whether a user is permitted to operate the mobile phone in that context. *Id.*, 9:1-11; AT-2001, ¶¶83-85.

As applied to the '879 patent, Curry suffers from similar shortcomings as were found for Plante in prosecution of the '487 patent: (1) Curry's mobile device does not determine a start of a driving period, or a driving period, as required by the claims; (2) Curry's mobile device only records raw sensor data, and does not process sensor data to derive driving information; (3) any analysis that Curry's mobile device performs regards phone call handling that depends only on *whether* (not how) a vehicle is driving, as estimated from raw sensor data, and a preset permission, both untethered from driving information; (4) Curry's mobile device does not detect a predetermined event nor provide feedback to the driver regarding the predetermined event; and (5) the phone call of Curry is not a predetermined event as required by the claims. AT-2001, ¶80.

2. Rabu – Exhibit USAA-1013³

Rabu provides a method for determining an orientation angle and movement of a portable media device ("PMD") and determines differing "modes of operation" of that device based on a frequency spectrum associated with the device's motion. USAA-1013, Abstract, 2:61-3:4. However, Rabu fails to disclose, teach, or suggest the determination of the start of a driving period, the processing at the PMD of sensor data to derive driving information associated with how the

³ See also Wilson's Declaration, AT-2001 at ¶¶89-103.

vehicle is driven, or storing a selection of such driving information into memory on the PMD, as required by the claims. Rabu describes determining a “holder status” that indicates “whether the PMD is docked, resting on a surface, or being held,” *id.*, 1:60-62, and determining a “holder motion status” that includes “determining whether the PMD is in a moving vehicle, in a stationary vehicle, being held by a moving person, or being held by a stationary person.” *Id.*, 1:62-65; AT-2001, ¶¶89-90.

Rabu determines holder status by measuring orientation angle of the PMD in a holder. USAA-1013 at 5:5-9. Once the measured orientation angle indicates a docked position, Rabu determines a frequency spectrum associated with the holder motion, (*id.*, 4:29-33), and thereafter determines a “mode of operation” for the PMD based on that motion status. *Id.*, 5:53-55; FIG. 5. In contrast, Rabu relies on frequency analysis to determine small movements of a PMD for distinguishing its mode of operation. *Id.*, 2:65-3:1; *compare* USAA-1001, 16:15-24. While Rabu is concerned with “the difference between the first location and the second location [being] more than a threshold” to determine movement differences between a moving vehicle or walking person (USAA-1013, 4:52-58), Rabu is not concerned with initializing a driving period based on these differences and does not identify the driving period for processing sensor data. Rabu goes no further than attempting

to identify that a vehicle is moving at a time that a PMD is docked. AT-2001, ¶¶91-92.

Rabu's PMD does not process raw sensor data to derive driving information as required by the claims. Rabu is also not concerned with distinguishing and logging driving information within a specific driving period, nor does Rabu cure Curry's shortcomings regarding claim features for logging such driving information. Specifically, even though Rabu purportedly discloses identifying modes by determining a type of motion based on frequency (USAA-1013, 3:1-4), Rabu does not disclose how to determine the start of a driving mode or how a vehicle is being driven. AT-2001, ¶93.

Rabu merely takes snapshots of frequency spectra and compares them to limited stored frequency spectra. Using only snapshots in time, Rabu cannot, and does not, disclose determining a start to a mode, such as when a holder starts driving. Rabu's "modes" simply identify whether a PMD is in a vehicle and whether the vehicle is moving. *See id.*, 5:53—6:17. Nor does Rabu associate any of Rabu's driving modes with "how the vehicle is being driven." AT-2001, ¶¶97-98.

Further, Rabu lacks reliability in determining holder status and motion status and, thus, has difficulties in determining its modes. This is because Rabu's determination of both holder status and motion status is based only on a

comparison to stored data at a particular time. *See, e.g.*, USAA-1013, 8:27-37; 9:14-24; 9:35—10:7.

Rabu's determinations of mode based on holder and motion status are also unreliable and inconsistent. For example, even before determining holder motion status, Rabu's system may not be able to determine holder status, thus placing Rabu's PMD in a default mode. USAA-1013, 8:66-67. Further, in determining holder motion status, it is "unlikely that two frequency spectra will be an exact match." *Id.*, 10:14-18. GPS may be used instead to determine holder motion status, but such an option only determines "whether [the holder] is *more likely* in a moving car or being carried by a walking person." *Id.*, 10:35-42 (emphasis added). AT-2001, ¶100.

Further, the determination of Rabu's snapshot of holder motion status is unreliable for determining a particular motion, at least because there is no way that Rabu's storage can store enough frequency spectra to match the spectra of different PMDs, drivers, vehicles, roadways etc. so that each distinct activity experienced by a PMD holder would have a distinct frequency spectrum for comparison. Thus, the overall accuracy of correctly determining motion status would be very limited for different mobile devices, drivers, vehicles, roadways etc., and the expectation of success in combining Rabu with Curry for improved mode determination would

have been low for a POSITA attempting to implement the features of the '879 claims. *Id.*, ¶¶101-102.

V. GROUND 1A: THE CITED CLAIMS ARE PATENTABLE OVER THE COMBINATION OF CURRY AND RABU

Under Ground 1A, Petitioner contends that Claim 1 is unpatentable as obvious over the combination of Curry and Rabu. Pet. 6. 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 to a POSITA at the time the application was filed. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). A determination of obviousness cannot be based on “mere conclusory statements.” *In re Magnum Oil Tools Int'l, Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016). “[I]nstead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness” based on a combination of references. *See In re Nuvasive, Inc.*, 842 F.3d 1376, 1382 (Fed. Cir. 2016); *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006). The requirement of a reason to combine cited references is a safeguard against hindsight bias, which is characterized by the “temptation to read into the prior art the teachings of the invention in issue.” *KSR*, 550 U.S. at 421 (quoting *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 36 (1966)).

“In an [IPR], the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.” *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. § 312(a)(3) requiring IPR petitions to identify “with particularity...the evidence that supports the grounds for the challenge to each claim”)). Additionally, 37 C.F.R. §42.104(b)(4) requires that the Petition “specify where each element of the claim is found in the prior art....” This burden of persuasion never shifts to Patent Owner. *See Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015). As shown below, Petitioner has not met this burden.

A. Claim 1 is Patentable Over the Combination of Curry and Rabu Because the References, Alone or In Combination, Does/Do Not Teach, Suggest, or Render Obvious All Elements

[1.1]⁴ A mobile telecommunications device configured to log driving information associated with a vehicle,

Curry and Rabu, alone or in combination, does/do not teach, suggest, or render obvious all of the elements of claim element [1.1]. Petitioner cites to a “mobile telecommunications device configured to log driving information associated with a vehicle” in several locations of Curry’s specification, but none of the citations discuss logging driving information as required by the claims. *See* Pet.

⁴ Patent Owner adopts the same numbering convention for each particular element of the contested claims as Petitioner for the convenience of the Board.

17-19. “Driving information” as required by the claim, and as discussed above, includes “location, speed, and acceleration of the vehicle *associated with how the vehicle is driven*” as well as other information derived from the sensor data (e.g., variation in velocity, speed of impact, pitch, yaw, roll, G-force, bearing/heading, and time elapsed). *See supra* Section II.B. This driving information may include detected driving events, including driving anomalies, and captured images and audio of the detected driving events. *Id.*; *see also* USAA-1001, 17:27—18:4. AT-2001, ¶108.

The claimed driving information includes comprehensive data regarding how the vehicle is being driven that neither Curry nor Rabu disclose. Based on a plain reading of the specification and claims, a POSITA would have understood that the ’879 patent discloses its mobile telecommunications device logging such driving information but the Curry-Rabu phone not logging such driving information. AT-2001, ¶109. In the ’879 patent, such driving information may be utilized for emergency services or in the same way data from a vehicle’s black box would be utilized, which use encompasses data more comprehensive than mere raw sensor data from GPS and accelerometer sensors to fulfill the role of a black box. *See, e.g.*, USAA-1001, 2:21-25, 2:65—3:2, 5:12-21, 8:18—9:38, 13:36-49, 15:54—16:33, 16:48-61, 19:17-28. AT-2001, ¶111.

Further, a POSITA would have recognized, based on a plain reading of the claims and the specification in support of the claims, that the mobile device must be able to log derived driving information, including detecting events, by processing sensor data from the mobile device, without the need for sensor data from the vehicle's sensors or post-processing by an external service. *See* USAA-1001, 13:36-46, 31:64-65. AT-2001, ¶112.

Petitioner's citations do not demonstrate this same functionality. For example, Petitioner states that "Curry further describes a client application 110 that can be downloaded 'from server 104 to the mobile phone 106,' and that enables a phone to determine...whether a vehicle...is being driven." Pet. 18-19 (emphasis added). Yet, "whether a vehicle...is being driven" is not "*how* a vehicle is being driven," which is the basis of the derived "driving information" of the claim. *See, e.g.,* USAA-1001, 31:59-61. AT-2001, ¶113.

Further, Petitioner cites to Curry to erroneously purport that "Client 110 additionally enables the phone to process 'raw data' from a driving period to derive information associated with a user's driving behavior." Pet. 19. *See* AT-2001, ¶113. In support, Petitioner cites to a wide swath of information in Curry (corrected to USAA-1005, 7:5—8:2, 8:29—10:26, 13:27-33) but never points out what portion of this disclosure indicates that Curry's phone "derives information associated with a user's driving behavior." *See* Pet. 19. These cited portions of

Curry relate only to collecting raw data to determine “user activity mode recognition,” that is, the “context of mobile phone use,” e.g., whether a phone is being used “while driving, walking or remaining still” at the time of a phone call, while Curry depends on a central server for statistical analysis and calculating safety scores, not the phone. USAA-1005, 7:5-15, 7:31-32, 8:29—10:26; 13:27-33; *see also id.*, 11:15-18. *See* AT-2001, ¶114.

Petitioner further mis-cites claim element 1.1 as “log[ging] driving *activity* associated with a vehicle” (Pet. 19), apparently to inaccurately mold Curry’s “*activity* mode recognition” to the claim. Petitioner further purports that Curry discloses “us[ing] the derived information to generate a ‘driving safety score’ for the user,” notwithstanding a driving score not being part of claim element 1.1. *Id.* But it is clear that Curry’s phone does not “use the derived information to generate a ‘driving safety score.’” First, Curry does not disclose its phone “deriv[ing] driving information” as intended by the ’271 patent’s specification. AT-2001, ¶115. Second, Curry’s phone, at best, “store[s] raw data...for a user activity mode recognition program,” while Curry’s “driving safety data server 104” (off the phone; see USAA-1005, FIG. 1) displays data “through an interactive user control website” (off the phone; see *id.* at FIG. 1, element 102) “to enable visualization of possible violations of mobile phone use or unsafe driving behavior...” *Id.*, 9:23-28. AT-2001, ¶116.

Third, even if “speeding, abnormal acceleration and sharp turns” can be said to be “driving information,” this determination is clearly done off of Curry’s phone. *See* USAA-1005, FIGs. 1, 2. *See* AT-2001, ¶116. Fourth, Curry has no disclosure of its phone calculating a driving score. *See* USAA-1005, 7:13-15, 9:31-33, 13:1-19, 16:13-18, FIGs. 1, 2. AT-2001, ¶116.

Further, no driving information is determined by Curry’s phone (*see* USAA-1005, FIG. 1, “Uploading” raw data from “Motion Data Cache 118” and transmitting raw data as “Driving Safety Performance Data” to Driving Safety Data Server 104;” *see also id.*, FIG. 2); rather, it is Curry’s server that actually determines driving information. *See* USAA-1005, FIG. 2, 13:1-19. AT-2001, ¶118. Even further, Curry’s description of its FIG. 3 does not help Petitioner’s argument, as it discloses a collection of raw sensor data merely for “estimat[ing] the type of activity” (USAA-1005, 13:27-33) “to allow or disallow users to receive or make a call, text a message, ...or use other components...on...a mobile phone” (*id.*, 14:5-8). *See* AT-2001, ¶118.

While Petitioner purports that Curry’s mobile phone calculates a score (Pet. 19), Curry never discloses such, but makes clear that Curry’s server does all post-processing related to scoring. *See* USAA-1005, 9:23-28; 11:7-10; 12:19—13:19; 14:17-23; FIG. 2. AT-2001, ¶120. “The risky behaviors of talking while driving or texting while driving may not be identified in real-time due to limited data, but the

post-processing technique can deliver high-confidence estimation results. *Id.*, 16:13-18.

[1.3] a user interface;

Claim element [1.3] requires “a user interface” of the mobile phone. USAA-1001, 31:45, 54-55. Petitioner, however, repeatedly cites to the user interface of Curry’s server, not Curry’s phone. For example, Petitioner cites to Curry at 8:5-18, which references a “graphical user interface” of “data input device 102,” which is external to Curry’s phone on the remote server 104. Pet. 20-21. *See* USAA-1005, FIG. 1. Further, Petitioner cites to Curry at 21:23-25, which again refers to the “graphical user interface” of the server. Pet. 20. USAA-1005, 9:23-28; 10:2-5. The user interface of the server does not satisfy claim element [1.3]. AT-2001, ¶122.

[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;

Curry and Rabu, alone or in combination, does/do not teach, suggest, or render obvious all of the elements of claim element [1.6]. At no point does Curry disclose or suggest the determination of “a start of driving period.” Rather, as Petitioner concedes, Curry merely describes two modes: (i) a communication mode that allows for normal phone usage, and (ii) a monitoring mode that restricts

calling, texting, and or software use on the phone to promote driving safety. Pet. 12. The sole input on which Curry relies to meet [1.6] is the receipt (or attempted placement) of a phone call or text message that initiates GPS data recording, as seen in Curry's FIG. 4. AT-2001, ¶¶123-124.

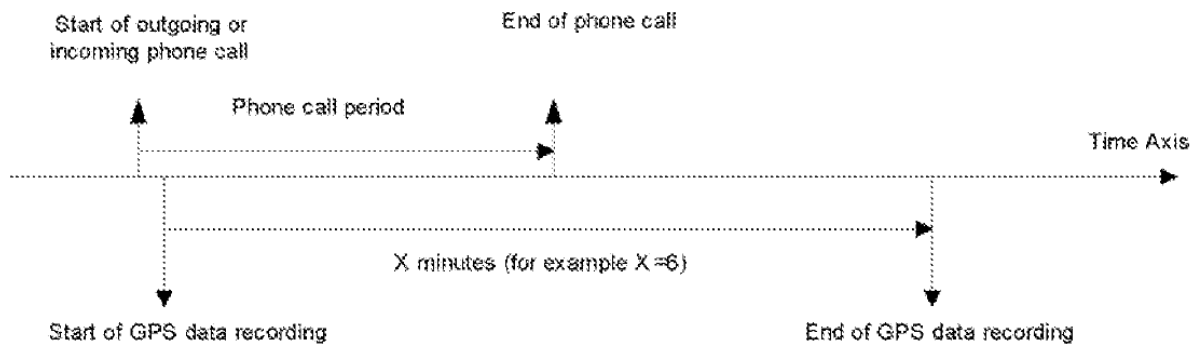


FIG. 4

USAA-1005, FIG. 4.

As seen in FIG. 4, when the vehicle is being driven, the start of an outgoing or incoming phone call starts the recording of raw data from the mobile device's sensors, which raw data is recorded for some pre-set ("X minutes") duration. *Id.* at 16:7-13. Based on this raw data, Curry's phone may estimate its activity status as "driving, walking, remaining still, or unknown..." *Id.*, 10:16-26; *see also id.*, 16:13-22. "If the status of the mobile phone user is recognized as driving, the mobile phone can automatically switch to the GPS navigation mode to prevent the use of communication capabilities...[while] if the mobile phone user is recognized as not driving, the mobile phone can [operate in] communication mode." *Id.*,

10:21-26. If Curry's activity status cannot be sufficiently estimated due to insufficient data or a change in activity, Curry turns to its remote server to post-process data for higher confidence in the estimation results. *Id.*, 16:13-22. AT-2001, ¶124.

Importantly, because the data recording period is initiated by the start of an outgoing or incoming phone call (or text message), Curry does not determine the "start of a driving period," because the triggering event (the phone call or text) does not occur at the start of the period in which the vehicle is being driven. *See, e.g.*, USAA-1001, 2:9-11 (defining the driving period as the period in which the vehicle is being driven by a driver); 3:19-21 (same). Instead, Curry, at most, discloses a call handling program that is limited to handling a call/text at the time it is received or made to "detect and prevent...talking on or texting with mobile phones while driving." USAA-1005, 7:5-8. It is clear that the sole role of the recording is to collect data for later processing to analyze driver safety at the remote server, not the phone. AT-2001, ¶124. Curry merely discloses the start of a recording period, which is not the entire period in which the vehicle is being driven as required by the claims. USAA-1005, 11:3-7; 16:8-12; FIG. 2. *See* AT-2001, ¶¶124-126.

Further, because Curry's recording period is a finite time period with no association to a driving period (*see, e.g.*, USAA-1005, 16:10-13 and FIG. 4, each

defining the recording period beginning with the phone call or text message as a finite period of time, *e.g.*, 6 minutes), Curry does not disclose the recording of sensor data during the entirety of the driving period.⁵ Instead, Curry simply records raw sensor data for some arbitrary period of time that is untethered to the claimed driving period. *Id.*, 16:7-13. As such, not only does Curry not determine the start of a driving period, Curry discloses no way to determine the entirety of the driving period. AT-2001, ¶128.

Combining Curry with Rabu fails to resolve these deficiencies. As noted above, Rabu has nothing to do with the determination of the start of a driving period. Rather, Rabu determines a holder status and a holder motion status for a mobile device, using the device's orientation angle and frequency spectrum, and from those statuses, the mode the device may be in (*e.g.*, standing still, walking, or driving). USAA-1013, 7:31-60; FIG. 5. Rabu's unreliable methodology of relying on a device's frequency spectrum to determine whether the device is located in a

⁵ A "period" by plain definition of being "a length or portion of time" has a beginning and an end. As the driving period claimed by the '879 patent necessarily includes only the period in which the vehicle is being driven, the end of that driving period must also necessarily be determined. *See, e.g.*, USAA-1001, 20:23-51; FIG. 4a. AT-2001, ¶129.

moving vehicle does not determine when a driving period began; instead, it simply determines whether the device is held in a moving vehicle at a particular moment in time. *See, e.g., id.*, FIGs. 8, 9. As such, Rabu fails to address the deficiencies in Curry. AT-2001, ¶130.

[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;

Curry and Rabu, alone or in combination, does/do not teach, suggest, or render obvious all of the elements of claim element [1.7]. USAA-1001, 31:59-61. Petitioner attempts to meet this claim element in Curry by focusing on the phone's determination of "whether" a vehicle is being driven (e.g., estimation of the type of activity as "driving"), not *how* the vehicle is being driven. Pet. 18-19. Nowhere does Curry disclose the processing of raw sensor data for the derivation of "driving information," as claimed by the '879 patent, to determine "how" the vehicle is driven (such as "information associated with the behaviour of a vehicle during a crash"). *See, e.g.,* USAA-1001, 5:12-18, 14:3-10, 16:48-61, 19:23-25. AT-2001, ¶131.

Further, as discussed above, Curry does not disclose or suggest that processing according to the claims is performed on the mobile device itself. Curry's processing on its mobile phone merely determines whether to allow a phone call based on a pre-set user permission and an estimated activity mode.

USAA-1005, 3:2-23. AT-2001, ¶¶132-133. Contrary to Petitioner’s expert’s assertion, to the extent that any processing is disclosed in Curry, a remote server processes raw data sent to it by Curry’s mobile phone. *See, e.g.*, USAA-1005, FIG. 1 (showing the uploading of raw data from motion data cache 118 and transmitting raw data as driving safety performance data to driving safety data server 104); FIG. 2 (same); 3:24—4:5, 9:22-33 (explaining that the mobile device’s mobile data cache can transmit raw sensor data to a remote data server so that the server can determine a driver safety statistic dependent on certain user behaviors). This claim element clearly requires that the phone process data to derive “driving information,” but, as that is done only on its remote server, Curry does not teach or suggest this element. AT-2001, ¶¶132-133. Combining Curry with Rabu fails to solve these problems.

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

Curry and Rabu, alone or in combination, does/do not teach, suggest, or render obvious all of the elements of claim element [1.8]. USAA-1001, 31:62-63. Petitioner contends that Curry stores information derived from processed sensor data (“selection of driving information”) to memory (e.g., motion data cache 118, local memory) (“memory”) prior to transmission (“e.g., to driving safety data server 104”). Pet. 31 (citing USAA-1003, ¶142). To the extent that Curry stores sensor information, it is solely raw data, not “information derived from processed

sensor data,” and certainly not “driving information” as required by claim element [1.8]. *See* USAA-1005, FIG. 1, 8:30—9:33, 11:15-18. AT-2001, ¶¶136-137.

Moreover, Curry does not disclose storage of a *selection* of driving information to the memory of the mobile device. Rather, Curry’s phone stores *all* of its recorded sensor data. AT-2001, ¶¶139-140. As Curry points out, “[d]ata from the motion data cache 304 and the activity mode recognition module 306 can be transmitted to a local driving safety performance database 324. The collected driving safety information [i.e., here, only raw data] can be sent back to the server 322 through mobile communication links 320.” USAA-1005, 14:19-23. Curry describes this as post-processing by the remote server, not by the mobile device, so Curry’s phone must transmit *all* sensor data, not just a selection, for this post-processing. *Id.*, 7:8-10, 8:30—9:1, 9:23-33, 11:15-18, 13:1-5, 14:19-26, 16:7-18, 17:32—18:3. AT-2001, ¶140.

While Petitioner argues that “the plain meaning of a ‘selection of the driving information’ is not limited to a selection of a subset of the same, but instead is broad enough to encompass selection of some or all of that information” (Pet. 31-32), Petitioner fails to read the claims in light of the specification as required. *Phillips*, 415 F.3d at 1315 (“[C]laims ‘must be read in view of the specification....’”). The ’879 specification clearly explains why determining and storing a selection of the driving information by the mobile device is important and

describes how a selection of driving information is selected for storage and subsequent transmission to third parties. USAA-1001, 13:64—14:14, 16:66—17:26, 17:53—18:10, 18:26-32, 12:23-29. Curry discloses no similar functionality. AT-2001, ¶141.

Although Petitioner argues that “it would have been obvious to store in the Curry-Rabu phone a subset of (i.e., selection of) the recorded sensor data” (Pet. 32), Petitioner continues to mischaracterize the features of Curry’s phone. Petitioner alleges “Curry explains that ‘motion data cache can be compared with the user permission data to enable a driver safety statistic to be calculated,’ indicating that specific aspects of recorded sensor data are more useful for storage and transmission to safety data server 104 (e.g., motion data and related derived information indicating possible use violations, and/or unsafe driving behaviors).” *Id.* However, all data in the motion data cache is needed to compare with the user permission data, because Curry’s phone considers *all* raw sensor data in the motion data cache at the time of a phone call to “precisely” determine activity mode (*see* USAA-1005, 13:27—14:4, 17:1-14, FIGs. 3, 5), then to compare that “activity mode...recognized in real-time” to the user permission to determine whether to block a call (*see id.*, 14:5-16, FIG. 3), and further for the server to perform post-processing on the collection of data, including the activity mode data (*see id.*, 14:19-26). AT-2001, ¶142.

A POSITA would have understood that Curry's phone would not store only a selection of raw sensor data during a recording when Curry's phone needs to know exactly what the vehicle is doing at the time of a phone call. AT-2001, ¶143. If only a selection was stored in motion data cache, Curry's phone could miss a change in activity mode for effective dynamic call handling by the phone, and only portions of sensor data from the phone sent to the server could result in miscalculation of the driving safety score by the server. As concerns post-processing by Curry's server, Curry depends on its server to "deliver high-confidence estimation results." *See id.*, 16:13-22. AT-2001, ¶144. Curry's time-stamping of motion data allows further processing by Curry's server at later times of *all* data separated into intervals delineated by time stamps ("each motion measurement associated with a time stamp"), after *all* of the time-stamped data is sent to Curry's server. *See* Pet. 32-33, compare USAA-1005, 13:29-33. AT-2001, ¶145.

[1.9] wherein the driving information is derived without data from vehicle sensors

Petitioner rehashes many of its previous arguments for claim elements [1.6] ("determine...a start of a driving period") and [1.7] ("process the sensor data...during the driving period to derive driving information") (Pet. 33-34), which Patent Owner opposes for reasons previously provided. *See supra* Section V.A.,

[1.6], [1.7]. While Petitioner asserts that “Curry never once describes or suggests leveraging the vehicle’s sensors,” the statement ignores that “driving information,” if derived at all by Curry, is derived by Curry’s server, not by Curry’s phone. *Id.*, 34. AT-2001, ¶133.

[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.

Curry and Rabu, alone or in combination, does/do not teach, suggest, or render obvious all of the elements of claim element [1.10]. USAA-1001, 31:65—32:2. Petitioner concedes that an assessment of “unsafe driving behavior such as speeding, abnormal deceleration and sharp turns,” used to generate the driving score, is performed by Curry’s server, not by Curry’s phone. *See* Pet. 29 (quoting USAA-1005, 9:22-28). *See also* USAA-1005, 3:24—4:5 (disclosing the activities of the server after data in the motion data cache is transmitted to it); 7:13-17 (disclosing a “driving safety evaluation module” on the server that “perform[s] a statistical analysis on collected raw driving data” and “calculate[s] corresponding safety scores.”); 9:22—10:12 (disclosing “motion data uploading” by the mobile phone for later “safety score evaluation” and “safety evaluation data sharing” by the server); 13:1-19 (disclosing “driving safety score evaluation module 212” on Curry’s server cross-checking safety performance data at 208 and use permission

data at 206 to calculate a driving score); 16:13-18 (disclosing that “unsafe driving behaviors can be penalized after the fact by deducting the driving safety score in the data server, as previously discussed.”). Petitioner’s reliance on Curry at 11:6-14 doesn’t change Curry’s fundamental disclosure that the activity mode recognition module on the phone *only* determines whether the phone is in a moving vehicle or the overall disclosure in Curry that all processing of driving information (including processing related to a driver score) occurs at the remote server. AT-2001, ¶154.

A POSITA would have understood that Curry does not calculate a driving score, based on a plain reading of the claims as a whole, and by comparing them to the Curry specification, on its face. A POSITA would not have found obvious Curry’s mobile phone “process[ing] the driving information [during a driving period] to generate a driving score” because it is simply not disclosed or suggested by Curry alone. Adding Rabu does not cure Curry’s shortcomings, because Rabu is merely cited for its determination of holder status and nuanced driving modes determined by frequency-based motion status, and Rabu does not disclose or suggest a driving score. AT-2001, ¶155.

A close review of Curry’s disclosure with regard to its figures reveals that Curry’s mobile phone (106) is controlled by mobile phone client (110, 210) to record (302) raw sensor data (114, 116, 314, 316) into a motion data cache (118,

304) when a phone call is made (301) or received (303). Curry's mobile phone (106) further is controlled to process the raw sensor data (114, 116, 314, 316) by an activity mode recognition module (120, 306) to determine the context of the phone call, that is, *whether* the phone is walking (516), running (514), driving (506), driving slow in traffic congestion (518), or remaining stationary (508). Curry's phone transmits that activity mode status to a database (no # in FIG. 3; to 208 in FIG. 2) for upload (320) to a remote server (104) along with the raw sensor data (114, 116, 314, 316) from the motion data cache (118, 304) for further processing by the server of driving safety performance database (208). Curry's server processes the driving safety performance data (raw sensor data and activity mode) to calculate a driving score by driving safety score evaluation (212), from which driving safety score data (214) can be shared to third parties (216). *See* USAA-1005, FIGs. 1, 2, 3, 5. AT-2001, ¶157.

Further, use permission data (112, 206, 318) is provided by a remote server as inputs to a dynamic call handling module (122, 308), which determines whether to block (310, 312) or allow (313) a phone call based on the activity mode (120, 306) and use permission (112, 318) (e.g., "I am driving; can I answer a call when I'm driving?"). *See* USAA-1005, FIGs. 1, 2, 3. AT-2001, ¶158.

As has been repeatedly shown, Curry's mobile phone does not perform other processing related to the raw sensor data, which instead is performed by Curry's

remote server upon transmission. *See supra*, Section IV. D.1. AT-2001, ¶158. A POSITA would have had no motivation, suggestion, teaching, or other reason to combine Curry and Rabu to arrive at claim element [1.10] or any other claim of the '879 patent, as further discussed below. AT-2001, ¶159.

B. Petitioner Lacks Sufficient Motivation to Combine Curry and Rabu

1. The Combination Would Provide No Reasonable Expectation of Success

For a proposed combination of references to establish obviousness of a claimed invention, a POSITA must have a reasonable expectation that the combination would be successful, while evidence showing that there is “no reasonable expectation of success may support a conclusion of nonobviousness.” M.P.E.P. §2143.02 (*citing In re Rinehart*, 531 F.2d 1048, 189 USPQ 143 (CCPA (1976))). Here, Petitioner’s proposed combination of Curry and Rabu ignores what any POSITA would have recognized as fundamental flaws in Rabu that would have made its use impracticable, if not impossible, such that a POSITA would have had no reasonable expectation of success in combining Rabu with Curry. Lacking any reasonable expectation of success in making that proposed combination, no claim may be found obvious over that combination. AT-2001, ¶160.

Petitioner states that “[a POSITA]...would have found obvious the integration of Rabu’s dock-status sensing and associated mode-shifting capabilities

into Curry's phone." Pet. 11. However, a POSITA would have recognized that attempting such a combination at the time of the invention would have been time consuming, required significant resources with a fairly low probability of success, and created significant technical hurdles, the solutions to which are nowhere evidenced in either Curry or Rabu. AT-2001, ¶161.

For example, Curry discloses a very specific method for preventing cell phone use while driving, and a POSITA would have understood that the method must be able to provide an accurate assessment of the activity modes of walking, running, driving, and stationary. USAA-1005, 17:1-23. Selecting the wrong activity mode "can result in incorrect disruption of cell phone service which can lead to unpleasant user experiences and further limit system deployment." *Id.*, 10:32-11:2. Thus, a POSITA would have understood that the cost of choosing the incorrect activity mode would be significant, and the more modes one introduced, the more opportunities there would have been for failure. AT-2001, ¶162.

The most problematic issue in the Rabu process is step 802/902/1002 of "compar[ing] determined frequency spectrum to one or more frequency spectra." USAA-1013, 9:35-38, 10:55-58, 11:50-53, FIGs. 8, 9, 10. Rabu states that "[i]n general, different types of motion have different acceleration characteristics, e.g., high frequency vibration of a car, low frequency vibration when handheld. A frequency spectrum for each type of motion can be generated using [these]

acceleration characteristics.” USAA-1013, 7:32-37. While this may be true in theory, Curry’s activity mode selection needs to occur in very specific situations, and there is far too little data provided in Rabu that would have given a POSITA a reasonable expectation that this technique would have worked across the range of conditions typically encountered by a phone being held or in a moving vehicle. AT-2001, ¶163.

In particular, Rabu requires that the “determination [of the activity mode be] made based on determining a frequency spectrum associated with the holder motion and comparing that to frequency spectra of known motions.” USAA-1013, 7:26-28. However, Rabu’s observation of distinct frequency spectra appears to be based on a single sample “measured taking a seat to a passenger” and with the sensor attached “by the belt on a subject’s waist.” *Id.*, 54-60 (citing Ogawa, AT-2002). AT-2001, ¶164.

For a POSITA to have achieved success incorporating Rabu’s teachings into Curry’s system and avoiding “unpleasant user experiences,” the characterization of the “driving spectra” would have been required to be precisely quantified and evaluated across many different factors, including:

- **Location of the Phone** – Whether the phone is attached to a belt, loose in a shirt pocket, on a seat or the vehicle’s dash, or on some sort of mounting device.

- **Mounting Type** – Whether the phone is attached to a stalk that would introduce additional spectral features, sitting on a flat surface (dash, console) that would provide vertical but not horizontal stability, on a car seat, on the steering wheel (introducing rotational motions), in a cup holder, in a mount, or something relatively flexible like an air vent. Each of these mountings would amplify certain frequencies while dissipating others.
- **Vehicle Type** – A luxury car with a large wheelbase has a very different spectrum than a sports car, a small car, or a truck. Tires and wheels are also important, including allowing for winter or summer tires, and the presence of tire chains would also need to be considered.
- **Maintenance Status of Vehicle** – Inadequate, defective or worn shock absorbers or other suspension components will change spectral elements, as will varying tire pressure.
- **Vehicle Load** – Additional weight can modify the motion spectra of a vehicle, while trailers are especially apt to modify motion spectra.

- **Road Surface** – A car on a smooth road will produce a very different spectra from a car on a road with cracks and potholes or a car travelling on a dirt road.

AT-2001, ¶¶164-165.

Each of these characteristics (and ideally all combinations) would have needed to be considered to successfully implement the system of Rabu. This would, at best, have taken a great deal of experimentation and, in the opinion of Mr. Wilson, at least some of these situations would have been very difficult to accommodate, requiring further modifications to Curry. AT-2001, ¶166.

Petitioner has failed to recognize such significant technical challenges presented by Rabu, and particularly the challenges that would have faced a POSITA in attempting the proposed combination. Weighed against this evidence, the proposed combination would have, in fact, suggested to a POSITA a very *low* likelihood of success. As such, Petitioner's summary conclusions of an alleged reasonable expectation of success must be disregarded.

2. Petitioner's Rationale to Combine Curry and Rabu Is Based Entirely on Impermissible Hindsight, Using the '879 Patent as a Roadmap

Petitioner's reasons for combining Curry and Rabu are not supported by sufficient evidence, and Petitioner impermissibly relies on hindsight and piecemeal construction of the claims for its analysis. To avoid hindsight bias, the obviousness

inquiry is not limited to whether the elements of the '879 patent's mobile device were known as disparate puzzle pieces; nor is the inquiry complete with whether a POSITA would have understood Curry in combination with Rabu to teach the '879 patent's logging of vehicle behavior. Rather, Petitioner must provide, *with particularity*, rationale to combine the teachings of the cited art, *i.e.*, “whether the relevant skilled artisan had a motivation to combine pieces of prior art in the way eventually claimed in the patent at issue.” *Intercontinental Great Brands LLC v. Kellogg N. Am.*, 869 F.3d 1336, 1343 (Fed. Cir. 2017).

Petitioner's rationale to combine Curry and Rabu relies on using the '879 patent as a roadmap for reconstructing the claims based on hindsight, despite indications that the combination is fraught with problems. But while Petitioner uses the '879 patent claims as a template to cobble together Curry and Rabu, Petitioner does not suggest motivation to combine Curry and Rabu in the way claimed in the '879 patent, routinely ignoring the invention as a whole, in contradiction of *Phillips*. Petitioner asserts reasons as to why a POSITA would have been motivated to modify Curry that appear to be nothing more than a desire to provide a mobile device that meets the elements claimed in the '879 patent. However, in laying out an obviousness analysis, it is “impermissible to use the claimed invention as an instruction manual or ‘template’ to piece together the

teachings of the prior art so that the claimed invention is rendered obvious.” *In re Fritch*, 972 F.2d 1260, 1266 (Fed. Cir. 1992).

The ’879 patent relies on the availability of continuous sensor data to ensure that data regarding how a vehicle is being driven is captured. *See* USAA-1001, 16:15-20; 16:48—18:32. A POSITA would not have been motivated to look to Curry to arrive at the ’879 patent’s claims because Curry intentionally limits the use of sensor data until a phone call is received or made, rendering the Curry-Rabu combination unable to meet the intention of the ’879 patent to log driving information according to the claims. *See, e.g.*, USAA-1005, 3:2-4:28; 16:7-13; FIG. 4; *see also id.*, 14:28—15:7. AT-2001, ¶168.

Although Petitioner proffers certain explanations for rationale to combine Curry and Rabu, in no case does either reference support such combination with any regard to the aims of each reference or the success of the combination. For example, even if Curry might benefit from the mode determinations of Rabu (*see* Pet. 11-15), Curry is still only directed to preventing phone calls during one mode – driving, and Curry’s phone does not pay much heed to the characteristics of the driving. Curry only cares *that* a phone indicates driving, not *how* a vehicle is driving. AT-2001, ¶146.

Considering the cited art as a whole, and without the benefit of hindsight, a POSITA would never have picked up Rabu in the first place, let alone picked out

sections of Rabu for its teaching of determining a frequency spectrum of a phone, and comparing that frequency spectrum to a database of frequency spectra to determine mode of operation, because it would simply be too unreliable and have little return on investment for a POSITA considering Curry. AT-2001, ¶169.

Further, nothing in Curry suggests that using Rabu's frequency analysis to determine holder status and holder motion status would be better than using GPS and accelerometer data at the time of a phone call. Thus, there is insufficient explanation in the Petition or Dr. Michalson's declaration as to why a POSITA would have combined the teachings of Curry and Rabu in the manner Petitioner proposes. AT-2001, ¶¶170-173.

Even in hindsight, when construing the claims and applying the art, Petitioner does not consider "what the inventors actually invented and intended to envelop with the claim[s]." *See Phillips*, 415 F.3d at 1316. Curry's "preventing cell phone use while driving" cannot be transformed into a phone for black-box-like vehicle data logging merely by adding features for holder status and holder motion status.

C. Claims 2, 3, 5, 6, 8, 11-13, 19-23, 25, 28-31, 39-44, 46-49, 51, 52, and 54 Are Patentable Over the Combination of Curry and Rabu

Claims 2, 3, 5, 6, 8, 11-13, 19-23, 25, 28-31, and 39-44 ultimately depend from one of Claim 1 or Claim 21 and incorporate the same limitations therein.

Thus, at least for the same reasons as are set forth above for Claim 1, which has similar features as Claim 21, Claims 2, 3, 5, 6, 8, 11-13, 19-23, 25, 28-31, 39-44 are patentable over the proposed combination of Curry and Rabu.

Claim 46 is similar to Claim 1, reciting an additional feature “to process the sensor data by determination of at least one of: vehicle acceleration events; and vehicle braking events.” USAA-1001, 36:21-27. As the combination of Curry and Rabu have been shown to not cure the shortcomings of Claim 1, Claim 46 is patentable over the proposed combination of Curry and Rabu at least for the same reasons as set forth for Claim 1. Claim 51 is also patentable over the proposed combination of Curry and Rabu as having substantially similar features as Claim 1.

Claim 54, also having substantially similar features as Claim 1, except reciting the term “affixed” in place of “attached,” is patentable over Curry-Rabu at least for the same reasons as are set forth above for Claim 1.

VI. GROUND 1B: CLAIMS 4 AND 24 ARE PATENTABLE OVER THE COMBINATION OF CURRY, RABU, AND TAMIR

Claims 4 and 24 ultimately depend from one of Claim 1 or Claim 21 and incorporate the same limitations therein. Thus, at least for the same reasons as are set forth above for Claim 1, which has similar features as Claim 21, Claims 4 and 24 are patentable over the proposed combination of Curry, Rabu, and Tamir. The addition of Tamir does not cure the shortcomings of Curry and Rabu.

VII. GROUND 1C: CLAIMS 6, 7, 16, 26, 27, AND 34 ARE PATENTABLE OVER THE COMBINATION OF CURRY, RABU, AND BALACHANDRAN

Claims 6, 7, 16, 26, 27, and 34 ultimately depend from one of Claim 1 or Claim 21 and incorporate the same limitations therein. Thus, at least for the same reasons as are set forth above for Claim 1, which has similar features as Claim 21, Claims 6, 7, 16, 26, 27, and 34 are patentable over the proposed combination of Curry, Rabu, and Balachandran. The addition of Balachandran does not cure the shortcomings of Curry and Rabu.

VIII. GROUND 1D: CLAIMS 9, 10, 14, 15, 17, 18, 32, 33, AND 35-38 ARE PATENTABLE OVER THE COMBINATION OF CURRY, RABU, AND KATAYAMA

Claims 9, 10, 14, 15, 17, 18, 32, 33, and 35-38 ultimately depend from one of Claim 1 or Claim 21 and incorporate the same limitations therein. Thus, at least for the same reasons as are set forth above for Claim 1, which has similar features as Claim 21, Claims 9, 10, 14, 15, 17, 18, 32, 33 and 35-38 are patentable over the proposed combination of Curry, Rabu, and Katayama. The addition of Katayama does not otherwise cure the shortcomings of Curry and Rabu.

A POSITA would also not have looked to combine Katayama with Curry and/or Rabu. Katayama is directed to “a vehicle-mounted driving recorder that can facilitate an after-the-fact analysis on not only situation data at a time of an

accident but also situation data at a time of [a risk incident].” USAA-1024, Abstract, [0009]. Katayama is prohibitively different from the ’879 patent: (1) Katayama does not disclose a mobile telecommunications device (e.g., mobile phone); (2) Katayama is akin to a black box data recorder that is required to be electrically connected to the sensors of a vehicle; and (3) Katayama requires data from the vehicle sensors. *See id.*, Abstract, [0038], FIGs. 4-6. For example, Katayama’s device derives situation data from the vehicle sensors, where “[t]he situation data is vehicle speed data transmitted from a vehicle speed sensor.” *Id.*, [0038]. AT-2001, ¶177.

These characteristics of Katayama are in direct conflict with the requirements of the ’879 patent. For example, Katayama is not a mobile telecommunications device, does not have a downloadable application, and requires vehicle sensors, in conflict with independent claims 1 and 21. *See, e.g.*, USAA-1024, Abstract, [0033], [0038], [0042]-[0044]. Additionally, Katayama’s device is powered by “electric power supplied from a vehicle battery,” further illustrating that Katayama’s device is not mobile, because Katayama’s device depends on vehicle power, in conflict with claims 19 and 39. *Id.*, [0039]. Katayama’s device features are similarly incompatible with the use of Petitioner’s Curry-Rabu phone. Further, neither Curry nor Rabu disclose the need for distinguishing long-term versus short-term storage, as required by claims 9, 10, 35,

and 36 of the '879 patent. Because of Katayama's stark differences from Curry and Rabu, a POSITA simply would not have looked to or have been motivated to combine Katayama with Curry and/or Rabu for data storage details that would bring unnecessary complexity to the combination. AT-2001, ¶178.

IX. GROUND 1E: CLAIMS 14, 15, 32, AND 33 ARE PATENTABLE OVER THE COMBINATION OF CURRY, RABU, AND THOMPSON2010

Claims 14, 15, 32, and 33 ultimately depend from one of Claim 1 or Claim 21 and incorporate the same limitations therein. Thus, at least for the same reasons as are set forth above for Claim 1, which has similar features as Claim 21, Claims 14, 15, 32, and 33 are patentable over the proposed combination of Curry, Rabu, and Thompson2010. The addition of Thompson2010 does not otherwise cure the shortcomings of Curry and Rabu.

Further, Thompson2010 presents several shortcomings that would have discouraged a POSITA from using it in the asserted combination. *See* USAA-1008, 8-9. AT-2001, ¶181. Petitioner and Michalson acknowledge that “while Curry contemplates emergency scenarios (e.g., accidents) may occur, it does not disclose specific embodiments focused on detecting an emergency or actions performed by phone 106 in response to a detected emergency.” Pet. 72 (citing USAA-1005, 3:16-28, 9:16-26, cl. 9; USAA-1003, ¶248-248). Petitioner thus asserts that a POSITA would have modified Curry with Thompson2010's accident detection technique to

“advance[] Curry’s overall motivation to reduce casualties resulting from vehicular accidents.” Pet. 73. However, Thompson2010 is a rudimentary experimental study limited to significant crashes that filters out and/or ignores certain sensor data that the ’879 patent would depend on for event detection. AT-2001, ¶182.

Thompson2010’s system is enabled only when its cell phone device is plugged into a vehicle power source because “GPS receivers consume a substantial amount of power and sampling them at the rate necessary to accurately determine speed would...limit the lifetime of the device....” USAA-1008, 8. Thompson2010 captures data related to an accident, but Thompson2010 does not collect data related to acceptable or unacceptable driving behaviors or patterns that do not result in an accident because Thompson2010 mitigates “false positives” by filtering out what could otherwise be useful data. *See id.*, 4 (section 2.2). Thus, a POSITA would have immediately recognized significant problems with Thompson2010. AT-2001 ¶183.

For example, Thompson states that “[t]he required acceleration to trigger airbag deployment is 60G’s [10, 11].” USAA-1008, 9. A POSITA would have understood that 60G acceleration corresponds to a very severe crash. In addition to its exaggeration of trigger levels, Thompson2010 determined that its “acceleration filter prevents drops...from triggering accident notifications.” *Id.*, 8. Thompson2010’s acceleration filter thus is set to ignore accelerometer data below

4G to prevent false positives (such as might be experienced from an inadvertent phone drop). *Id.* However, vehicle airbags may deploy at levels of acceleration around 4G, so a POSITA would have found it essential to *not* filter out data around this critical level. AT-2001 ¶184.

In limiting its study to such experimental levels, Thompson2010 itself recognized that “[i]t may not be possible to detect all accidents with smartphones.... More work is needed to enhance the filtering mechanisms to account for these types of collisions.” USAA-1008, 12-13. Although the ’879 patent recognized the same potential issue (USAA-1001, 19:65—20:4), the ’879 patent went far further to solve challenges posed by Thompson2010. Given Thompson2010’s many shortcomings, Thompson2010 would not have provided motivation to combine it with Curry to arrive at the claims of the ’879 patent. As defined by the ’879 specification, although a crash is an example, predetermined events of significance include other events besides a crash (some more difficult to detect). *See* USAA-1001, 5:12—6:10. AT-2001 at ¶185.

Thompson2010 also makes general observations regarding the accelerations the phone may experience: It may be “stationary relative to the vehicle during the collision” or “carried in some form of pocket [and would] experience the same forces as vehicle occupants.” USAA-1008, 7. A POSITA would have understood that the accelerations experienced in a breast pocket versus a pants pocket versus

sitting on a seat versus mounted to the vehicle would have been different and would have needed to be accounted for, which Thompson2010 does not do. Nor is it a proper assumption by Michalson that the cell phones of the cited art will reliably capture “accelerations experienced by the driver.” *See* USAA-1003, ¶82. AT-2001 at ¶186.

The limitations of Thompson2010’s acceleration measurements would not provide the range needed by the ’879 patent for detecting accidents by the mobile telecommunications device. Thus, a POSITA thus likely would not have looked to combine Thompson2010 with Curry-Rabu to arrive at the subject matter of claims 14, 15, 32, and 33. AT-2001 at ¶187.

X. GROUND 1F: CLAIMS 45, 50, AND 53 ARE PATENTABLE OVER THE COMBINATION OF CURRY, RABU, AND WILLIS

Claims 45, 50, and 53 ultimately depend from one of Claim 21, Claim 46, or Claim 51 and incorporate the same limitations therein. Thus, at least for the same reasons as are set forth above for Claim 1, which has similar features as Claim 21, Claims 45, 50, and 53 are patentable over the proposed combination of Curry, Rabu, and Willis. The addition of Willis does not cure the shortcomings of Curry and Rabu.

XI. GROUND 1G: CLAIM 55 IS PATENTABLE OVER THE COMBINATION OF CURRY, RABU, AND BERKOBIN

At least for the same reasons as are set forth above for Claim 1, Claim 55, which adds the feature of a neural network to the processing of the claim “to determine whether the driving information represents an acceptable or unacceptable driving pattern” (USAA-1001, 38:33-37), is patentable over the proposed combination of Curry, Rabu, and Berkobin. The addition of Berkobin does not otherwise cure the shortcomings of Curry and Rabu with regard to the rest of the claim.

Further, Berkobin introduces its own shortcomings regarding Claim 55. Berkobin discloses techniques “for determining driver behavior based on vehicle operating parameters, adjusting insurance premiums, and preventing fraudulent manipulation.” USAA-1010, Abstract. Berkobin, as another “black-box-like” device integrated with a vehicle’s sensors, suffers from similar shortcomings as Katayama. *See id.*, [0021]. Berkobin relies on vehicle-embedded GPS and a cellular transceiver for vehicle performance metrics. *Id.* Berkobin’s apparatus “can interface and monitor various vehicle systems and sensors to determine vehicle systems” using standard “OBD (On Board Diagnostics) port, OBD-II port, CAN (Controller Area Network) port, and the like.” *Id.*, [0038]. Although Berkobin discloses interfacing with a PCS/cell phone/smartphone for communications and

monitoring phone usage, Berkobin does not contemplate using a phone for performing the features of its apparatus. *See, e.g.*, [0037], [0044], [0066], [0077]. Berkobin thus does not disclose or even contemplate any processing on a mobile phone as claimed. AT-2001 at ¶189.

Berkobin only generically suggests that its non-phone apparatus “can employ Artificial Intelligence techniques such as [a number of generic examples including a neural network].” *See, id.*, [0031]. Berkobin does not indicate how such AI functionality might be integrated into its apparatus for any purpose, much less for the purposes identified in Claim 55. AT-2001 at ¶190.

Patent Owner has been clear throughout this response that processing on the mobile device *as claimed* is not disclosed, taught, suggested, or rendered obvious by the cited references, alone or in combination; the addition of Berkobin to the combination similarly fails.

XII. CONCLUSION

USAA's Petition fails as Petitioner cannot show, and has not shown, that the claims of the '879 patent are obvious in light of the cited references. Accordingly, Patent Owner Auto Telematics Ltd. respectfully requests that the Board deny USAA's Petition and find all of the challenged claims patentable.

February 29, 2024

Respectfully submitted,

/Steven E. Tiller/

Steven E. Tiller, Reg. No. 39,859
Gregory Stone, Reg. No. 43,165
Lisa M. Schreihart, Reg. No. 80,016
Whiteford, Taylor & Preston L.L.P.
Seven Saint Paul Street – Suite 1500
Baltimore, Maryland 21202-1636
(410) 347-9425

And

Liss Mojica, Reg. No. 63,421
Answers IP LLC
700 Shi Lane
Stevensville, MD 21666
(443) 362-0479

*Attorneys for Patent Owner,
Auto Telematics Ltd.*

CERTIFICATE OF COMPLIANCE WITH 37 C.F.R. § 42.24

Pursuant to 37 C.F.R. § 42.24, Patent Owner Auto Telematics Ltd., certifies that, based on the word count of the word processing application used to prepare this paper, the number of words in this Patent Owner Response is 13,259. This word count does not include the items that may be excluded from the count under 37 C.F.R. § 42.24(a) including the table of contents, table of authorities, list of exhibits and this certificate.

February 29, 2024

Respectfully submitted,

/Steven E. Tiller/

Steven E. Tiller, Reg. No. 39,859

Gregory Stone, Reg. No. 43,165

Lisa M. Schreihart, Reg. No. 80,016

Whiteford, Taylor & Preston L.L.P.

Seven Saint Paul Street – Suite 1500

Baltimore, Maryland 21202-1636

(410) 347-9425

And

Liss Mojica, Reg. No. 63,421

Answers IP LLC

700 Shi Lane

Stevensville, MD 21666

(443) 362-0479

*Attorneys for Patent Owner,
Auto Telematics Ltd.*

CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. § 42.6(e), undersigned counsel certifies that on February 29, 2024, this paper – Patent Owner Auto Telematics Ltd.’s Response Pursuant to 37 C.F.R. §42.107 – was served via electronic mail upon the following counsel of record for Petitioner:

Via Email Only (by consent):

W. Karl Renner
IPR36137-0027IP1@fr.com

Thomas Rozylowicz
tar@fr.com

Andrew B. Patrick
patrick@fr.com

Michael T. Zoppo
zoppo@fr.com

Ryan Chowdhury
rchowdhury@fr.com

Jennifer J. Huang
jjh@fr.com

PTABInbound@fr.com

axf-ptab@fr.com

February 29, 2024

Respectfully submitted,

/Steven E. Tiller/

Steven E. Tiller, Reg. No. 39,859
Gregory Stone, Reg. No. 43,165
Lisa M. Schreihart, Reg. No. 80,016
Whiteford, Taylor & Preston L.L.P.
Seven Saint Paul Street – Suite 1500
Baltimore, Maryland 21202-1636
(410) 347-9425

And

Liss Mojica, Reg. No. 63,421
Answers IP LLC
700 Shi Lane
Stevensville, MD 21666
(443) 362-0479

*Attorneys for Patent Owner,
Auto Telematics Ltd.*