

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re <i>Ex Parte</i> Reexamination of:	)	
	)	
U.S. Patent No. 9,147,296	)	
	)	
Issued: September 29, 2015	)	Group Art Unit: To Be Assigned
	)	
Named Inventor: Christopher Ricci	)	Examiner: To Be Assigned
	)	
Control Number: To Be Assigned	)	
	)	
Filed: April 15, 2014	)	
	)	
Title: CUSTOMIZATION OF VEHICLE	)	
CONTROLS AND SETTINGS BASED	)	
ON USER PROFILE DATA	)	

Mail Stop *Ex Parte* Reexam

Attn: Central Reexamination Unit
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Commissioner:

REQUEST FOR *EX PARTE* REEXAMINATION

Requester Toyota Motor Corp respectfully requests *ex parte* reexamination under 35 U.S.C. § 302 and 37 C.F.R. § 1.510 of U.S. Patent No. 9,147,296 (“the ’296 patent,” Ex. A), assigned to Patent Owner AutoConnect Holdings, LLC, per the assignment at Reel/Frame: 068206/0503.

As this Request demonstrates, prior art references, including at least *Ikeda* and *Hendry*, raise several substantial new questions of patentability (“SNQs”) with respect to claims 1-20. Indeed, this prior art renders each of these claims unpatentable under 35 U.S.C. §§ 102 and 103.

Toyota thus respectfully requests that the Office grant this Request for *ex parte* reexamination of the '296 patent and cancel claims 1-20.

In accordance with 37 C.F.R. § 1.510(b), this Request includes the following:

- (1) A statement pointing out each substantial new question of patentability based on prior patents and printed publications.
- (2) An identification of every claim for which reexamination is requested, and a detailed explanation of the pertinency and manner of applying the cited prior art to every claim for which reexamination is requested. For each statement of the patent owner and accompanying information submitted pursuant to [37 C.F.R.] § 1.501(a)(2) which is relied upon in the detailed explanation, the request must explain how that statement is being used to determine the proper meaning of a patent claim in connection with the prior art applied to that claim and how each relevant claim is being interpreted. If appropriate, the party requesting reexamination may also point out how claims distinguish over cited prior art.
- (3) A copy of every patent or printed publication relied upon or referred to in paragraph (b) (1) and (2) of this section accompanied by an English language translation of all the necessary and pertinent parts of any non-English language patent or printed publication.
- (4) A copy of the entire patent including the front face, drawings, and specification/claims (in double column format) for which reexamination is requested, and a copy of any disclaimer, certificate of correction, or reexamination certificate issued in the patent. All copies must have each page plainly written on only one side of a sheet of paper.
- (5) A certification that a copy of the request filed by a person other than the patent owner has been served in its entirety on the patent owner at the address as provided for in [37 C.F.R.] § 1.33(c). The name and address of the party served must be indicated. If service was not possible, a duplicate copy must be supplied to the Office.
- (6) A certification by the third party requester that the statutory estoppel provisions of 35 U.S.C. [§] 315(e)(1) or 35 U.S.C. [§] 325(e)(1) do not prohibit the requester from filing the *ex parte* reexamination request.

Attachments

- (1) Certificate of Service on Patent Owner.
- (2) Information Disclosure Statement Form PTO/SB/08.

Exhibits

- Ex. A: U.S. Patent No. 9,147,296 to Christopher Ricci (“the ’296 patent”).
Ex. B: Patent Prosecution History of U.S. Patent No. 9,147,296.
Ex. C: Declaration of Mr. Scott Denning.
Ex. D: CV of Mr. Scott Denning.

Prior Art Exhibits

- PA-1: U.S. Patent Pub. No. 2008/0215209 to Ikeda, filed February 28, 2008, and published September 4, 2008, (“*Ikeda*”).
- PA-2: U.S. Patent Pub. No. 2012/0303178 to Hendry, filed May 26, 2011, and published November 29, 2012, (“*Hendry*”).
- PA-3: U.S. Patent Pub. No. 2007/0238491 to He, filed March 31, 2006, and published October 11, 2007 (“*He*”).
- PA-4: U.S. Patent No. 8,977,408 to Cazanias et al., filed September 23, 2011, and published March 10, 2015 (“*Cazanias*”).

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I. RELATED PROCEEDINGS

A. Certification Regarding Statutory Estoppel

As required by 37 C.F.R. § 1.510(b)(6), Requester certifies that the statutory estoppel provisions of 35 U.S.C. § 315(e)(1) and 35 U.S.C. § 325(e)(1) do not prohibit Requester from filing the instant request for *ex parte* reexamination.

B. Other Proceedings

AutoConnect asserted the '296 patent against Toyota in a lawsuit captioned *AutoConnect Holdings LLC v. Toyota Motor Corporation et al.* No. 2:24-cv-00802-JRG-RSP (E.D. Tex. October 3, 2024). AutoConnect also asserted the '296 patent in *AutoConnect Holdings LLC v. Ford Motor Company* No. 1-24-cv-01327 (D. Del. December 6, 2024).

Toyota petitioned for *inter partes review* of the '296 patent in IPR2025-00891 (April 29, 2025). That petition was denied on discretionary grounds on September 19, 2025. This Request tracks the same substantive arguments raised in the IPR.

Ford Motor Company petitioned for *inter partes review* of the '296 patent in IPR2026-00002 (October 2, 2025). The prior-art asserted in this Request does not appear in Ford's petition, and the prior-art asserted in Ford's petition does not appear in this Request.

An SNQ of patentability is present “unless the same question of patentability has already been: (A) decided in a final holding of invalidity by a federal court in a decision on the merits involving the claim, after all appeals; (B) decided in an earlier concluded examination or review of the patent by the Office; or (C) raised to or by the Office in a pending reexamination or supplemental examination of the patent.” M.P.E.P. § 2816.02. “For example, the same question of patentability may already have been decided if the Office has previously considered, in an earlier concluded examination or review of the patent, the same question of patentability based

on the same prior art.” M.P.E.P. § 2816.02 (citing *In re Recreative Techs.*, 83 F.3d 1394, 38 USPQ2d 1776 (Fed. Cir. 1996)) (emphasis added). But here, the Office has not considered the same question of patentability in any earlier concluded examination or review of the patent.

C. Request for Expedited Reexamination

Due to the ongoing nature of the above-identified lawsuits, Requester respectfully urges that, pursuant to 35 U.S.C. § 305, this Request be granted and reexamination be conducted not only with “special dispatch,” but also with “priority over all other cases” in accordance with M.P.E.P. § 2261.

II. IDENTIFICATION OF CLAIMS THAT SHOULD BE REEXAMINED

Under 37 C.F.R. § 1.510(a), Toyota respectfully requests *ex parte* reexamination of claims 1-20 of the '296 patent and the issuance of a reexamination certificate cancelling these claims.

III. OVERVIEW OF THE '296 PATENT AND ITS PROSECUTION HISTORY

A. Specification

The '296 patent claims systems and methods relating to detecting a user in a location in a vehicle and configuring the location to match the user's settings.

The specification describes “determining a location” in a vehicle associated with a user. '296 patent, 5:21-32. Figure 5A illustrates locations in a vehicle:

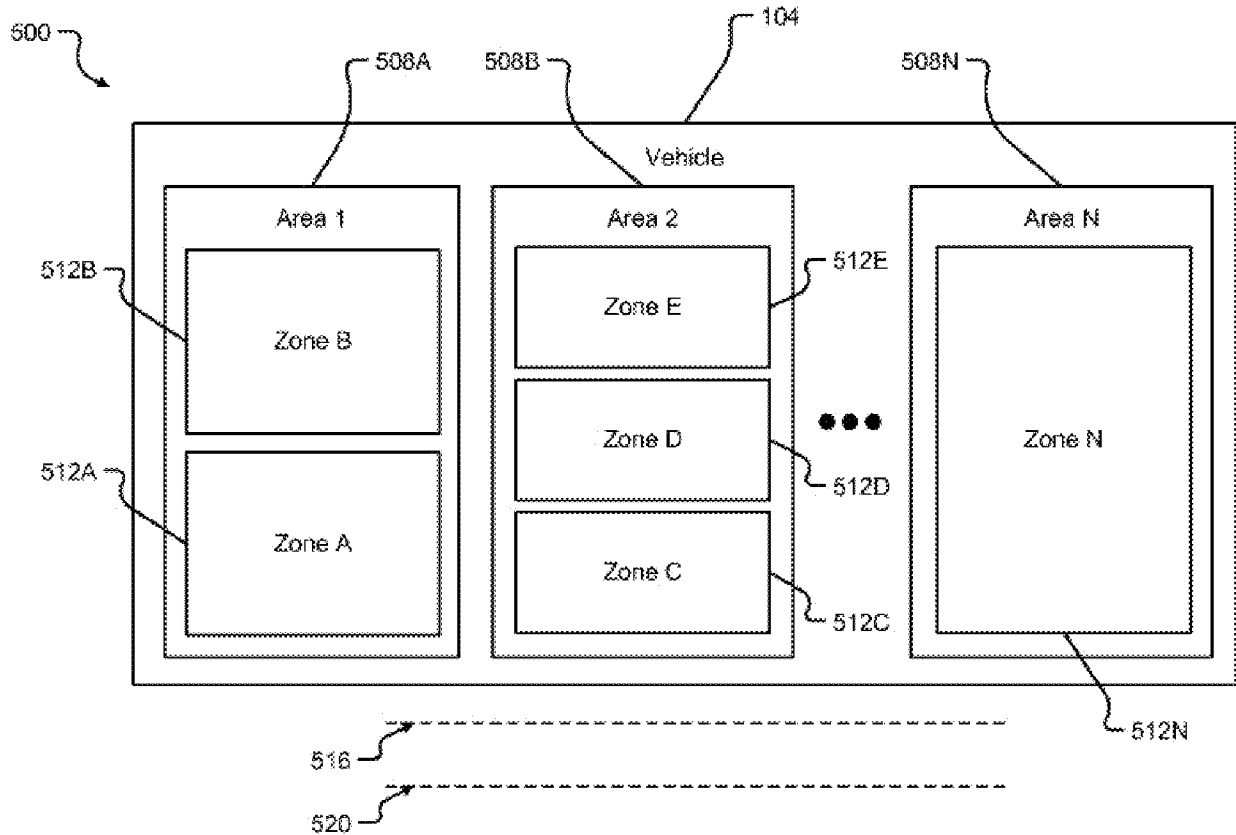
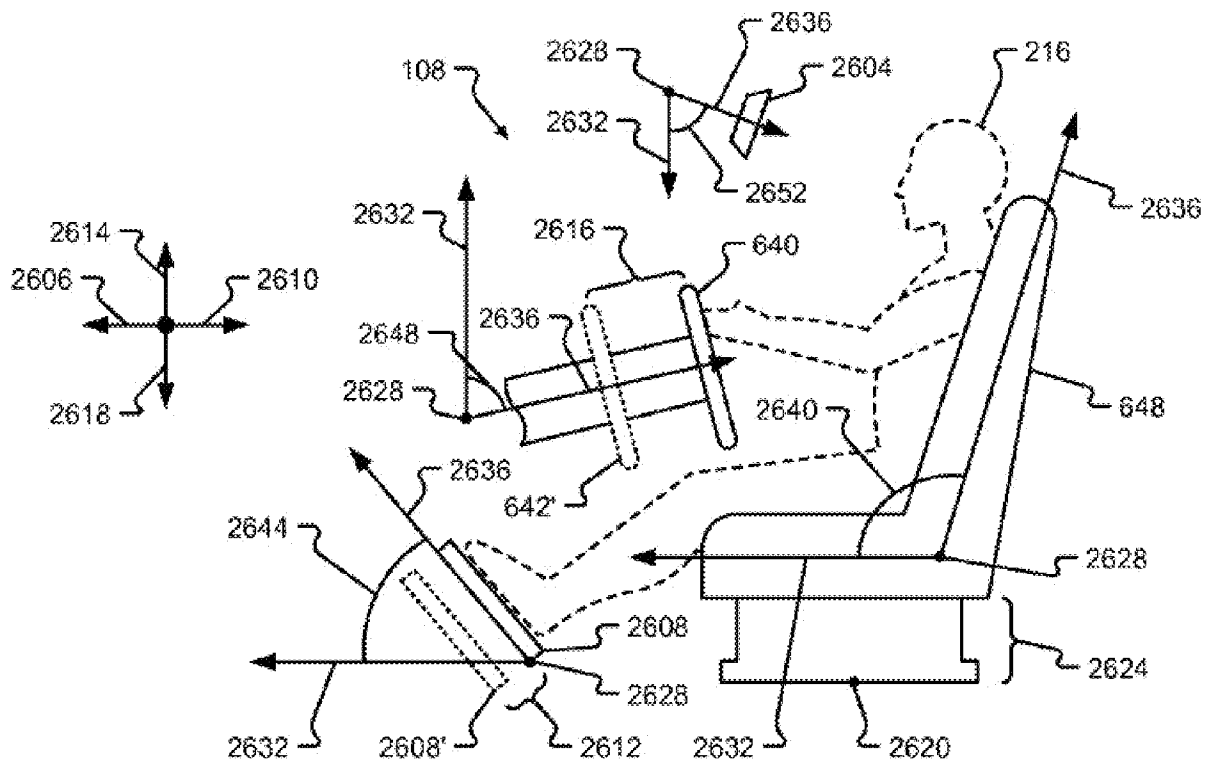


Fig. 5A

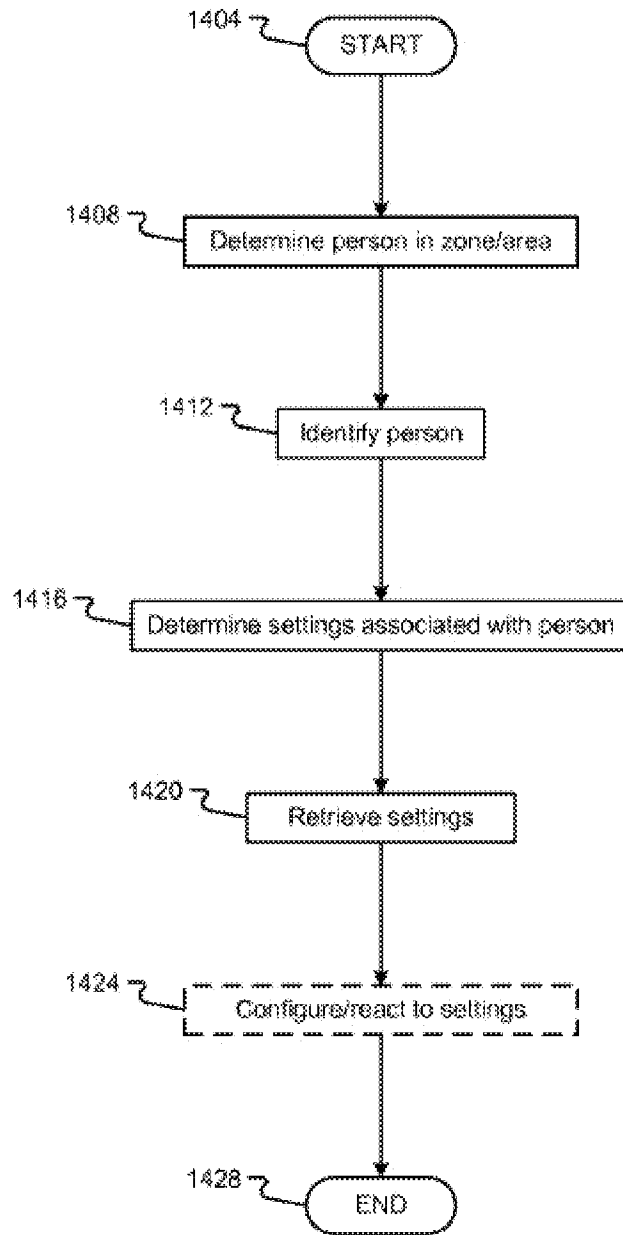
'296 patent, Fig. 5A. The '296 patent specification further explains that Zone A is “associated with a driver,” Zone B is “associated with a front passenger,” and Zones C-E are “associated with three passenger seats typically found in the rear passenger area of a vehicle.” '296 patent, 25:64-26:20.

The specification further describes “determining at least one vehicle control associated with the location inside the vehicle.” '296 patent, 5:21-32. Figure 26 illustrates vehicle controls:



'296 patent, Fig. 26. The '296 specification explains that this figure illustrates “one or more controls, actuators, systems, and components,” including “a speed control pedal 2608,” “steering wheel 640,” and “occupant seating system 648.” '296 patent, 83:7-12. The specification further explains that these features can be “moved, and/or positioned, in one or more directions” or “according to angular adjustments.” '296 patent, 83:13-60.

Figure 14 of the '296 patent illustrates detecting a user's presence, accessing the user's profile (including saved settings), reading and retrieving a user's settings to determine whether vehicle controls need to be adjusted to match the saved settings, and adjusting the vehicle controls to match the saved settings:



'296 patent, Fig. 14.

In step 1408, the '296 patent's system "can determine if a person is in a zone . . . in step 1408." '296 patent, 64:40-45. Specifically, the specification explains that the system uses "facial recognition, weight sensors, heat sensors, or other sensors to determine whether a person is occupying a certain zone 512." '296 patent, 64:40-45.

After detecting a user's presence, the system identifies the person (in step 1412). The

specification discloses that this identification step can involve the system “obtain[ing] characteristics for the user currently occupying the zone 512 and compar[ing] those characteristics to the identifying features in portion 1212 of data structure 1204.” ’296 patent, 64:46-53. The system then determines “if there are settings associated with the identified person for that zone . . . in step 1416.” ’296 patent, 64:54-60.

The specification explains that after referring to the user’s settings in step 1416, the system can then “read and retrieve those settings, in step 1420.” ’296 patent, 64:60-65:3.

Finally, the retrieved settings are used “to change the configuration of the vehicle” to match the user’s preferences. ’296 patent, 64:60-65:3.

B. Claims 1-20 of the ’296 Patent

This Request concerns claims 1-20 of which claims 1, 7, 8, and 14 are independent. Claims 2-6 depend from independent claim 1. Claims 9-13 depend from independent claim 8. Claims 15-20 depend from independent claim 14. Each of these claims is reproduced below:

1. A method, comprising:

- determining a location inside a vehicle associated with a user;
- determining at least one vehicle control associated with the location inside the vehicle;
- determining a presence of the user inside the vehicle, wherein determining the presence of the user comprises detecting a device associated with the user in an area of the vehicle;
- referring to a user profile memory associated with the user for vehicle control settings;
- determining, based at least partially on the vehicle control settings, to adjust the at least one vehicle control associated with the location inside the vehicle; and

providing an adjustment output to a vehicle control system, wherein the adjustment output is provided based at least partially on determining the user is present in the location inside the vehicle, wherein the vehicle control system is adapted to control the at least one vehicle control associated with the location inside the vehicle.

2. The method of claim 1, wherein prior to determining the location inside the vehicle associated with the user the method further comprises:

storing, in the user profile memory, information corresponding to locations inside the vehicle occupied by the user;

collecting vehicle control setting data associated with the user, wherein the vehicle control setting data includes at least one vehicle control setting made by the user in at least one of the locations inside the vehicle; and

storing the vehicle control setting data in the user profile memory.

3. The method of claim 1, wherein the at least one vehicle control includes one or more vehicle features such as a seat system, a steering control, a foot pedal control, a mirror position, and a display device.

4. The method of claim 3, wherein the vehicle control settings include at least one of a position, a sensitivity, an angle, and a movement, associated with the one or more vehicle features.

5. The method of claim 1, wherein determining the presence of the user inside the vehicle further comprises:

detecting a person via at least one image sensor associated with the vehicle;

identifying facial features associated with the person detected via the at least one image sensor; and

determining whether the identified facial features associated with the person match user characteristics stored in a memory.

6. The method of claim 1, further comprising:

determining that the user made a change to the adjusted at least one vehicle control; and

storing the change made to the adjusted at least one vehicle control in the user profile memory.

7. A method, comprising:

determining a location inside a vehicle associated with a user;

determining at least one vehicle control associated with the location inside the vehicle;

referring to a user profile memory associated with the user for vehicle control settings;

determining, based at least partially on the vehicle control settings, to adjust the at least one vehicle control associated with the location inside the vehicle; and

providing an adjustment output to a vehicle control system, wherein the vehicle control system is adapted to control the at least one vehicle control associated with the location inside the vehicle, wherein the at least one vehicle control is adjusted via the adjustment output to match the vehicle control settings in the user profile memory.

8. A non-transitory computer readable medium having instructions stored thereon that, when executed by a processor, perform a method comprising:

determining a location inside a vehicle associated with a user;

determining at least one vehicle control associated with the location inside the vehicle;

referring to a user profile memory associated with the user for vehicle control settings;

determining, based at least partially on the vehicle control settings, to adjust the at least one vehicle control associated with the location inside the vehicle; and

providing an adjustment output to a vehicle control system, wherein the vehicle control system is adapted to control the at least one vehicle control associated with the location inside the vehicle, wherein the at least one vehicle control is adjusted via the adjustment output to match the vehicle control settings in the user profile memory.

9. The non-transitory computer readable medium of claim 8, wherein prior to providing the adjustment output, the method further comprises:

determining a presence of the user inside the vehicle, wherein the adjustment output is provided based at least partially on determining the user is present in the location of the vehicle.

10. The non-transitory computer readable medium of claim 8, wherein prior to determining the location inside the vehicle associated with the user the method further comprises:

storing, in the user profile memory, information corresponding to locations inside the vehicle occupied by the user;

collecting vehicle control setting data associated with the user, wherein the vehicle control setting data includes at least one vehicle control setting made by the user in at least one of the locations inside the vehicle; and

storing the vehicle control setting data in the user profile memory.

11. The non-transitory computer readable medium of claim 8, wherein the at least one vehicle control includes one or more vehicle features such as a seat system, a steering control, a foot pedal control, a mirror position, and a display device, and wherein the vehicle control settings include at least one of a position, a sensitivity, an angle, and a movement, associated with the one or more vehicle features.

12. The non-transitory computer readable medium of claim 9, wherein determining the presence of the user inside the vehicle further comprises:

detecting a person via at least one image sensor associated with the vehicle;

identifying facial features associated with the person detected via the at least one image sensor; and

determining whether the identified facial features associated with the person match user characteristics stored in a memory.

13. The non-transitory computer readable medium of claim 8, wherein the method further comprises:

determining that the user made a change to the adjusted at least one vehicle control; and

storing the change made to the adjusted at least one vehicle control in the user profile memory.

14. A vehicle control system, comprising:

a profile identification module contained in a memory and executed by a processor of the vehicle control system, the profile identification module configured to determine a location inside a vehicle associated with a user, determine at least one vehicle control associated with the location inside the vehicle, refer to a user profile memory associated with the user for vehicle control settings, and determine, based at least partially on the vehicle control settings, to adjust the at least one vehicle control associated with the location inside the vehicle, provide an adjustment output to the vehicle control system, wherein the vehicle control system is adapted to control the at least one vehicle control associated with the location inside the vehicle, wherein the at least one vehicle control is adjusted via the adjustment output to

match the vehicle control settings in the user profile memory.

15. The vehicle control system of claim 14, wherein prior to providing the adjustment output, the profile identification module is further configured to determine a presence of the user inside the vehicle, wherein the adjustment output is provided based at least partially on determining the user is present in the location of the vehicle.
16. The vehicle control system of claim 14, wherein prior to determining the location inside the vehicle associated with the user the profile identification module is further configured to store, in the user profile memory, information corresponding to locations inside the vehicle occupied by the user, collect vehicle control setting data associated with the user, wherein the vehicle control setting data includes at least one vehicle control setting made by the user in at least one of the locations inside the vehicle, and store the vehicle control setting data in the user profile memory.
17. The vehicle control system of claim 14, wherein the at least one vehicle control includes one or more vehicle features such as a seat system, a steering control, a foot pedal control, a mirror position, and a display device, and wherein the vehicle control settings include at least one of a position, a sensitivity, an angle, and a movement, associated with the one or more vehicle features.
18. The vehicle control system of claim 15, wherein, in determining the presence of the user inside the vehicle, the user the profile identification module is further configured to detect a person via at least one image sensor associated with the vehicle, identify facial features associated with the person detected via the at least one image sensor, and determine whether the identified facial features associated with the person match user characteristics stored in a memory.
19. The vehicle control system of claim 14, wherein the profile identification module is further configured to determine that the user made a change to the adjusted at least one vehicle control, and store the change made to the adjusted at least one vehicle control in the user profile memory.

20. The vehicle control system of claim 14, wherein the profile identification module is further configured to determine a presence of the user inside the vehicle based at least partially on detecting a device associated with the user in an area of the vehicle, and wherein the adjustment output is provided based at least partially on determining the user is present in the location inside the vehicle.

'296 patent at 95:10-98:33.

C. Prosecution History

The '296 patent was filed on April 15, 2014, as U.S. Application No. 14/253,204. '296 patent at Cover Page, (21), (22). During prosecution, the examiner rejected all pending claims as anticipated by U.S. Patent Publication 2014/0028542 (*Lovitt*). Ex. B, 372. The examiner noted that certain pending claims would be allowable if rewritten in independent form. Ex. B, 372-73. The applicant amended the pending claims as suggested, adding the following limitations:

- “wherein determining the presence of the user comprises detecting a device associated with the user in an area of the vehicle” (pending claim 8; issued claim 1)
- “wherein the at least one vehicle control is adjusted via the adjustment output to match the vehicle control settings in the user profile memory” (pending claims 10, 18, 19; issued claims 7, 8, 14)

Ex. B, 396-402. After this amendment, the examiner issued a Notice of Allowance. Ex. B, 455.

The Notice of Allowance did not list reasons for allowance. The examiner did not have the prior art relied on in this Request.

D. Level of Ordinary Skill in the Art

A skilled artisan would have had at least a four-year undergraduate degree in computer science, electrical engineering, automotive engineering, or a closely related field and at least two years of experience in the field of vehicle control systems. Ex. C, ¶63. More education can

supplement practical experience and vice versa. Ex. C, ¶63. Requestor's expert exceeded this by 2013. Ex. C, ¶64; *see* Ex. C, ¶¶4-13.

E. Claim Construction for the '296 Patent

The phrase "at least one" should be understood as defined in the '296 patent's specification: "The phrases 'at least one,' [is] both conjunctive and disjunctive in operation." '296 patent, 8:64-9:4. Thus, the phrase "at least one of A, B, and C," in the context of the '296 patent, "means A alone, B alone, C alone, A and B together, A and C together, B and C together, or A, B and C together." '296 patent, 8:64-9:4; Ex. C, ¶65.

IV. IDENTIFICATION OF PRIOR ART AND SUBSTANTIAL NEW QUESTIONS OF PATENTABILITY

A. Identification of Prior Art

The earliest possible priority date for claims 1-20 of the '296 patent is April 15, 2013. '296 patent at Cover Page, (60). Reexamination is requested in view of the following prior art references:

PA-1: U.S. Patent Pub. No. 2008/0215209 to Ikeda, filed February 28, 2008, and published September 4, 2008 ("*Ikeda*"), is prior art under AIA §§ 102(a)(1) and 102(a)(2)).

PA-2: U.S. Patent Pub. No. 2012/0303178 to Hendry, filed May 26, 2011, and published November 29, 2012 ("*Hendry*"), is prior art under AIA 35 U.S.C. §§ 102(a)(1) and 102(a)(2)).

As explained in detail below, the proposed grounds of rejection are based on (1) *Ikeda*, and (2) *Ikeda* in view of *Hendry*.

These prior art documents are listed on a form PTO/SB/08 filed concurrently herewith. Copies of all the listed references are attached.

B. Substantial New Questions of Patentability

For a substantial new question of patentability (SNQ) to be present, “it is only necessary that: (A) an item of information raises a[n] SNQ regarding at least one claim, i.e., the teaching of the item of information is such that a reasonable examiner would consider the teaching to be important in deciding whether or not the claim is patentable; and (B) the same question of patentability as to the claim has not been decided by the Office in an earlier concluded examination or review of the patent, decided in a final holding of invalidity (after all appeals) by a federal court in a decision on the merits involving the claim, or raised to or by the Office in a pending reexamination or supplemental examination of the patent.” M.P.E.P. § 2816.02(I); *see also In re Vivint, Inc.*, 14 F.4th 1342, 1349 (Fed. Cir. 2021) (“[A] question of patentability is new until it has been considered and decided on the merits.”). “For example, the same question of patentability may already have been decided if the Office has previously considered, in an earlier concluded examination or review of the patent, the same question of patentability based on the same prior art.” M.P.E.P. § 2816.02(I) (citing *In re Recreative Techs. Corp.*, 83 F.3d 1394 (Fed. Cir. 1996)).

Each proposed rejection in this Request presents a distinct SNQ of patentability that was not previously considered by the Office and that a reasonable Examiner would consider to be important in deciding whether the claims are patentable. The prosecution Examiner did not consider any of the prior art relied on in this Request.

As explained above, during prosecution, the examiner rejected all pending claims as anticipated by U.S. Patent Publication 2014/0028542 (*Lovitt*). Ex. B, 372. The examiner noted that certain pending claims would be allowable if rewritten in independent form. Ex. B, 372-73. The applicant amended the pending claims as suggested, adding the following limitations:

- “wherein determining the presence of the user comprises detecting a device associated with the user in an area of the vehicle” (pending claim 8; issued claim 1)
- “wherein the at least one vehicle control is adjusted via the adjustment output to match the vehicle control settings in the user profile memory” (pending claims 10, 18, 19; issued claims 7, 8, 14)

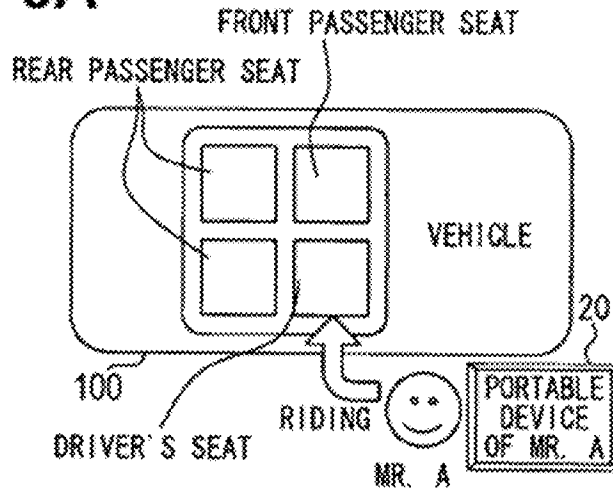
Ex. B, 396-402. After this amendment, the examiner issued a Notice of Allowance. Ex. B, 455. The Notice of Allowance did not list reasons for allowance. And the examiner did not have the prior art relied on in this Request.

As discussed below, the prior art relied on in this Request teaches both of these claim elements.

1. *Ikeda* raises an SNQ for claims 1-20.

As explained below, *Ikeda* discloses the claimed system determining a user’s presence in a vehicle and adjusting the vehicle’s settings to match the user’s saved user profile. Specifically, *Ikeda* discloses locations in the vehicle associated with a user. For example, *Ikeda* discloses “the in-vehicle device 10 detects the fact that the driver rides the vehicle 100 with the aid of the seat sensor provided in the driver's seat.” *Ikeda*, [0409].

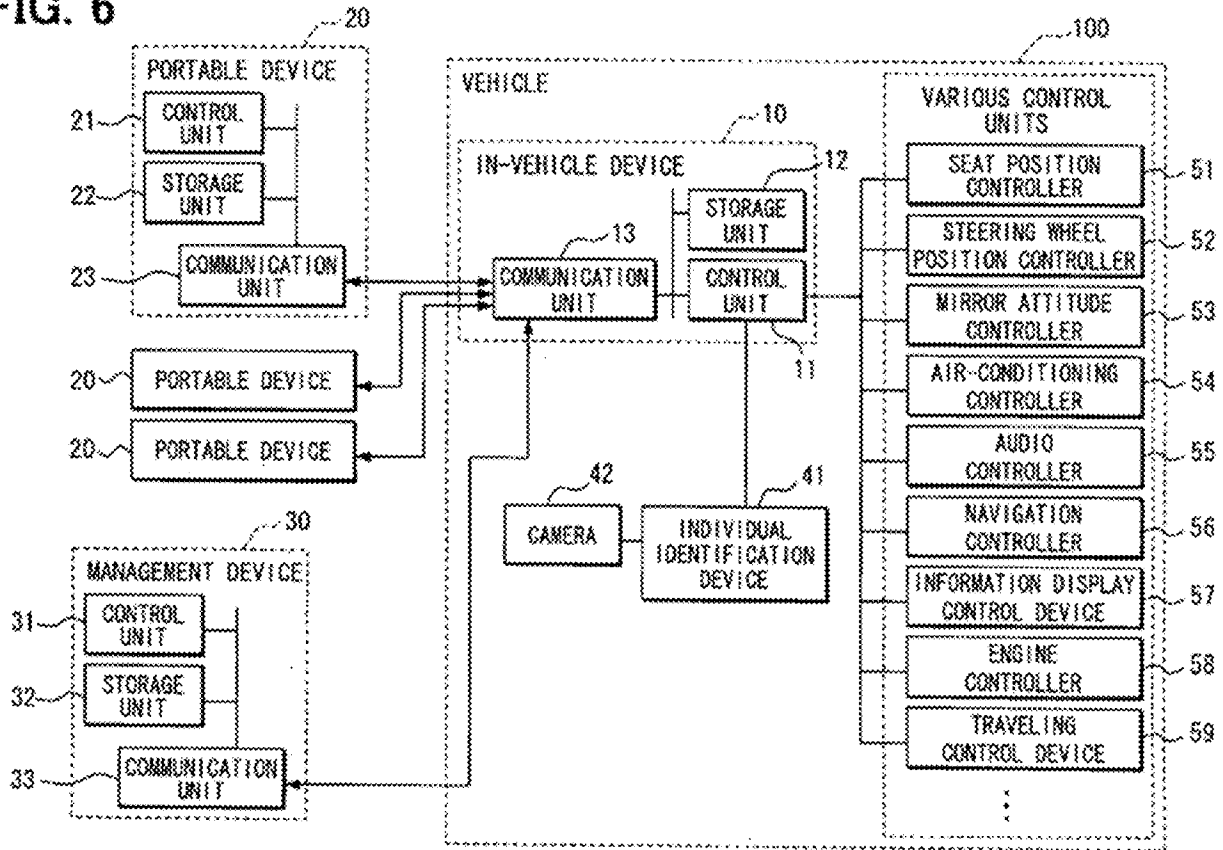
FIG. 5A



Ikeda, Fig. 5A.

Ikeda further discloses determining vehicle controls associated with the location in the vehicle. For example, *Ikeda* discloses “control units” that “enable a setup (change) of the driving environment according to a driver’s liking.” *Ikeda*, [0063]. The determined vehicle controls include drivers-seat location controls such as seat position, steering wheel position, mirror attitude, etc.

FIG. 6



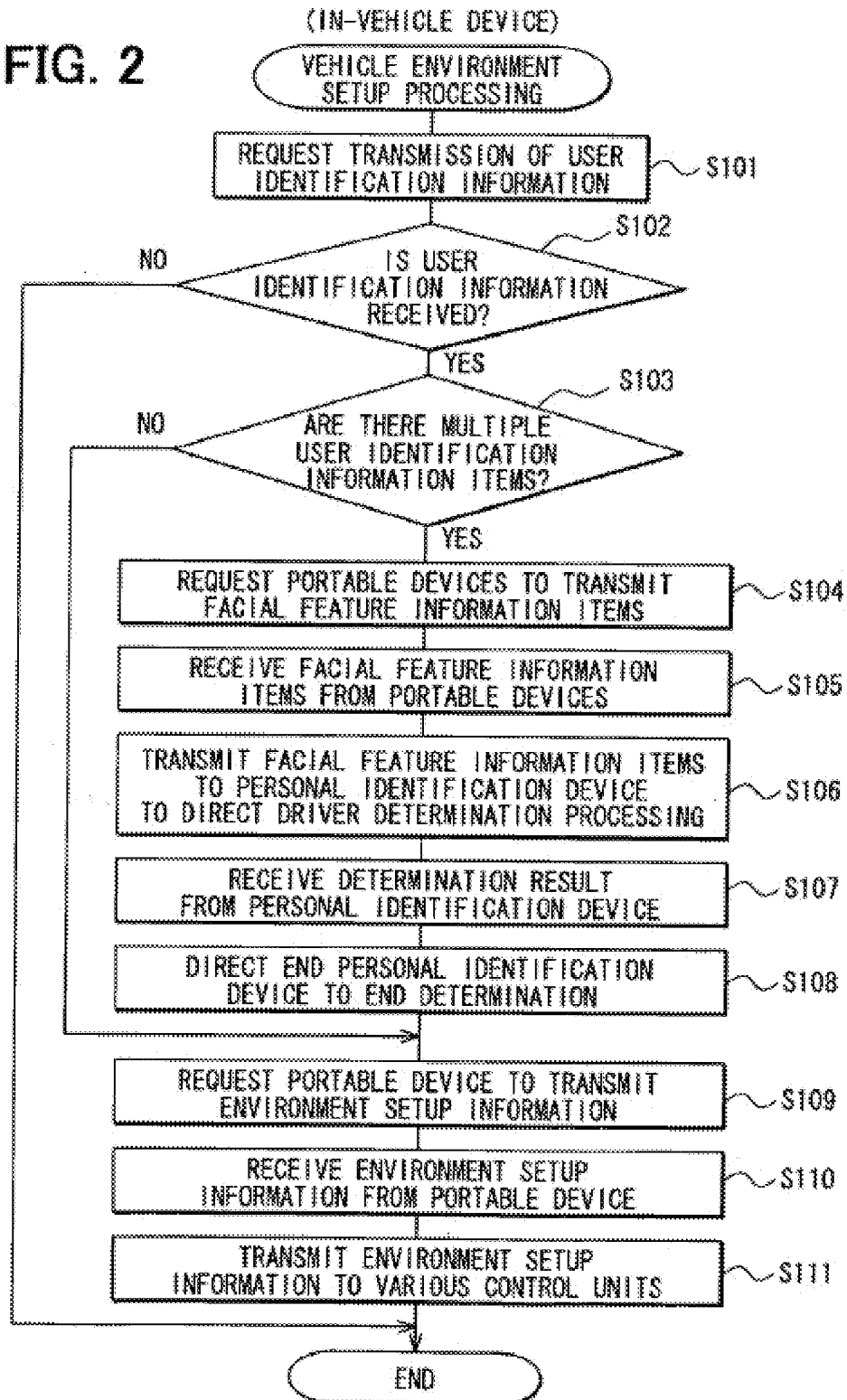
Ikeda, Fig. 6.

Ikeda further discloses determining the presence of a user inside the vehicle. For example, *Ikeda* discloses transmitting “an identification information-sending request” to a user’s device “to detect that the user is in a state of riding the vehicle.” *Ikeda*, [0080]. In Step S101 of Fig. 2 shown above, *Ikeda* specifically discloses that “the control unit 11 transmits an identification information-sending request which is a request to the user’s portable device 20 for the transmission of the user identification information.” *Ikeda*, [0080]. *Ikeda* discloses that the purpose of this request is “to detect that the user is in a state of riding the vehicle 100,” which is determining a presence of the user inside the vehicle. *Ikeda*, [0080].

Ikeda further discloses that its system refers to a user profile memory related to vehicle control settings and determines, based at least partially on those settings, to adjust vehicle

settings. For example, *Ikeda*'s figure 2 illustrates that its system requests transmission of user identification information (S101), whereby the system detects a user's presence; requests transmission of environment setup information (S109), whereby the system accesses a user's profile; receives environment setup information (S110); and transmits environment setup information to control units (S111):

FIG. 2



Ikeda, Fig. 2.

Ikeda further discloses sending, in step S109, a “setup information-sending request” to obtain the “environment setup information item” corresponding to the user detected in step S101. *Ikeda*, [0091]. The “environment setup information item” is data regarding a user’s setting preferences. *Ikeda*, [0013], [0064].

Ikeda further discloses receiving, in response to the “setup information-sending request,” the “environment setup information item” in step 110. *Ikeda*, [0092].

Finally, after receiving the “environment setup information item,” *Ikeda* discloses transmitting this information “to various control units” which “reproduce the driving environment indicated by the environment setup information item.” *Ikeda*, [0093], [0064].

This reference raises an SNQ at least because a reasonable Examiner would consider this reference’s disclosures to be important in deciding whether claims 1-20 are patentable, and because the reference was not cited or applied by the Examiner during prosecution of the ’296 patent.

2. *Ikeda* in combination with *Hendry* raises an SNQ for claims 6, 13, and 19.

As explained below, a POSITA would have been motivated to combine the teachings of *Ikeda* and *Hendry*. While like *Ikeda* in many respects, *Hendry* further contains substantial disclosure on detecting that a user made a change to a vehicle control and then saving that change in the user’s profile. For example, *Hendry* discloses that “a user may opt to change or add his or her personal settings after some time” and that if “the user does so, the user may be prompted by the user interface 122 to indicate if the adjusted settings of the one or more vehicle components are to be saved.” *Hendry*, [0031]. *Hendry* further discloses that “if a user changes the settings of the seat 50, the user interface 122 displays a screen to the user asking whether the user would like the vehicle 10 to remember the seat settings.” *Hendry*, [0026].

This combination raises an SNQ at least because a reasonable Examiner would consider these references' disclosures to be important in deciding whether claims 6, 13, and 19 are patentable, and because the combination was not cited or applied by the Examiner during prosecution of the '296 patent.

V. PROPOSED REJECTIONS OF THE '296 PATENT

The following rejections are proposed in this Request for claims 1-20 of the '296 patent:

- Claims 1, 3-9, 11-12, 14-15, 17-18, and 20 are unpatentable under 35 U.S.C. § 102 as anticipated by *Ikeda*.
- Claims 2, 6, 10, 13, 16, and 19 are unpatentable under 35 U.S.C. § 103 as obvious over *Ikeda*.
- Claims 6, 13, and 19 are unpatentable under 35 U.S.C. § 103 as obvious over *Ikeda* in view of *Hendry*.

VI. DETAILED EXPLANATION OF THE PROPOSED REJECTIONS OF THE CLAIMS OF THE '296 PATENT

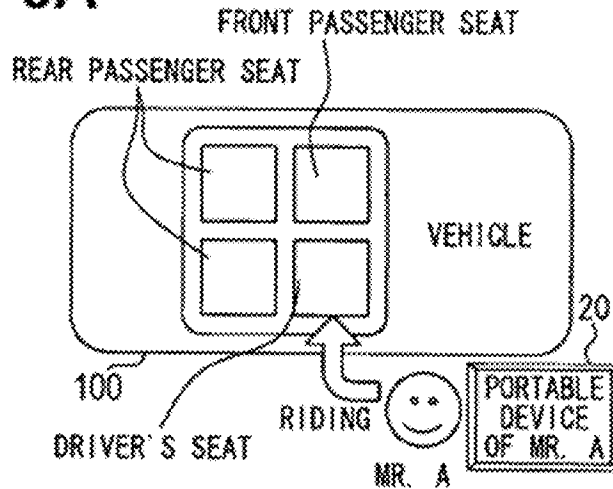
A. Ground 1: *Ikeda* anticipates claims 1, 3-9, 11-15, 17-18, and 20.

1. Independent Claim 1

1[a]: A method, comprising: determining a location inside a vehicle associated with a user;

Ikeda discloses *determining a location inside a vehicle associated with a user*. Ex. C, ¶¶66-68. For example, *Ikeda* discloses “the in-vehicle device 10 detects the fact that the driver rides the vehicle 100 with the aid of the seat sensor provided in the driver's seat.” *Ikeda*, [0409].

FIG. 5A



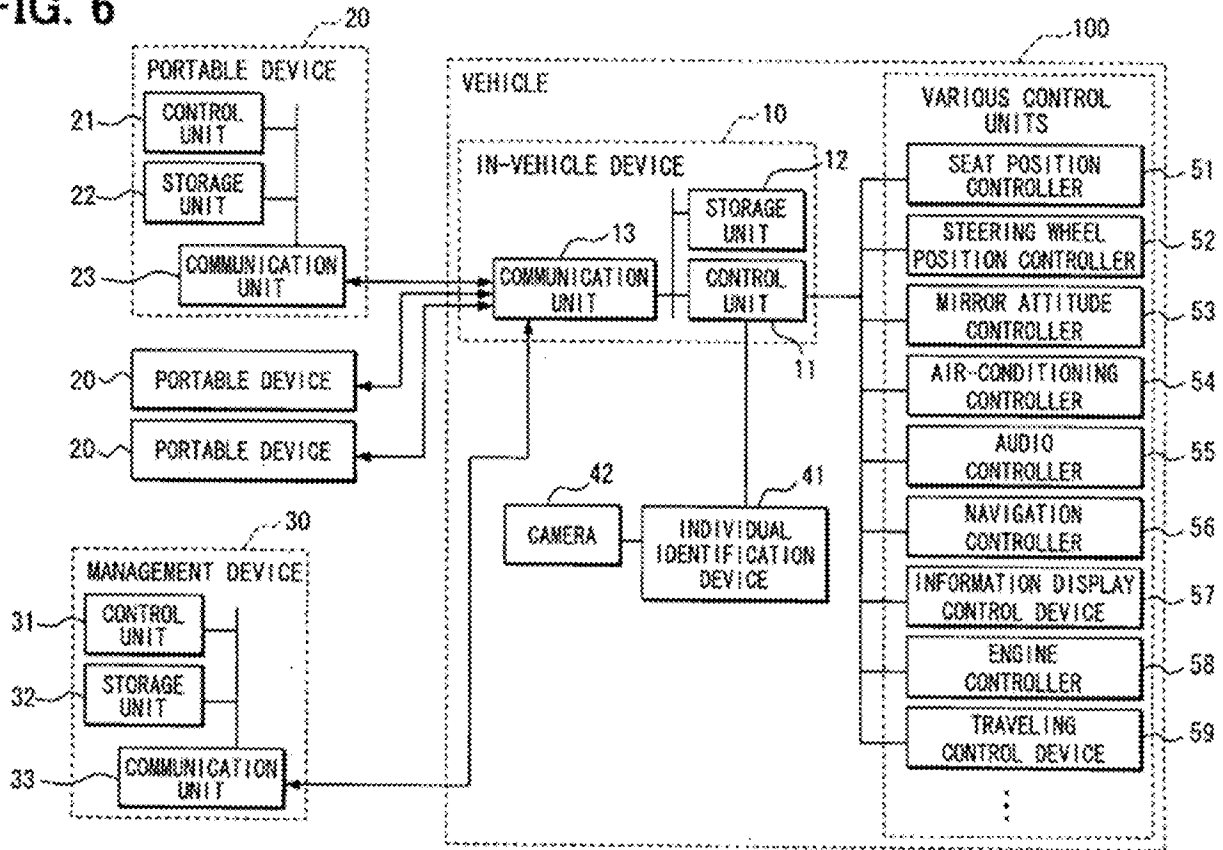
Ikeda, Fig. 5A.

Ikeda specifically discloses that “the driver’s seat” is determined to be a location associated with a user, namely the driver. Ex. C, ¶67. For example, *Ikeda* discloses that “[d]etection of the driver to ride in the vehicle 100 can be performed by, for example, detecting a user’s seating with a sitting sensor provided in the driver’s seat.” *Ikeda*, [0079]; *see also Ikeda*, [0080]. *Ikeda* also discloses 1[a] for the reasons discussed for claim 5. Ex. C, ¶67.

1[b]: determining at least one vehicle control associated with the location inside the vehicle;

Ikeda discloses *determining at least one vehicle control associated with the location inside the vehicle*. Ex. C, ¶¶69-71. For example, *Ikeda* discloses “control units” that “enable a setup (change) of the driving environment according to a driver’s liking.” *Ikeda*, [0063]. The vehicle controls identified include drivers-seat location controls such as seat position, steering wheel position, mirror attitude, etc. and they are therefore determined to be associated with a location inside the vehicle, namely the drivers-side seat position. *Ikeda*, Fig. 6.

FIG. 6

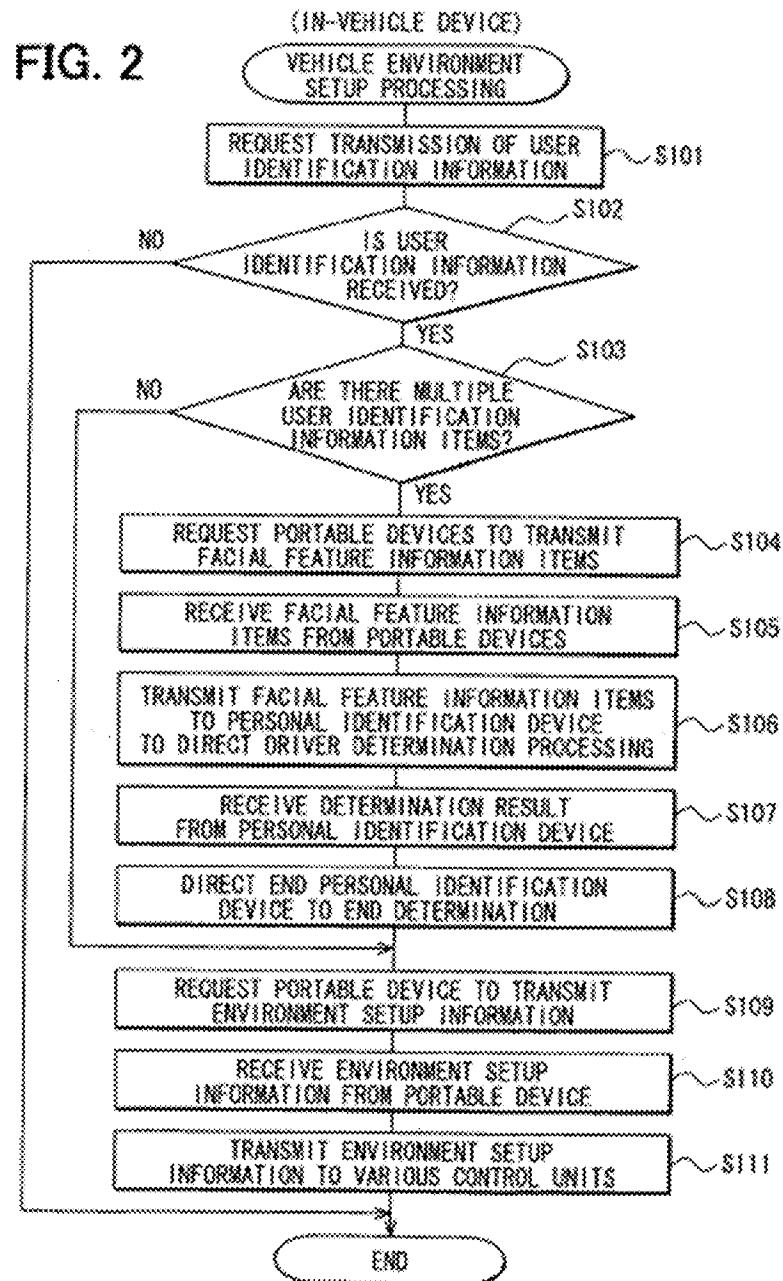


Ikeda, Fig. 6.

Ikeda discloses that its “control units 51-59 enable a setup (change) of the driving environment according to a driver’s liking,” including by adjusting “seat position,” “steering wheel position,” “mirror attitude,” “air-conditioning,” “audio,” “navigation,” and the “information display.” *Ikeda*, [0063]. The “control units” can be controlled manually (“according to the external operation by the user who rides the vehicle”) or automatically (“to reproduce the driving environment indicated by the environment setup information item, when the environment setup information item is inputted”). *Ikeda*, [0064]-[0065]. All of these vehicle controls are determined to be associated with the driver’s seat location in the vehicle. Ex. C, ¶70.

1[c]: determining a presence of the user inside the vehicle, wherein determining the presence of the user comprises detecting a device associated with the user in an area of the vehicle;

Ikeda discloses *determining a presence of the user inside the vehicle, wherein determining the presence of the user comprises detecting a device associated with the user in an area of the vehicle*. Ex. C, ¶¶72-75; *infra* § VI.A.4 (claim 5). For example, *Ikeda* discloses transmitting “an identification information-sending request” to a user’s device “to detect that the user is in a state of riding the vehicle.” *Ikeda*, [0080]. This detection is a determination that a user is in the vehicle.



Ikeda, Fig. 2.

In Step S101 of Fig. 2 shown above, *Ikeda* specifically discloses that “the control unit 11 transmits an identification information-sending request which is a request to the user’s portable device 20 for the transmission of the user identification information.” *Ikeda*, [0080]. *Ikeda* discloses that the purpose of this request is “to detect that the user is in a state of riding the

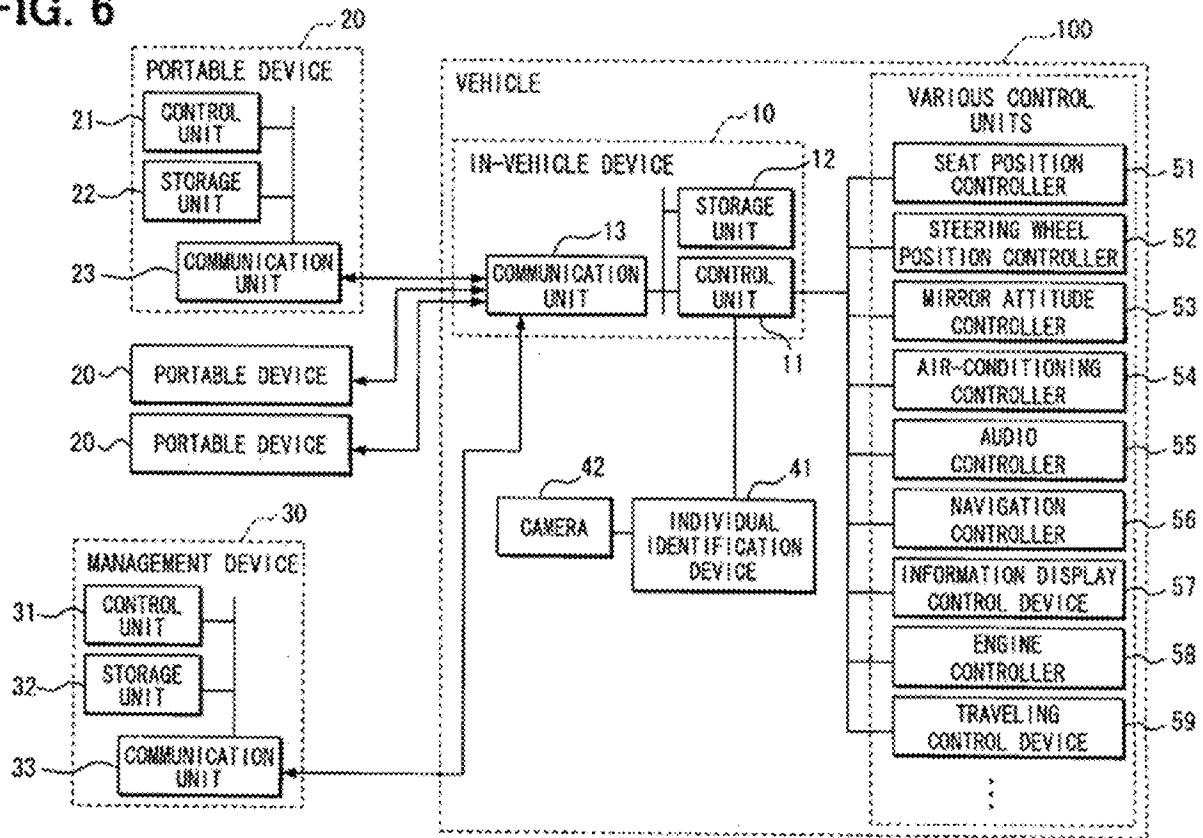
vehicle 100,” which is *determining a presence of the user inside the vehicle*. Ikeda, [0080]; Ex. C, ¶73.

Ikeda further discloses that “when the portable device 20 exists in the communications area (when a user who possesses the portable device 20 has ridden the vehicle 100), the user information stored in the portable device 20 is transmitted to the in-vehicle device.” *Ikeda*, [0080]. Thus, *Ikeda* is designed to *determine the presence of the user by detecting a device* (portable device 20) *associated with the user in an area of the vehicle*. Ex. C, ¶74.

1[d]: referring to a user profile memory associated with the user for vehicle control settings;

Ikeda discloses *referring to a user profile memory associated with the user for vehicle control settings*. Ex. C, ¶¶76-78. For example, *Ikeda* discloses obtaining “the environment setup information item indicative of the driving environment for the driver” (*vehicle control settings*) which is stored in the “storage unit 22” of portable device 20 (*user profile memory*). *Ikeda*, [0091]; *see also Ikeda*, [0073]. It does so by sending a “setup information-sending request” “to the portable device 20 of the driver.” *Ikeda*, [0091]; *see also Ikeda*, [0246]. This “setup information-sending request requests the portable device 20 of the driver to send the environment setup information item.” *Ikeda*, [0091]; *see also Ikeda*, [0246]. Thus, “the environment setup information stored in the portable device 20 of the driver or the environment setup information item indicative of the driving environment for the driver is transmitted from the portable device 20 to the in-vehicle device 10.” *Ikeda*, [0091]; *see also Ikeda*, [0246].

FIG. 6



Ikeda, Fig. 6.

Ikeda further discloses storing in the “storage unit 22” the “environment setup information item,” which is data “indicative of a driving environment of the associated user.” *Ikeda*, [0013]. For example, of the “control units 51-59,” “the seat position controller 51 adjusts the position of the driver’s electric seat.” *Ikeda*, [0064]. A user’s preferential setting for the “seat position controller 51” is stored as part of the “environment setup information item” and can be recalled so that “the driving environment can be reproduced correctly, without performing fine tuning by the external operation” (i.e., manually). *Ikeda*, [0064]. Ex. C, ¶77.

1[e]: determining, based at least partially on the vehicle control settings, to adjust the at least one vehicle control associated with the location inside the vehicle; and

Ikeda discloses *determining, based at least partially on the vehicle control settings, to adjust the at least one vehicle control associated with the location inside the vehicle*. Ex. C, ¶¶79-82. For example, *Ikeda* discloses that its “control units” operate “to reproduce the driving environment indicated by the environment setup information item.” *Ikeda*, [0064].

After receiving the “setup information-sending request,” the “environment setup information item stored in the portable device 20 . . . is transmitted from the portable device 20 to the in-vehicle device 10.” *Ikeda*, [0091]-[0092]; *see also Ikeda*, [0246]. As explained previously, the “environment setup information item” includes a user’s preferred settings (*vehicle control settings*). *Supra* § VI.A.1 (element 1[d]); Ex. C, ¶80. Specifically, *Ikeda* describes the “environment setup information item” as “indicative of a driving environment of the associated user.” *Ikeda*, [0013]. For example, of the “control units 51-59,” “the seat position controller 51 adjusts the position of the driver’s electric seat.” *Ikeda*, [0064]. Thus, a user’s preferential setting for the “seat position controller 51” is stored as part of the “environment setup information item” and can be recalled so that “the driving environment can be reproduced correctly, without performing fine tuning by the external operation” (i.e., manually). *Ikeda*, [0064].

Once the “in-vehicle device 10” receives the “environment setup information item” (*vehicle control settings*), it determines, based on the “environment setup information item” (*based at least partially on the vehicle control settings*) to transmit adjustment instructions to “various” (i.e., one or more) “control units 51-59” (*determining to adjust the at least one vehicle control associated with the location inside the vehicle*). Ex. C, ¶81. Specifically, after the “in-

vehicle device 10” receives the “environment setup information item,” it transmits data to “various” (i.e., one or more) “control units 51-59” for the purpose of “set[ting]” “the driving environment of the vehicle 100 . . . as the driving environment for the driver.” *Ikeda*, [0092]-[0093]; *see Ikeda*, [0251].

1[f]: providing an adjustment output to a vehicle control system, wherein the adjustment output is provided based at least partially on determining the user is present in the location inside the vehicle, wherein the vehicle control system is adapted to control the at least one vehicle control associated with the location inside the vehicle.

Ikeda discloses *providing an adjustment output to a vehicle control system, wherein the adjustment output is provided based at least partially on determining the user is present in the location inside the vehicle, wherein the vehicle control system is adapted to control the at least one vehicle control associated with the location inside the vehicle*. Ex. C, ¶¶83-88; *infra* § VI.A.4 (claim 5). For example, *Ikeda* discloses transmitting “the environment setup information item” to “control units” (*providing an adjustment output to a vehicle control system*) only after “detect[ing] that the user is in a state of riding the vehicle 100” (*based at least partially on determining the user is present in the location inside the vehicle*). *Ikeda*, [0080], [0087], [0093]; Ex. C, ¶83.

Ikeda discloses *providing an adjustment output to a vehicle control system*. Ex. C, ¶84. For example, *Ikeda* discloses transmitting “the environment setup information item . . . to various control units.” *Ikeda*, [0093], [0080], [0087]; *see also Ikeda*, Figs. 14, 18A, and 18B, [0233], [0236], [0244], [0251], [0267]-[0269], [0272]. Thus “the driving environment of the vehicle [] is set as the driving environment for the driver.” *Ikeda*, [0093].

Ikeda further discloses that *the vehicle control system is adapted to control the at least one vehicle control*. Ex. C, ¶85. The “control units” work together (as a *vehicle control system*)

to “enable a setup (change) of the driving environment according to a driver’s liking.” *Ikeda*, [0063].

Ikeda additionally discloses that the *vehicle control* that the *vehicle control system is adapted to control is associated with the location inside the vehicle* . For example, *Ikeda* discloses vehicle controls associated with the driver’s seat. Specifically, the “control units 51-59 enable a setup (change) of the driving environment according to a driver’s liking,” thus indicating that the control units are associated with the driver’s seat location. *Ikeda*, [0063]; Ex. C, ¶86. Further, *Ikeda* discloses vehicle controls that are associated directly with the driver’s seat location, including at least the “steering wheel position” and “seat position” controllers. *Ikeda*, [0063].

Ikeda discloses that *providing the adjustment output is based at least partially on determining the user is present in the location inside the vehicle*. Ex. C, ¶87. For example, *Ikeda* discloses only transmitting “the environment setup information item” after determining that the user is present in the location inside the vehicle. As illustrated in Figure 2, transmitting the “environment setup information item” (*providing the adjustment output*) occurs in Step S111 of the “vehicle environment setup processing.” *Ikeda*, [0093], [0079]-[0080]; *see also Ikeda* Figs. 14, 18A, and 18B and [0236], [0244], [0272]. But the “vehicle environment setup processing” would not proceed to Step S111 unless *Ikeda*’s system first “detect[s] that the user is in a state of riding the vehicle” in Step S101. *Ikeda*, [0079]-[0080]. This detection can be “performed by, for example, detecting a user’s seating with a sitting sensor provided in the driver’s seat” (*determining the user is present in the location inside the vehicle*). *Ikeda*, [0079]. Thus, *Ikeda* discloses that *providing the adjustment output is based at least partially on determining the user is present in the location inside the vehicle*.

- 2. Claim 3: The method of claim 1, wherein the at least one vehicle control includes one or more vehicle features such as a seat system, a steering control, a foot pedal control, a mirror position, and a display device.**

Ikeda further discloses *wherein the at least one vehicle control includes one or more vehicle features such as a seat system, a steering control, a foot pedal control, a mirror position, and a display device*. Ex. C, ¶¶89-91. For example, *Ikeda* discloses that the “control units 51-59 enable a setup (change) of the driving environment,” including “a seat position controller 51, a steering wheel position controller 52, a mirror attitude controller 53, an air-conditioning controller 54, an audio controller 55, a navigation controller 56, an information display control device 57, an engine controller 58, and a traveling control device 59.” *Ikeda*, [0063].

Ikeda’s “seat position controller 51” is *a seat system*; its “steering wheel position controller 52” is *a steering control*; its “mirror attitude controller 53” is *a mirror position*; and its “information display control device 57” is *a display device*. Ex. C, ¶90.

- 3. Claim 4: The method of claim 3, wherein the vehicle control settings include at least one of a position, a sensitivity, an angle, and a movement, associated with the one or more vehicle features.**

Ikeda further discloses *wherein the vehicle control settings include at least one of a position, a sensitivity, an angle, and a movement, associated with the one or more vehicle features*. Ex. C, ¶¶92-96. For example, *Ikeda* discloses “a seat position controller 51, a steering wheel position controller 52,” and “a mirror attitude controller 53.” *Ikeda*, [0063].

Ikeda’s “environment setup information” item is a *vehicle control setting*. Ex. C, ¶93. For example, the “seat position controller 51” setting is saved as an “environment setup information item.” *Ikeda*, [0064]. Thus, the settings for the various “control units 51-59” are “environment setup information items” or *vehicle control settings*. Ex. C, ¶93.

Ikeda's "environment setup information" items for its "seat position controller 51" and "steering wheel position controller 52" are *vehicle control settings* that include at least *a position associated with the one or more vehicle features*. Ex. C, ¶94. For example, the "seat position controller 51 adjusts the position of the driver's electric seat (the height of the seat surface, the positioning the back-and-forth direction, etc.)." *Ikeda*, [0064].

Ikeda's "environment setup information item" for its "mirror attitude controller 53" is a *vehicle control setting* that includes at least *an angle associated with the one or more vehicle features*. Ex. C, ¶95. The term "attitude" refers to the angle of the mirrors. Ex. C, ¶95. Further, *Ikeda* refers to being able to set "angles of various mirrors." *Ikeda*, [0005].

4. Claim 5

5[a]: The method of claim 1, wherein determining the presence of the user inside the vehicle further comprises: detecting a person via at least one image sensor associated with the vehicle;

Ikeda further discloses *wherein determining the presence of a user inside the vehicle further comprises: detecting a person via at least one image sensor associated with the vehicle*. Ex. C, ¶¶97-102. For example, *Ikeda* discloses "detect[ing] the fact that the driver rides the vehicle 100" by "us[ing] the taken image of the camera 42." *Ikeda*, [0409].

Ikeda specifically discloses that "the in-vehicle device 10 detects the fact that the driver rides the vehicle 100 with the aid of the seat sensor provided in the driver's seat." *Ikeda*, [0409]. *Ikeda* clarifies that the invention "is not limited" to using the seat sensor because "it may be possible to detect the fact that the driver rides the vehicle 100, through the detection of opening, closing, and unlocking of the door of the driver's seat side, or in use of the taken image of the camera 42[.]" *Ikeda*, [0409]; *see* [0122] (disclosing that the "in-vehicle device 10" can process signals from "camera 42"). Ex. C, ¶97.

5[b]: identifying facial features associated with the person detected via the at least one image sensor; and

Ikeda discloses *identifying facial features associated with the person detected via the at least one image sensor*. Ex. C, ¶¶100-102. For example, *Ikeda* discloses “detecting a facial feature point from the taken image of the camera 42.” *Ikeda*, [0062].

Ikeda specifically discloses that “the personal identification device 41 is for authenticating a user sitting in the driver’s seat based on his or her physical feature.” *Ikeda*, [0062]. *Ikeda* further discloses *at least one image sensor*. Ex. C, ¶101. For example, *Ikeda* discloses that “a camera 42 is installed ahead of the driver’s seat inside the vehicle 100, and can take an image of a face of a user sitting in the driver’s seat.” *Ikeda*, [0062]. *Ikeda* discloses *identifying facial features associated with the person detected*. Ex. C, ¶101. For example, *Ikeda* discloses that the “personal identification device 41 performs authentication by detecting a facial feature point from the taken image of the camera 42 as the driver's physical feature.” *Ikeda*, [0062].

5[c]: determining whether the identified facial features associated with the person match user characteristics stored in a memory.

Ikeda discloses *determining whether the identified facial features associated with the person match user characteristics stored in a memory*. Ex. C, ¶¶103-107. For example, *Ikeda* discloses “template matching of the facial feature information items received from the in-vehicle device 10 with the image taken with the camera 42.” *Ikeda*, [0097].

Ikeda discloses sending a “feature information-sending request . . . to request the portable device 20 to send facial feature information.” *Ikeda*, [0085]. In response to this request, “the facial feature information . . . stored in the portable device 20 is transmitted to the in-vehicle device 10.” *Ikeda*, [0085]. The “facial feature information . . . stored in the portable device 20” is

user characteristics stored in a memory. Ex. C, ¶104. *Ikeda* discloses that the “in-vehicle device 10 transmits [] facial feature information items . . . to the personal identification device 41” to initiate “driver determination processing.” *Ikeda*, [0087].

Ikeda discloses that during “driver determination processing,” “the personal identification device 41 identifies the driver’s facial feature information item out of the facial feature information items received from the in-vehicle device 10, by template matching of the facial feature information items received from the in-vehicle device 10 with the image taken with the camera 42” (*identified facial features*). *Ikeda*, [0097]; Ex. C, ¶105.

Ikeda discloses that, in this way, “the facial feature information item that belongs to the driver is certainly identified or selected among the multiple facial feature information items received from the in-vehicle device 10.” *Ikeda*, [0097]. Thus, *Ikeda* discloses *determining whether the identified facial features associated with the person match user characteristics stored in a memory.*

5. Claim 6

6[a]: The method of claim 1, further comprising: determining that the user made a change to the adjusted at least one vehicle control; and

Ikeda further discloses *determining that the user made a change to the adjusted at least one vehicle control.* Ex. C, ¶¶108-111. For example, *Ikeda* discloses that “the driving environment for the user is set up by the user’s external operation in the vehicle.” *Ikeda*, [0073].

Ikeda specifically discloses *determining that the user made a change.* Ex. C, ¶109. For example, *Ikeda* discloses that “after the driving environment for the user is set up by the user’s external operation,” the “in-vehicle device 10 . . . transmits the environment setup information item indicative of the current driving environment of vehicle 100 to the portable device.” *Ikeda*,

[0073]. The “environment setup information item” consists of data that indicates a user’s preferences for the settings of specific “control units.” *Ikeda*, [0064]. Ex. C, ¶109.

6[b]: storing the change made to the adjusted at least one vehicle control in the user profile memory.

Ikeda discloses *storing the change made to the adjusted at least one vehicle control in the user profile memory*. Ex. C, ¶¶112-116. For example, *Ikeda* discloses that the “environment setup information is stored in the storage unit.” *Ikeda*, [0073].

Ikeda’s “storage unit 22” is a *user profile memory*. Ex. C, ¶113.

Ikeda’s “environment setup information item” consists of data that captures “the user’s external operation in the vehicle 100,” which is *the change made to the adjusted at least one vehicle control*. Ex. C, ¶114.

Thus, *Ikeda* discloses *storing the change made to the adjusted at least one vehicle control in the user profile memory*. Ex. C, ¶115. For example, *Ikeda* discloses that the “environment setup information is stored in the storage unit.” *Ikeda*, [0073].

6. Claim 7

7[a]: A method, comprising: determining a location inside a vehicle associated with a user;

Ikeda discloses *determining a location inside a vehicle associated with a user*. Ex. C, ¶¶117-18; *supra* § VI.A.1 (element 1[a]).

7[b]: determining at least one vehicle control associated with the location inside the vehicle;

Ikeda discloses *determining at least one vehicle control associated with the location inside the vehicle*. Ex. C, ¶¶119-20; *supra* § VI.A.1 (element 1[b]).

7[c]: referring to a user profile memory associated with the user for vehicle control settings;

Ikeda discloses *referring to a user profile memory associated with the user for vehicle control settings*. Ex. C, ¶¶121-22; *supra* § VI.A.1 (element 1[d]).

7[d]: determining, based at least partially on the vehicle control settings, to adjust the at least one vehicle control associated with the location inside the vehicle; and

Ikeda discloses *determining, based at least partially on the vehicle control settings, to adjust the at least one vehicle control associated with the location inside the vehicle*. Ex. C, ¶¶123-24; *supra* § VI.A.1 (element 1[e]).

7[e]: providing an adjustment output to a vehicle control system, wherein the vehicle control system is adapted to control the at least one vehicle control associated with the location inside the vehicle, wherein the at least one vehicle control is adjusted via the adjustment output to match the vehicle control settings in the user profile memory.

Ikeda discloses *providing an adjustment output to a vehicle control system, wherein the vehicle control system is adapted to control the at least one vehicle control associated with the location inside the vehicle, wherein the at least one vehicle control is adjusted via the adjustment output to match the vehicle control settings in the user profile memory*. Ex. C, ¶¶125-30; *see supra* § VI.A.1 (element 1[f]). For example, *Ikeda* discloses transmitting “the environment setup information item” to “control units.” *Ikeda*, [0080], [0087], [0093]; *see also Ikeda*, [0233], [0251], [0267]-[0269].

Ikeda’s discloses that its “control units” are *a vehicle control system adapted to control at least one vehicle control associated with the location inside the vehicle*. Ex. C, ¶126. For example, for the “control units 51-59” “the seat position controller 51 adjusts the position of the driver’s electric seat.” *Ikeda*, [0064].

Ikeda discloses that its “environment setup information item[s]” are *vehicle control settings*. Ex. C, ¶127. For example, *Ikeda* discloses that its “environment setup information item” is data “indicative of a driving environment of the associated user.” *Ikeda*, [0013]; Ex. C, ¶127.

Ikeda further discloses that its “environment setup information item” (*vehicle control settings*) is *in the user profile memory*. Ex. C, ¶128. For example, *Ikeda* discloses that the “environment setup information item” is “stored in the storage unit 22.” *Ikeda*, [0073].

Ikeda’s discloses that its “transmi[ssion]” of the “environment setup information item” is *an adjustment output* that instructs the “control units” to make adjustments to “set” the “driving environment for the driver.” *Ikeda*, [0093], [0013], [0079]-[0080]; Ex. C, ¶129.

7. Claim 8

8[a]: A non-transitory computer readable medium having instructions stored thereon that, when executed by a processor, perform a method comprising:

Ikeda discloses *a non-transitory computer readable medium having instructions stored thereon that, when executed by a processor, perform a method*. Ex. C, ¶¶131-35. For example, *Ikeda* discloses “the vehicle environment setup processing performed by the control unit 11 of the in-vehicle device 10.” *Ikeda*, [0079].

Ikeda discloses that its “in-vehicle device . . . includes a computer readable medium and program instructions.” *Ikeda*, [0015]. *Ikeda* further discloses that these “program instructions . . . caus[e] the computer to serve as driver identifying means and driving-environment setup means.” *Ikeda*, [0015].

Additionally, *Ikeda* discloses that its “in-vehicle device 10 possesses or includes a control unit 11” and that the “control unit 11 includes as a main element a microcomputer having a CPU, a ROM, a RAM, and executes various processing.” *Ikeda*, [0060]-[0061].

Given these disclosures, a POSITA would have understood that the driver identifying and environment setup processing in *Ikeda*, including all the claimed processing discussed below, is carried out by control unit 11 based on instructions stored in a non-transitory computer readable medium. Ex. C, ¶134.

8[b]: determining a location inside a vehicle associated with a user;

Ikeda discloses *determining a location inside a vehicle associated with a user*. Ex. C, ¶¶136-38; *supra* § VI.A.1 (element 1[a]).

Ikeda discloses that the “[d]etection of the driver to ride in the vehicle” is the first step of the “vehicle environment setup processing” as “performed by the control unit 11 of the in vehicle device 10,” acting via its CPU. *Ikeda*, [0079]. Again, the “in vehicle device . . . includes a computer readable medium and program instructions” that “caus[e] the computer to serve as driver identifying means.” *Ikeda*, [0015]. A skilled artisan would have understood that the “[d]etection of the driver to ride in the vehicle” (*determining a location inside a vehicle associated with a user*) is the first step to identifying a driver. Ex. C, ¶137. A skilled artisan would further have understood that the “in vehicle device 10’s” “program instructions” included instructions to detect the driver riding in the vehicle. Ex. C, ¶137.

8[c]: determining at least one vehicle control associated with the location inside the vehicle;

Ikeda discloses *determining at least one vehicle control associated with the location inside the vehicle*. Ex. C, ¶¶139-42; *supra* § VI.A.1 (element 1[b]).

Part of the “vehicle environment setup processing” (“performed by the control unit 11 of the in vehicle device 10”) is *determining at least one vehicle control* to adjust. *Ikeda*, [0079], [0093]. *Ikeda* discloses that its “control units 51-59 enable a setup (change) of the driving

environment according to a driver's liking," including by adjusting "seat position," "steering wheel position," "mirror attitude," "air-conditioning," "audio," "navigation," and the "information display." *Ikeda*, [0063]. *Ikeda*, thus, determines *at least one vehicle control* to adjust that is associated with the driver's seat location in the vehicle. Ex. C, ¶140.

Again, the "in vehicle device includes a computer readable medium and program instructions" that "caus[e] the computer to serve as . . . driving-environment setup means." *Ikeda*, [0015]. A skilled artisan would have understood that determining control units to adjust (*determining at least one vehicle control*) is part of setting up the driving-environment. Ex. C, ¶141. A skilled artisan would further have understood that the "in vehicle device 10's" "program instructions" included instructions to make this determination. Ex. C, ¶141.

8[d]: referring to a user profile memory associated with the user for vehicle control settings;

Ikeda discloses *referring to a user profile memory associated with the user for vehicle control settings*. Ex. C, ¶¶143-46; *supra* § VI.A.1 (element 1[d]).

Ikeda further discloses that obtaining "the environment setup information indicative of the driving environment for the driver" is part of the "vehicle environment setup processing" ("performed by the control unit 11 of the in-vehicle device 10"). *Ikeda*, [0091], [0079], Fig. 2.

Again, the "in-vehicle device includes a computer readable medium and program instructions" that "caus[e] the computer to serve as . . . driving-environment setup means." *Ikeda*, [0015]. A skilled artisan would have understood that obtaining the "environment setup information" (*referring to a user profile memory associated with the user for vehicle control settings*) is part of setting up the driving-environment. Ex. C, ¶145. A skilled artisan would further have understood that the "in vehicle device 10's" "program instructions" included instructions to make this determination. Ex. C, ¶145.

8[e]: determining, based at least partially on the vehicle control settings, to adjust the at least one vehicle control associated with the location inside the vehicle; and

Ikeda discloses *determining, based at least partially on the vehicle control settings, to adjust the at least one vehicle control associated with the location inside the vehicle*. Ex. C, ¶¶147-50; *supra* § VI.A.1 (element 1[e]).

Ikeda discloses that its “control units” operate “to reproduce the driving environment indicated by the environment setup information item” which is part of the “vehicle environment setup processing” (“performed by the control unit 11 of the in vehicle device 10”). *Ikeda*, [0064], [0093], [0079], Fig. 2.

Again, the “in vehicle device includes a computer readable medium and program instructions” that “caus[e] the computer to serve as . . . driving-environment setup means.” *Ikeda*, [0015]. A skilled artisan would have understood that “reproduc[ing] the driving environment indicated by the environment information setup item” (*determining, based at least partially on the vehicle control settings, to adjust the at least one vehicle control associated with the location inside the vehicle*) is part of setting up the driving-environment. Ex. C, ¶149. A skilled artisan would further have understood that the “in vehicle device 10’s” “program instructions” included instructions to adjust the driving environment based on the “environment setup information item.” Ex. C, ¶149.

8[f]: providing an adjustment output to a vehicle control system, wherein the vehicle control system is adapted to control the at least one vehicle control associated with the location inside the vehicle, wherein the at least one vehicle control is adjusted via the adjustment output to match the vehicle control settings in the user profile memory.

Ikeda discloses *providing an adjustment output to a vehicle control system, wherein the vehicle control system is adapted to control the at least one vehicle control associated with the*

location inside the vehicle, wherein the at least one vehicle control is adjusted via the adjustment output to match the vehicle control settings in the user profile memory. Ex. C, ¶¶151-54; *see supra* §§ VI.A.1, VI.A.6 (elements 1[f], 7[e]). For example, *Ikeda* discloses transmitting “the environment setup information item” to “control units.” *Ikeda*, [0080], [0087], [0093]; *see also Ikeda*, [0233], [0251], [0267]-[0269].

Ikeda discloses that transmitting “the environment setup information” “to various control units” is part of the “vehicle environment setup processing.” (“performed by the control unit 11 of the in vehicle device 10,” via its CPU). *Ikeda*, [0093], [0079], Fig. 2; *see also Ikeda*, [0233], [0251], [0267]-[0269].

Again, the “in vehicle device includes a computer readable medium and program instructions” that “caus[e] the computer to serve as . . . driving-environment setup means.” *Ikeda*, [0015]. A skilled artisan would have understood that transmitting “environment setup information item” to “various control units” is part of setting up the driving-environment. Ex. C, ¶153. A skilled artisan would further have understood that the “in vehicle device 10’s” “program instructions” included instructions to transmit the “environment setup information item” to “various control units.” Ex. C, ¶153.

- 8. Claim 9: The non-transitory computer readable medium of claim 8, wherein prior to providing the adjustment output, the method further comprises: determining a presence of the user inside the vehicle, wherein the adjustment output is provided based at least partially on determining the user is present in the location of the vehicle.**

Ikeda further discloses *wherein prior to providing the adjustment output, the method further comprises: determining a presence of the user inside the vehicle, wherein the adjustment output is provided based at least partially on determining the user is present in the location of the vehicle.* Ex. C, ¶¶155-58. For example, *Ikeda* discloses transmitting “an identification

information-sending request” to a user’s device “to detect that the user is in a state of riding the vehicle” as part of the “vehicle environment setup processing,” which is “performed by the control unit 11.” *Ikeda*, [0079]-[0080]; Fig. 2; *see supra* § VI.A.1 (element 1[c]).

For example, in the first embodiment, *Ikeda* discloses transmitting the “identification information-sending request” (in, for example, Step S101) (*determining a presence of the user inside the vehicle*) prior to transmitting “the environment setup information item . . . to various control units” (in, for example, Step S111) (*providing the adjustment output*). *Ikeda*, [0080], [0093], Fig. 2. *Ikeda* discloses that both these steps are part of the “vehicle environment setup processing,” which is “performed by the control unit 11.” *Ikeda*, [0093], [0079], Fig. 2.

Again, the “in-vehicle device . . . includes a computer readable medium and program instructions” that “caus[e] the computer to serve as . . . driving-environment setup means.” *Ikeda*, [0015]. A skilled artisan would have understood that transmitting the “identification information-sending request” (*determining a presence of the user inside the vehicle*) occurs prior to transmitting “the environment setup information item . . . to various control units” (*providing the adjustment output*). Ex. C, ¶157. A skilled artisan would further have understood that the “in vehicle device 10’s” “program instructions” included instructions to this effect. Ex. C, ¶157.

Ikeda discloses that its *providing the adjustment output* is based at least partially on *determining the user is present in the location inside the vehicle*. Ex. C, ¶157; *supra* § VI.A.1 (element 1[f]).

9. **Claim 11: The non-transitory computer readable medium of claim 8, wherein the at least one vehicle control includes one or more vehicle features such as a seat system, a steering control, a foot pedal control, a mirror position, and a display device, and wherein the vehicle control settings include at least one of a position, a sensitivity, an angle, and a movement, associated with the one or more vehicle features.**

Ikeda further discloses these limitations. Ex. C, ¶¶159-60; *supra* § VI.A.2-3 (claims 3 and 4).

10. **Claim 12**

- 12[a]: The non-transitory computer readable medium of claim 9, wherein determining the presence of the user inside the vehicle further comprises: detecting a person via at least one image sensor associated with the vehicle;**

Ikeda further discloses *wherein determining the presence of the user inside the vehicle further comprises: detecting a person via at least one image sensor associated with the vehicle*.

Ex. C, ¶¶161-64; *supra* § VI.A.4 (element 5[a]).

Ikeda discloses that “the in-vehicle device 10 detects the fact that the driver rides the vehicle 100.” *Ikeda*, [0409]. The “in-vehicle device 10” includes “a control unit 11,” and the “control unit 11” is the part of the “in-vehicle device 10” that “executes various processing,” including “[d]etection of the driver.” *Ikeda*, [0060]-[0061], [0079]-[0080]. Ex. C, ¶162.

Ikeda discloses *at least one image sensor*. For example, *Ikeda* discloses “detecting a facial feature point from the taken image of the camera 42.” *Ikeda*, [0062]. Ex. C, ¶163.

- 12[b]: identifying facial features associated with the person detected via the at least one image sensor; and**

Ikeda further discloses *identifying facial features associated with the person detected via the at least one image sensor*. Ex. C, ¶¶165-67. For example, *Ikeda* discloses the “personal

identification device 41” “detecting a facial feature point from the taken image of the camera 42.” *Ikeda*, [0062]; Ex. C, ¶165; *see supra* § VI.A.4 (element 5[b]).

Ikeda further discloses that the “control unit 11 is . . . capable of communicating with a personal identification device” and that “the control unit 11” performs “the vehicle environment setup processing,” including using the “personal information device 41” “to perform the driver determination processing in order to identify or select a facial feature information item of the driver.” *Ikeda*, [0061], [0079], [0087]-[0088]. Ex. C, ¶166.

12[c]: determining whether the identified facial features associated with the person match user characteristics stored in a memory.

Ikeda further discloses *determining whether the identified facial features associated with the person match user characteristics stored in a memory*. Ex. C, ¶¶168-71. For example, *Ikeda* discloses “template matching of the facial feature information items received from the in-vehicle device 10 with the image taken with the camera 42.” *Ikeda*, [0097]; Ex. C, ¶168; *see supra* § VI.A.4 (element 5[c]).

Ikeda discloses the “control unit 11,” which performs the “vehicle environment setup processing,” sending a “feature information-sending request . . . to request the portable device 20 to send facial feature information” (*user characteristics stored in a memory*). *Ikeda*, [0079], [0085]. Ex. C, ¶169.

Ikeda further discloses the “control unit 11” directing “the personal identification device 41” “to perform the driver determination processing.” *Ikeda*, [0079], [0087]. *Ikeda* specifically discloses that “the personal identification device 41 identifies the driver’s facial feature information item out of the facial feature information items received from the in-vehicle device 10, by template matching of the facial feature information items received from the in-vehicle

device 10 [(*user characteristics stored in a memory*)] with the image taken with the camera 42 [(*identified facial features*)].” *Ikeda*, [0097]. Ex. C, ¶170.

Again, the “in vehicle device . . . includes a computer readable medium and program instructions” that “caus[e] the computer to serve as driver identifying means.” *Ikeda*, [0015]. A skilled artisan would have understood that the additional steps of claim 12 would have been part of setting up the driver identifying means. Ex. C, ¶170. A skilled artisan would further have thus further understood that the “in vehicle device 10’s” “program instructions” would have included instructions to perform the additional steps of claim 12. Ex. C, ¶170.

11. Claim 13

13[a]: The non-transitory computer readable medium of claim 8, wherein the method further comprises: determining that the user made a change to the adjusted at least one vehicle control; and

Ikeda further discloses *wherein the method further comprises: determining that the user made a change to the adjusted at least one vehicle control*. Ex. C, ¶¶172-74; *supra* § VI.A.5 (element 6[a]).

Regarding this additional aspect of the method being performed by the processor when the instructions stored on the computer readable medium are executed, as explained above, *Ikeda* discloses that its “in-vehicle device . . . includes a computer readable medium and program instructions.” *Ikeda*, [0015]. *Ikeda* further discloses that these “program instructions . . . caus[e] the computer to serve as driver identifying means and driving-environment setup means.” *Ikeda*, [0015], [0061]; *see supra* § VI.A.7 (element 8[a]).

Ikeda’s “in-vehicle device 10 possesses or includes a control unit 11” and the “control unit 11 includes as a main element a microcomputer having a CPU, a ROM, a RAM, and executes various processing.” *Ikeda*, [0060]-[0061].

Ikeda discloses that “control unit 11 of the in-vehicle device 10,” acting via its CPU, performs the “vehicle environment setup processing” that includes “determin[ing] whether the driving environment is adjusted by the external operation of the driver who rides the vehicle” for the same reasons discussed for element 6[a]. *Ikeda*, [0254], Fig. 25B; Ex. C, ¶¶172-74; *supra* § VI.A.5 (element 6[a]).

13[b]: storing the change made to the adjusted at least one vehicle control in the user profile memory.

Ikeda further discloses *storing the change made to the adjusted at least one vehicle control in the user profile memory*. Ex. C, ¶¶176-78; *see supra* § VI.A.5 (element 6[b]).

Regarding this additional aspect of the method being performed by the processor when the instructions stored on the computer readable medium are executed, as explained above, *Ikeda* discloses that “the in-vehicle device 10,” containing the “control unit 11,” which acts via its CPU, “transmits the environment setup information item indicative of the current driving environment of the vehicle 100 [*(change made to the adjusted at least one vehicle control)*] to the portable device 10,” where “the portable device 20 stores the received environment setup information item in the storage unit 22” (*user profile memory*). Thus, based on the in-vehicle device 10’s transmission of “the environment setup information item . . . to the portable device 20,” “the portable device 20 stores the received environment setup information item in the storage unit 22.” *Ikeda*, [0073]. *Ikeda* thus discloses storing the change made to the adjusted at least one vehicle control in the user profile memory. Ex. C, ¶¶176-78.

12. Claim 14

14[a]: A vehicle control system, comprising: a profile identification module contained in a memory and executed by a processor of the vehicle control system,

Ikeda discloses a vehicle control system, comprising: a profile identification module contained in a memory and executed by a processor of the vehicle control system. Ex. C, ¶¶179-83; *see supra* § VI.A.7 (element 8[a]). For example, *Ikeda* discloses “the vehicle environment setup processing performed by the control unit 11 of the in-vehicle device 10.” *Ikeda*, [0079]; Fig. 2.

Ikeda discloses that its “in vehicle device . . . includes a computer readable medium and program instructions” (*profile identification module contained in a memory*). *Ikeda*, [0015]; Ex. C, ¶180. *Ikeda* further discloses that these “program instructions . . . caus[e] the computer to serve as driver identifying means and driving-environment setup means.” *Ikeda*, [0015].

Additionally, *Ikeda* discloses that its “in-vehicle device 10 possesses or includes a control unit 11” and that the “control unit 11 includes as a main element a microcomputer having a CPU, a ROM, a RAM, and executes various processing” (*executed by a processor of the vehicle control system*). *Ikeda*, [0060]-[0061].

Given these disclosures, a POSITA would have understood that the driver identifying and environment setup processing in *Ikeda*, including all the claimed processing discussed below, is carried out by a profile identification module contained in a memory and executed by a processor of the vehicle control system. Ex. C, ¶182.

14[b]: the profile identification module configured to determine a location inside a vehicle associated with a user,

Ikeda further discloses *the profile identification module configured to determine a location inside a vehicle associated with a user*. Ex. C, ¶¶184-85; *see supra* § VI.A.7 (element 8[b]).

14[c]: determine at least one vehicle control associated with the location inside the vehicle,

Ikeda further discloses *determine at least one vehicle control associated with the location inside the vehicle*. Ex. C, ¶186-87; *see supra* § VI.A.7 (element 8[c]).

14[d]: refer to a user profile memory associated with the user for vehicle control settings, and

Ikeda further discloses *refer to a user profile memory associated with the user for vehicle control settings*. Ex. C, ¶¶188-89; *see supra* § VI.A.1 (element 1[d]) and § VI.A.7 (element 8[d]).

14[e]: determine, based at least partially on the vehicle control settings, to adjust the at least one vehicle control associated with the location inside the vehicle, provide an adjustment output to the vehicle control system, wherein the vehicle control system is adapted to control the at least one vehicle control associated with the location inside the vehicle, wherein the at least one vehicle control is adjusted via the adjustment output to match the vehicle control settings in the user profile memory.

Ikeda further discloses *determine, based at least, partially on the vehicle control settings, to adjust the at least one vehicle control associated with the location inside the vehicle, provide an adjustment output to the vehicle control system, wherein the vehicle control system is adapted to control the at least one vehicle control associated with the location inside the vehicle, wherein the at least one vehicle control is adjusted via the adjustment output to match the vehicle control*

settings in the user profile memory. Ex. C, ¶¶190-91; *see supra* §§ VI.A.1, VI.A.6, VI.A.7
(elements 1[e], 1[f], 7[e], 8[e] and 8[f]).

13. **Claim 15: The vehicle control system of claim 14, wherein prior to providing the adjustment output, the profile identification module is further configured to determine a presence of the user inside the vehicle, wherein the adjustment output is provided based at least partially on determining the user is present in the location of the vehicle.**

Ikeda discloses these limitations. *See supra* § VI.A.1 (element 1[f]) and § VI.A.8 (claim 9); Ex. C, ¶¶192-93.

14. **Claim 17: The vehicle control system of claim 14, wherein the at least one vehicle control includes one or more vehicle features such as a seat system, a steering control, a foot pedal control, a mirror position, and a display device, and wherein the vehicle control settings include at least one of a position, a sensitivity, an angle, and a movement, associated with the one or more vehicle features.**

Ikeda discloses these limitations. *See supra* § VI.A.2-3 (claims 3 and 4); Ex. C, ¶¶194-95.

15. **Claim 18: The vehicle control system of claim 15, wherein, in determining the presence of the user inside the vehicle, the user the profile identification module is further configured to detect a person via at least one image sensor associated with the vehicle, identify facial features associated with the person detected via the at least one image sensor, and determine whether the identified facial features associated with the person match user characteristics stored in a memory.**

Ikeda discloses these limitations. *See supra* § VI.A.4 (elements 5[a]-[c]) and § VI.A.10 (elements 12[a]-[c]); Ex. C, ¶¶196-97.

16. **Claim 19: The vehicle control system of claim 14, wherein the profile identification module is further configured to determine that the user made a change to the adjusted at least one vehicle control, and store the change made to the adjusted at least one vehicle control in the user profile memory.**

Ikeda discloses these limitations. Ex. C, ¶¶198-99; *supra* §§ VI.A.5 (elements 6[a] and 6[b]), VI.A.11 (elements 13[a] and 13[b]), and VI.A.12 (element 14[a]).

17. **Claim 20: The vehicle control system of claim 14, wherein the profile identification module is further configured to determine a presence of the user inside the vehicle based at least partially on detecting a device associated with the user in an area of the vehicle, and wherein the adjustment output is provided based at least partially on determining the user is present in the location inside the vehicle.**

Ikeda discloses these limitations. *See supra* §§ VI.A.1 (elements 1[c] and 1[f]), § VI.A.8 (claim 9), and § VI.A.13 (claim 15); Ex. C, ¶¶200-201.

B. Ground 2: *Ikeda* renders obvious claims 2, 6, 10, 13, 16, and 19.

1. Claim 2

2[a]: The method of claim 1, wherein prior to determining the location inside the vehicle associated with the user the method further comprises: storing, in the user profile memory, information corresponding to locations inside the vehicle occupied by the user;

Ikeda discloses claim 1 from which claim 2 depends, as explained above. *Supra* § VI.A.1.

Ikeda further renders obvious *wherein prior to determining the location inside the vehicle associated with the user the method further comprises: storing, in the user profile memory, information corresponding to locations inside the vehicle occupied by the user*. Ex. C, ¶¶202-207. For example, *Ikeda* discloses that the “environment setup information is stored” in the “storage unit 22” (*user profile memory*) before the “vehicle environment setup processing.” *Ikeda*, [0073], [0080]; Ex. C, ¶203; *see supra* § VI.A.1 (element 1[d]).

It would have been obvious to a skilled artisan at the time of the alleged invention to modify *Ikeda* based on its own teachings and the knowledge of a skilled artisan to store, *in the user profile memory, information corresponding to locations inside the vehicle occupied by the user*. Ex. C, ¶204. *Ikeda* acknowledges that a known user—with settings saved for the driver’s seat—may sit “in any seat except the driver’s seat.” *Ikeda*, [0115]. Thus, a skilled artisan would have been motivated to store information corresponding to the adjustable components of multiple

seats (such as adjustable seats, temperature settings, etc.) in a vehicle for registered users so that a user's preferences can be applied regardless of where the user sits. Ex. C, ¶204.

A skilled artisan would have considered such modifications to *Ikeda* because they involved (A) combining prior-art elements according to known methods to yield predictable results (e.g., applying *Ikeda*'s hardware and software to identify a user and to save location-specific settings, simply extended to include an additional seat); (B) use of a known technique (e.g., *Ikeda*'s user identification and location-specific setting storage techniques) to improve similar devices in the same way (e.g., "any seat except the driver's seat"); (C) applying a known technique (e.g., *Ikeda*'s user identification and location-specific setting storage techniques) to a known device (e.g., "any seat except the driver's seat") ready for improvement to yield predictable results (the same result, except extended to the passenger seat). Ex. C, ¶205.

A skilled artisan would have had a reasonable expectation of success in extending *Ikeda*'s disclosure to store user settings for more than one location inside the vehicle. Ex. C, ¶206. For example, *Ikeda*'s disclosure of storing settings corresponding to the driver's seat is equally applicable to store settings corresponding to the passenger seats. Ex. C, ¶206.

2[b]: collecting vehicle control setting data associated with the user, wherein the vehicle control setting data includes at least one vehicle control setting made by the user in at least one of the locations inside the vehicle; and

Ikeda discloses *collecting vehicle control setting data associated with the user, wherein the vehicle control setting data includes at least one vehicle control setting made by the user in at least one of the locations inside the vehicle*. Ex. C, ¶¶208-210. For example, *Ikeda* discloses obtaining "the environment setup information item indicative of the current driving environment of the vehicle." *Ikeda*, [0073].

Ikeda discloses that the user sets the “driving environment . . . by the user’s external operation.” *Ikeda*, [0073]. *Ikeda* uses the term “external operation” to refer to a user’s manual adjustment of the “control units” such as seat position. *Ikeda*, [0064]; Ex. C, ¶209. Ultimately, “the portable device 20 stores the received environment setup information item in the storage unit 22.” *Ikeda*, [0073].

2[c]: storing the vehicle control setting data in the user profile memory.

Ikeda discloses *storing the vehicle control setting data in the user profile memory*. Ex. C, ¶211-12. For example, *Ikeda* discloses storing the “environment setup information item” (*vehicle control setting data*) “in the storage unit 22 of the portable device 20” (*user profile memory*). *Ikeda*, [0073], Fig. 6; *see supra* § VI.A.1 (element 1[d]).

2. Claim 6

6[a]: The method of claim 1, further comprising: determining that the user made a change to the adjusted at least one vehicle control; and

Ikeda discloses claim 1 from which claim 6 depends, as explained above. *Supra* § VI.A.1. *Ikeda* also discloses claim 6, as explained above. *Supra* § VI.A.5.

But to the extent it is found that *Ikeda* does not disclose *determining that the user made a change to the adjusted at least one vehicle control*, it would have been obvious to a skilled artisan at the time of the alleged invention to modify *Ikeda* based on its own teachings and the knowledge of a skilled artisan to *determine that the user made a change to the adjusted at least one vehicle control*. Ex. C, ¶213-20. A skilled artisan would have recognized that *Ikeda* discloses the hardware and software necessary to *determine that a user has made a change to at least one vehicle control*. Ex. C, ¶214. For example, *Ikeda* describes a specific action that the “in-vehicle device 10” performs after a user makes a change: the “in-vehicle device 10 . . . transmits the

environment setup information item indicative of the current driving environment of vehicle 100 to the portable device.” *Ikeda*, [0073]. Further, *Ikeda* discloses that its system has the ability to “determine[] whether the driving environment is adjusted by the external operation of the driver who rides the vehicle.” *Ikeda*, [0254].

A skilled artisan would have been motivated to use this disclosed hardware and software to *determine that the user made a change to the adjusted at least one vehicle control*. Ex. C, ¶216. For example, a skilled artisan would have recognized that a user might not want to keep the same setting saved for the entire time that the driver owns the vehicle. *Id.* At certain times, due to health, age, or simply changed preferences, a user may, for example, want the seat positioned at a slightly different angle. *Id.* In such cases, a skilled artisan would have been motivated to ensure that the system could detect that the user made changes to the adjusted vehicle control so that they could be stored for future use. *Id.*

A skilled artisan would have been aware of several well-known techniques for determining that the user has made a change to a setting, including having the user press a button to save new settings or causing the vehicle control unit to send a signal when it has been adjusted. Ex. C, ¶217; *see, e.g., He*, [0021] (“To set the preferred settings, the user adjusts the vehicle components, such as seats and mirror . . . to her preferred position or setting, the user then presses buttons located on the user interface [] to set the settings, and the controller [] stores the setting inputs in the user’s profile.”); *Cazanas*, 14:28-45 (“Once the adjustable elements on the vehicle [] are set and the settings are detected by the vehicle, the user may save a user profile on the vehicle For instance, the vehicle [] may have a user interface [] that allows a user to store the settings as a user profile. For instance, a touch screen on a navigation system may allow a user to access a menu that contains a button, or virtual button, that a user may depress to

indicate to the vehicle that the current positions of the adjustable elements should be saved as a user profile.”).

A variety of rationales show why a skilled artisan would have applied techniques for determining when adjustments to vehicle controls had been made, to *Ikeda*’s disclosure. For example, such modifications would have merely involved (A) combining prior-art elements according to known methods to yield predictable results (e.g., applying *Ikeda*’s hardware and software to determine changes made to vehicle control units); (B) use of a known technique (e.g., *Ikeda*’s determining changes made to vehicle control units) to improve similar devices in the same way (e.g., determining changes made to adjusted vehicle controls); (C) applying a known technique (e.g., *Ikeda*’s determining changes made to vehicle control units) to a known device (e.g., determining changes made to adjusted vehicle controls) ready for improvement to yield predictable results. Ex. C, ¶218.

A skilled artisan would have had a reasonable expectation of success in extending *Ikeda*’s disclosure to determine changes made to adjusted vehicle controls. Ex. C, ¶219. For example, *Ikeda*’s disclosure of determining that a user has made changes to vehicle control settings generally would be applicable to determining that a user has made changes to adjusted vehicle controls. Ex. C, ¶219.

6[b]: storing the change made to the adjusted at least one vehicle control in the user profile memory.

Ikeda discloses *storing the change made to the adjusted at least one vehicle control in the user profile memory*. Ex. C, ¶¶221-25. For example, *Ikeda* discloses that the “environment setup information is stored in the storage unit.” *Ikeda*, [0073].

Ikeda’s “storage unit 22” is a *user profile memory*. Ex. C, ¶222.

Ikeda's "environment setup information item" consists of data that captures "the user's external operation in the vehicle 100," which is *the change made to the adjusted at least one vehicle control*. Ex. C, ¶223.

Thus, *Ikeda* discloses *storing the change made to the adjusted at least one vehicle control in the user profile memory*. Ex. C, ¶224. For example, *Ikeda* discloses that the "environment setup information is stored in the storage unit." *Ikeda*, [0073].

3. Claim 10

10[a]: The non-transitory computer readable medium of claim 8, wherein prior to determining the location inside the vehicle associated with the user the method further comprises: storing, in the user profile memory, information corresponding to locations inside the vehicle occupied by the user;

Ikeda discloses claim 8 from which claim 10 depends, as explained above. *Supra* § VI.A.7.

Ikeda further renders obvious *wherein prior to determining the location inside the vehicle associated with the user the method further comprises: storing, in the user profile memory, information corresponding to locations inside the vehicle occupied by the user*. Ex. C, ¶¶226-28; *supra* § VI.B.1 (element [2a]).

10[b]: collecting vehicle control setting data associated with the user, wherein the vehicle control setting data includes at least one vehicle control setting made by the user in at least one of the locations inside the vehicle; and

Ikeda further discloses these limitations. Ex. C, ¶¶229-30; *supra* § VI.B.1 (element 2[b]).

10[c]: storing the vehicle control setting data in the user profile memory.

Ikeda further discloses these limitations. Ex. C, ¶¶231-233; *supra* § VI.B.1 (element 2[c]).

Again, the “in vehicle device . . . includes a computer readable medium and program instructions” that “caus[e] the computer to serve as . . . driving-environment setup means.” *Ikeda*, [0015]. A skilled artisan would have understood that the additional steps of claim 10 would have been part of setting up the driving-environment. Ex. C, ¶232. A skilled artisan would further have thus further understood that the “in vehicle device 10’s” “program instructions” would have included instructions to perform the additional steps of claim 10. Ex. C, ¶232.

4. Claim 13

13[a]: The non-transitory computer readable medium of claim 8, wherein the method further comprises: determining that the user made a change to the adjusted at least one vehicle control; and

Ikeda discloses claim 8 from which claim 13 depends, as explained above. *Supra* § VI.A.7 (claim 8). *Ikeda* also discloses claim 13, as explained above. *Supra* § VI.A.11 (claim 13).

Ikeda further renders obvious *wherein the method further comprises: determining that the user made a change to the adjusted at least one vehicle control*. Ex. C, ¶¶234-39; *supra* § VI.B.2 (element 6[a]).

For the same reasons articulated above regarding element 6[a], it would have been obvious to a skilled artisan at the time of the alleged invention to modify *Ikeda* based on its own teachings and the knowledge of a skilled artisan to *determine that the user made a change to the adjusted at least one vehicle control*. *Ikeda*, [0254], Fig. 25B; Ex. C, ¶¶234-39; *supra* § VI.B.2 (element 6[a]).

Regarding this additional aspect of the method being performed by the processor when the instructions stored on the computer readable medium are executed, as explained above, *Ikeda* discloses that its “in-vehicle device . . . includes a computer readable medium and program instructions.” *Ikeda*, [0015]. *Ikeda* further discloses that these “program instructions . . . caus[e]

the computer to serve as driver identifying means and driving-environment setup means.” *Ikeda*, [0015], [0061]; *see supra* § VI.A.7 (element 8[a]).

Ikeda’s “in-vehicle device 10 possesses or includes a control unit 11” and the “control unit 11 includes as a main element a microcomputer having a CPU, a ROM, a RAM, and executes various processing.” *Ikeda*, [0060]-[0061].

13[b]: storing the change made to the adjusted at least one vehicle control in the user profile memory.

Ikeda further discloses *storing the change made to the adjusted at least one vehicle control in the user profile memory*. Ex. C, ¶¶240-42; *see supra* § VI.A.5 (element 6[b]).

Regarding this additional aspect of the method being performed by the processor when the instructions stored on the computer readable medium are executed, as explained above, *Ikeda* discloses that “the in-vehicle device 10,” containing the “control unit 11,” which acts via its CPU, “transmits the environment setup information item indicative of the current driving environment of the vehicle 100 [*(change made to the adjusted at least one vehicle control)*] to the portable device 10,” where “the portable device 20 stores the received environment setup information item in the storage unit 22” (*user profile memory*). Thus, based on the in-vehicle device 10’s transmission of “the environment setup information item . . . to the portable device 20,” “the portable device 20 stores the received environment setup information item in the storage unit 22.” *Ikeda*, [0073]. *Ikeda* thus discloses storing the change made to the adjusted at least one vehicle control in the user profile memory. Ex. C, ¶¶240-42.

5. **Claim 16: The vehicle control system of claim 14, wherein prior to determining the location inside the vehicle associated with the user the profile identification module is further configured to store, in the user profile memory, information corresponding to locations inside the vehicle occupied by the user, collect vehicle control setting data associated with the user, wherein the vehicle control setting data includes at least one vehicle control setting made by the user in at least one of the locations inside the vehicle, and store the vehicle control setting data in the user profile memory.**

Ikeda discloses claim 14, from which claim 16 depends. *Supra* § VI.A.12 (claim 14).

Further, *Ikeda* renders obvious these limitations. *See supra* § VI.B1 (claim 2) and § VI.B.3 (claim 10); Ex. C, ¶¶243-45.

6. **Claim 19: The vehicle control system of claim 14, wherein the profile identification module is further configured to determine that the user made a change to the adjusted at least one vehicle control, and store the change made to the adjusted at least one vehicle control in the user profile memory.**

Ikeda discloses claim 14 from which claim 19 depends, as explained above. *Supra* § VI.A.12 (claim 14).

Ikeda renders obvious these limitations. Ex. C, ¶¶246-48; *supra* §§ VI.B.2 (elements 6[a] and 6[b]) and VI.B.4 (elements 13[a] and 13[b]).

C. Ground 3: *Ikeda* in view of *Hendry* renders obvious claims 6, 13, and 19.

1. Claim 6

6[a]: The method of claim 1, further comprising: determining that the user made a change to the adjusted at least one vehicle control; and

Ikeda discloses or renders obvious these limitations, as described above in Grounds 1 and 2. *Supra* §§ VI.A.5 and VI.B.2 (claim 6).

To the extent it is argued that *Ikeda* does not disclose or render obvious these limitations, they would have been obvious in further view of *Hendry*.

Hendry discloses *determining that the user made a change to the adjusted at least one vehicle control*. Ex. C, ¶¶249-58. For example, *Hendry* discloses that “a user may opt to change or add his or her personal settings after some time” and that if “the user does so, the user may be prompted by the user interface 122 to indicate if the adjusted settings of the one or more vehicle components are to be saved.” *Hendry*, [0031]. *Hendry* discloses that “if a user changes the settings of the seat 50, the user interface 122 displays a screen to the user asking whether the user would like the vehicle 10 to remember the seat settings.” *Hendry*, [0026]. Thus, *Hendry* discloses *determining that the user made a change to the adjusted at least one vehicle control*.

It would have been obvious to a skilled artisan to modify *Ikeda* to include *Hendry*’s teaching of determining that a user has made a change to an adjusted vehicle control. Ex. C, ¶252.

A skilled artisan would recognize that *Ikeda* and *Hendry* are complementary technologies that are combinable. Both references relate to vehicle control systems. Ex. C, ¶253; *Ikeda*, [0003] (“The present invention relate[s] to a driving-environment setup system which sets up a driving environment of a vehicle.”); *Hendry*, [0001] (“The present disclosure relates generally to a method and system for establishing user settings of vehicle components of a vehicle.”). Further, both references address the same problem: determining whether a recognized user has setting preferences and customizing a vehicle to match the recognized user’s preferences. Ex. C, ¶253; *Ikeda*, [0009] (“[I]t is an object of the present invention to provide a driving-environment setup system which can set the driving environment of a vehicle as a driving environment for a driver[.]”); *Hendry*, [0027] (“Once a vehicle component has received the personal settings, the vehicle component module will adjust the settings of the vehicle component in accordance with the personal settings associated with the device[.]”).

It would have been obvious to a skilled artisan at the time of the alleged invention to modify *Ikeda* to incorporate *Hendry*'s teaching of determining that a user has made a change to an adjusted vehicle control. Ex. C, ¶254. For example, a skilled artisan would have recognized that a user might not want to keep the same setting saved for the entire time that the driver owns the vehicle. Ex. C, ¶254. At certain times, due to health, age, or simply changed preferences, a user may, for example, want the seat positioned at a slightly different angle. Ex. C, ¶254. In such cases, a skilled artisan would have been motivated to ensure that the system could detect that the user made changes to the adjusted vehicle control so that they could be stored for future use. Ex. C, ¶254. In such cases, a skilled artisan would have been motivated to ensure that its system could detect that the user made changes to the adjusted vehicle control. Ex. C, ¶254. *Hendry* discloses that just such a motivation was known in the art. For example, *Hendry* notes that it "can be appreciated" that "a user may opt to change or add his or her personal settings after some time." *Hendry*, [0031]. A skilled artisan would further have known that determining changes have been made to a user's preferred vehicle settings was well known in the art. *See, e.g., Cazan*, claim 16 ("receiving, from the vehicle unit, a revised vehicle user profile based on adjustments made by the user while in the vehicle; and storing the revised vehicle user profile in association with the user's account").

Combining *Hendry*'s teaching with *Ikeda* would have been routine and conventional to a skilled artisan. Ex. C, ¶255. A skilled artisan would have considered modifying *Ikeda* with the teaching of *Hendry* to be an example of (A) combining prior-art elements according to known methods to yield predictable results (e.g., *Ikeda*'s vehicle setting system with *Hendry*'s teaching of determining that a user made a change to an adjusted vehicle control); (B) use of a known technique (e.g., *Hendry*'s teaching of determining that a user makes a change to an adjusted

vehicle control) to improve similar devices in the same way (e.g., *Ikeda*'s vehicle setting system); (C) applying a known technique (e.g., *Hendry*'s teaching of determining that a user makes a change to an adjusted vehicle control) to a known device (e.g., *Ikeda*'s vehicle setting system) ready for improvement to yield predictable results. Ex. C, ¶255.

A skilled artisan would have had a reasonable expectation of success in combining *Hendry*'s teaching of determining that a user has made a change to an adjusted vehicle control with *Ikeda*'s vehicle setting system. Ex. C, ¶256. As explained above, *Ikeda* itself discloses the functionality and information necessary to determine that a user has made a change to an adjusted vehicle control. Ex. C, ¶256. Further *Hendry* notes that, in the context of a vehicle setting system, "a user may opt to change or add his or her personal settings after some time." *Hendry*, [0031]. Thus, a skilled artisan would have found it obvious to incorporate *Hendry*'s teaching with *Ikeda*'s system. Ex. C, ¶257.

6[b]: storing the change made to the adjusted at least one vehicle control in the user profile memory.

Ikeda discloses these limitations, as fully described above in Ground 1. *Supra* § VI.A.5 (claim 6).

To the extent it is found that *Ikeda* does not disclose these limitations, they would have been obvious in further view of *Hendry*.

Hendry discloses *storing the change made to the adjusted at least one vehicle control in the user profile memory*. Ex. C, ¶¶259-65. For example, *Hendry* discloses that when the user changes an adjusted vehicle control, "the user may be prompted by the user interface 1221 to indicate if the adjusted settings of the one or more vehicle components are to be saved" and, if "the user responds affirmatively, the adjusted settings are saved in a datastore associated with the vehicle component." *Hendry*, [0031].

It would have been obvious to a skilled artisan to modify *Ikeda* to include *Hendry*'s teaching of storing the change made to the adjusted vehicle control in a user profile memory for all the same reasons it would have been obvious for element 6[a]. Ex. C, ¶262.

Further, combining *Hendry*'s teaching with *Ikeda* would have been routine and conventional to a skilled artisan. Ex. C, ¶263. A skilled artisan would have considered modifying *Ikeda* with the teaching of *Hendry* to be an example of (A) combining prior-art elements according to known methods to yield predictable results (e.g., *Ikeda*'s vehicle setting system with *Hendry*'s teaching of storing a change to an adjusted vehicle control); (B) use of a known technique (e.g., *Hendry*'s teaching of storing a change to an adjusted vehicle control) to improve similar devices in the same way (e.g., *Ikeda*'s vehicle setting system); (C) applying a known technique (e.g., *Hendry*'s teaching of storing a change to an adjusted vehicle control) to a known device (e.g., *Ikeda*'s vehicle setting system) ready for improvement to yield predictable results. Ex. C, ¶263.

A skilled artisan would have had a reasonable expectation of success in combining *Hendry*'s teaching of storing a change to an adjusted vehicle control with *Ikeda*'s vehicle setting system. Ex. C, ¶264. As explained above, *Ikeda* itself discloses the functionality and information necessary to store a change to an adjusted vehicle control. Ex. C, ¶264. Thus, a skilled artisan would have been found it obvious to incorporate *Hendry*'s teaching with *Ikeda*'s system. Ex. C, ¶264.

2. Claim 13

13[a]: The non-transitory computer readable medium of claim 8, wherein the method further comprises: determining that the user made a change to the adjusted at least one vehicle control; and

Ikeda discloses or renders obvious these limitations, as described above in Grounds 1 and 2. *Supra* §§ VI.A.11 and VI.B.4 (claim 13).

To the extent it is argued that *Ikeda* does not disclose or render obvious these limitations, they would have been obvious in further view of *Hendry*. Ex. C, ¶¶266-71.

Hendry notes that the “apparatuses and methods described herein may be implemented by one or more applications executed by one or more processors.” *Hendry*, [0038]. Specifically, *Hendry* notes that its “applications include processor-executable instructions that are stored on a non-transitory tangible computer readable medium.” *Hendry*, [0038]; *see Hendry*, [0037]. Thus, to the extent it is necessary to look to *Hendry* for *determining that the user made a change to the adjusted at least one vehicle control*, *Hendry* discloses this limitation as executed by a processor. Ex. C, ¶269.

Thus, since both *Ikeda* and *Hendry* disclose using a processor for operations involving determining that a user made a change to a vehicle control setting, a skilled artisan would have had a reasonable expectation of success in making this combination and would have been motivated to do so for all the reasons explained above. Ex. C, ¶270.

13[b]: storing the change made to the adjusted at least one vehicle control in the user profile memory.

Ikeda discloses these limitations, as described above in Ground 1. *Supra* § VI.A.11 (claim 13).

To the extent it is argued that *Ikeda* does not disclose these limitations, they would have been obvious in further view of *Hendry*. Ex. C, ¶¶272-76.

Again, *Hendry* notes that its teachings are implemented using “one or more processors” that execute “instructions that are stored on a non-transitory tangible computer readable medium.” *Hendry*, [0038]; *see Hendry*, [0037]. Thus, to the extent it is necessary to look to *Hendry* for *storing the change made to the adjusted at least one vehicle control in the user profile memory*, *Hendry* discloses this limitation as executed by a processor. Ex. C, ¶274.

Thus, since both *Ikeda* and *Hendry* disclose using a processor for operations involving storing a change made to an adjusted vehicle control in a user profile memory, a skilled artisan would have had a reasonable expectation of success in making this combination—and would have been motivated to do so for all the reasons explained above. Ex. C, ¶275.

3. Claim 19: The vehicle control system of claim 14, wherein the profile identification module is further configured to determine that the user made a change to the adjusted at least one vehicle control, and store the change made to the adjusted at least one vehicle control in the user profile memory.

Ikeda discloses or renders obvious these limitations, as described above in Grounds 1 and 2. *Supra* §§ VI.A.16 and VI.B.6 (claim 19).

To the extent it is argued that *Ikeda* does not disclose or render obvious these limitations, they would have been obvious in further view of *Hendry*. Ex. C, ¶¶277-79; *supra* §§ VI.C.1 (elements 6[a] and 6[b]) and VI.C.2 (elements 13[a] and 13[b]).

VII. CONCLUSION

For the foregoing reasons, Toyota requests reexamination and cancellation of claims 1-20 of the '296 patent.

Toyota is willing to provide appropriate assistance to permit the Examiner to address and decide the issues presented by this Request. As the M.P.E.P. explains, the Examiner may, when appropriate, cut and paste claim charts or other material within the Request to incorporate them within the body of an Office Action. M.P.E.P. § 2262. Toyota is, thus, through the undersigned counsel, available to provide the Examiner with a digital copy of this Request, or any portion of it, in response to a request by email or phone. Toyota also understands that the Examiner may, in appropriate circumstances, set forth specific rejections in an Office Action and incorporate by reference Toyota's reasons for the proposed rejections, if the Examiner agrees with the proposed rejections and reasons supporting them.

If there is any additional fee due in connection with this filing that is not already submitted herewith, please charge the fee to Deposit Account No. 06-0916.

Respectfully submitted,
FINNEGAN, HENDERSON, FARABOW,
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Dated: October 24, 2025

By: /Joshua L. Goldberg/
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Attachments: (1) Certificate of Service to Patent Owner
(2) Information Disclosure Statement Form PTO/SB/08
(3) Exhibits listed on page iii of this Request