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Paper 28
Date: October 21, 2025

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TOYOTA MOTOR CORP.,
Petitioner,

v.

EMERGING AUTOMOTIVE LLC,
Patent Owner.

IPR2024-00786
Patent 9,171,268 B1

Before GEORGIANNA W. BRADEN, FRANCES L. IPPOLITO, and JASON M. REPKO, *Administrative Patent Judges.*

IPPOLITO, *Administrative Patent Judge*.

DECISION
Final Written Decision
Determining Some Challenged Claims Unpatentable
35 U.S.C. § 318(a)

I. INTRODUCTION

Toyota Motor Corp. ("Petitioner") filed a Petition (Paper 1, "Pet.") requesting *inter partes* review of claims 10–20 of U.S. Patent No. 9,171,268 B1 (Ex. 1001, "the '268 patent"). Emerging Automotive LLC ("Patent Owner") filed a Preliminary Response (Paper 6, "Prelim. Resp.").

With our authorization, Petitioner filed a Reply to Patent Owner's Preliminary Response (Paper 7) and Patent Owner filed a Sur-reply to Petitioner's Reply (Paper 9).

Applying the standard set forth in 35 U.S.C. § 314(a), we instituted an *inter partes* review as to all claims and grounds set forth in the Petition. Paper 11 ("Inst. Dec.").

After institution, Patent Owner filed a Patent Owner Response (Paper 13, "PO Resp."), and Petitioner filed a Reply (Paper 16, "Pet. Reply"). Patent Owner filed a Sur-reply (Paper 19, "PO Sur-reply"). An oral hearing was held on August 8, 2025. Paper 27 ("Tr.").

We have jurisdiction pursuant to 35 U.S.C. § 6. This Decision is a Final Written Decision under 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73 as to the patentability of the Challenged Claims. Petitioner bears the burden of proving unpatentability of the Challenged Claims. *Dynamic Drinkware, LLC v. Nat'l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015). To prevail, Petitioner must prove unpatentability by a preponderance of the evidence. *See* 35 U.S.C. § 316(e) (2018); 37 C.F.R. § 42.1(d) (2021).

Having reviewed the arguments and the supporting evidence, we determine that Petitioner has shown, by a preponderance of the evidence, that claims 10, 11, 13, 14, 15, and 16 the '268 patent are unpatentable. We further determine that Petitioner has not shown by a preponderance of the

evidence that claims 12, 17, 18, 19, and 20 of the ’268 patent are unpatentable.

A. Real Parties in Interest

Petitioner identifies Toyota Motor Corp., Toyota Motor North America, Inc., and Toyota Motor Sales, U.S.A., Inc. as the real parties-in-interest. Pet. 76. Patent Owner identifies Emerging Automotive LLC as the real party-in-interest. Paper 4 (Patent Owner’s Mandatory Disclosures), 2.

B. Related Matters

The parties indicate that the ’268 patent has been asserted in the following district court litigation: *Emerging Automotive LLC v. Toyota Motor North America, et al.*, 2:23-cv-00434 (E.D. Tex.). Pet. 76; Paper 4, 2. Petitioner further indicates that this case has been consolidated for pretrial issues with: *Emerging Automotive LLC v. Kia Corp.*, No. 2:23-cv-00437-JRG (E.D. Tex.). Pet. 76.

C. The ’268 patent

The ’268 patent “relates to systems and methods for managing user profiles for vehicles and exchange of information with cloud-based processing systems.” Ex. 1001, 1:32–34. In some embodiments, the ’268 patent discloses that a “user profile defines one or more settings that are preferred to be set in vehicles if the vehicles support the settings.” *Id.* at 2:61–63. Figure 1, reproduced below, is a diagram illustrating how roles are associated with profiles settings for a vehicle. *Id.* at 5:15–16.

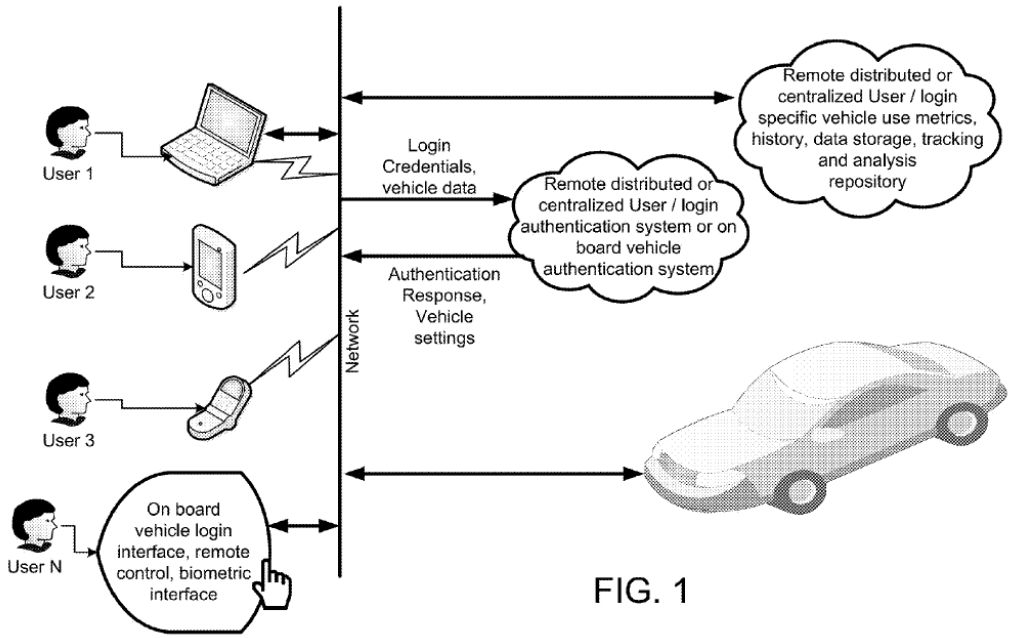


FIG. 1

Figure 1, above, shows that different users can use different methods to interact with a vehicle login system. *Id.* at 14:56–57. After successful authentication or login, the user is allowed to operate the vehicle in which the vehicle "has [the user's] vehicle settings applied to it and the user is allowed to operate the vehicle." *Id.* at 15:1–3.

Figure 10, reproduced below, is a diagram illustrating a validation method, such as a biometric validation, for enabling a profile on a vehicle. *Id.* at 5:26–27.

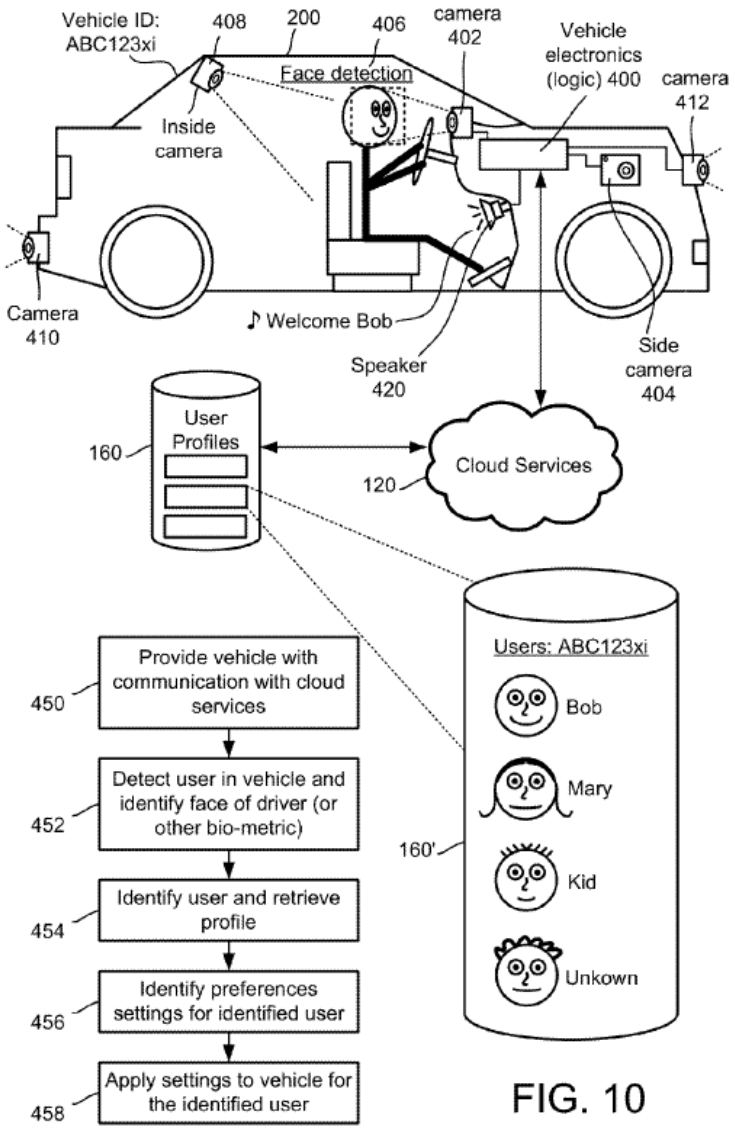


FIG. 10

Figure 10, above, shows user Bob entering shared vehicle 200. *Id.* at 19:22–23. User identification is via camera 402 and with verification of the user to drive vehicle 200 from a shared network. *Id.* at 19:24–27. Once the user has been verified, the user's preferences and settings for the vehicle can be set automatically. *Id.* at 19:27–30. The '268 patent discloses that cloud services 120 allows communication with user profiles 160 which can "include specific profiles for registered users" such as those users belonging to the group ABC123xi in this example. *Id.* at 19:47–53. Figure 10 also

shows the process for communicating between vehicles, users, and cloud services which includes operation 450 in which the vehicle communicates with cloud services, operation 452 in which the user is detected, operation 454 in which the user is identified and the user's profile is automatically retrieved from cloud services and user profile 160, operation 456 in which the user's preferences settings is identified from the database, and then operation 458 in which the settings are applied. *Id.* at 19:63–20:11. According to one embodiment in the '268 patent, vehicle settings "can include, for example, temperature, radio settings, seat settings, meter settings, air settings, etc." *Id.* at 18:44–46. The '268 patent further discloses that "[i]n one example, the profile is associated with a plurality of vehicle types and the method includes detecting a violation of a setting or an incompatible setting in the profile that is user defined via the user account." *Id.* at 1:66–2:2.

D. Challenged Claims

Petitioner challenges claims 10–20. Pet. 1. Claims 10 and 20 are independent claims. Claim 10 and 20 are reproduced below with Petitioner's identifiers in brackets, which do not impact our analysis (*id.* at 19–32, 63–72):

> 10. [10preamble] A method, comprising,
>
> [10a] receiving, at a server, information for a user profile of a user, the user profile defining one or more settings that are preferred to be set in vehicles if the vehicles support the settings;
>
> [10b] identifying a selected vehicle for applying the user profile, the selected vehicle having a plurality of settable settings, the selected vehicle being one of a plurality of vehicles identified as available by the server;

[10c] determining, by the server, applicable settings for the selected vehicle, the applicable settings being settings that are preferred to be set as identified from the user profile and are compatible with settings that are settable in the selected vehicle; and

[10d] sending, by the server, the applicable settings for programming to the selected vehicle, wherein the applicable settings are programmed on the selected vehicle after receipt by the selected vehicle over a wireless connection,

[10e] wherein the method is executed by the server, the server including a processor;

[10f] wherein the selected vehicle includes vehicle electronics for applying the programming to cause the applicable settings to be activated on the selected vehicle and communication circuitry for communicating via the wireless connection.

Ex. 1001, 33:1–26.

20. [20preamble] A method for managing a user profile of a vehicle via a cloud processing system being accessible over the Internet and wherein the vehicle is provided with wireless communication logic for connecting to the Internet for accessing the cloud processing system, comprising,

[20a] accessing the cloud processing system by the vehicle, the user profile having user settings for the vehicle, wherein certain of the user settings are determined to be compatible for use with the vehicle;

[20b] communicating to the cloud processing system by the vehicle, changes to user settings, the cloud processing system processing the changes and other changes to the user settings to learn behavior associated with the changes to the user settings; and

[20c] receiving by the vehicle, from time to time, automatic changes to the user settings of the vehicle, wherein a repeat pattern of the changes is qualified as learned behavior before the automatic changes are sent to the vehicle for programming on the vehicle, wherein the user profile is

configured to be updated to account for the automatic changes made to the user settings of the vehicle,

[20d] wherein electronics of the vehicle enable connection of the vehicle to the Internet for enabling the accessing of the user profile, the communicating of changes and the receiving of the automatic changes, to and from, the cloud processing system, wherein the cloud processing system is accessible by vehicles having predefined access credentials, the method being executable by a processor;

[20e] wherein user settings for the user profile include one or more of radio settings, or user interface settings, or temperature settings, or air settings, or display settings, or speed settings, or internet settings, or pairing settings, or remote access settings, or home control settings, or audio settings, or entertainment settings, or map data settings, or heating settings, or payment settings, or sub-user settings, or key fob settings, or user ID settings, or biometric settings, or fingerprint settings, or eye scan settings, or role settings, or administrator settings, or login settings, or location based settings, or tracking settings, or calendar settings, or vehicle mode settings, or operational settings, or combinations of two or more settings, or learned settings from user said learned behavior, or seat settings, or automatic payment settings, or combinations of two or more thereof.

Id. at 34:43–35:21.

E. Prior Art and Asserted Challenges to Patentability

Petitioner asserts that claims 10–20 would have been unpatentable on the following challenges:

Claim(s) Challenged	35 U.S.C. §[1]	Reference(s)/Basis
10, 11, 13, 15–19	102	Xiao[2]
10, 11, 13, 15–19	103	Xiao, Hayashi[3, 4]
12	103	Xiao, Patenaude[5]
12	102	Xiao, Hayashi, Patenaude
14	103	Xiao, Singh[6]
14	103	Xiao, Hayashi, Singh
20	103	Xiao, Hayashi, Patenaude

Pet. 3. Petitioner also relies on the Declarations of Kevin C. Almeroth, Ph.D. (Exs. 1009, 1026). Patent Owner relies on the Declarations of Sam Malek, Ph.D. (Exs. 2001, 2011).

[1] Amendments to 35 U.S.C. §§ 102 and 103 enacted by the Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) ("AIA") took effect on March 16, 2013. The '268 patent issued from an application filed in October 2013, asserting priority as a continuation-in-part of US Patent Application No. 13/452,882, filed on April 22, 2012, and as a continuation of US Patent Application No. 13/842,158, filed on March 15, 2013. The '268 patent further asserts priority to US Provisional Patent Application No. 61/745,729 (filed on December 25, 2012), and US Provisional Patent Application No. 61/478,436 (filed on April 22, 2011). *See* Ex. 1001, codes (22), (60), and (63). We apply the pre-AIA versions of §§ 102 and 103 here, but note that the outcome does not depend on whether the pre-AIA or AIA versions of §§ 102 and 103 are applied.

[2] U.S. Patent Application Publication No. 2012/0164989 A1, published June 28, 2012 (Ex. 1010) ("Xiao").

[3] JP Patent Application Publication No. 2012-076627 A, published Apr. 19, 2012 (Ex. 1013) ("Hayashi").

[4] Petitioner provides an English-language translation preceding the original Japanese-language publication of Hayashi, together as one exhibit. Ex. 1013. We refer to the English-language translation therein.

[5] U.S. Patent Application Publication No. 2006/0136106 A1, published June 22, 2006 (Ex. 1011) ("Patenaude").

[6] U.S. Patent Application Publication No. 2007/0255464 A1, published Nov. 1, 2007 (Ex. 1012) ("Singh").

II. PRINCIPLES OF LAW

A. Priority of Filing Date

"[A] patent application is entitled to the benefit of the filing date of an earlier filed application only if the disclosure of the earlier application provides support for the claims of the later application, as required by 35 U.S.C. § 112." *PowerOasis, Inc. v. T-Mobile USA, Inc.*, 522 F.3d 1299, 1306 (Fed. Cir. 2008). "To satisfy the written description requirement [in § 112,] the disclosure of the prior application must 'convey with reasonable clarity to those skilled in the art that, as of the filing date sought, [the inventor] was in possession *of the invention*.'" *Id.* (alteration in original) (quoting *Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555, 1563–64 (Fed. Cir. 1991)).

Although the burden of proof for showing unpatentability remains on a petitioner, the patent owner may have a burden of production. A patent owner has the burden for showing it is entitled to priority. *Dynamic Drinkware, LLC v. Nat'l Graphics, Inc.,* 800 F.3d 1375, 1379 (Fed. Cir. 2015) (discussing *Tech. Licensing Corp. v. Videotek, Inc.*, 545 F.3d 1316, 1326–27 (Fed. Cir. 2008)); *see also In re Magnum Oil Tools Int'l, Ltd.*, 829 F.3d 1364, 1376 (Fed. Cir. 2016) ("[A] patentee bears the burden of establishing that its claimed invention is entitled to an earlier priority date than an asserted prior art reference.").

B. Anticipation Under 35 U.S.C. § 102

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631(Fed. Cir. 1987). The elements must be arranged as required by the

claim, but this is not an *ipsissimis verbis* test, i.e., identity of terminology is not required. *In re Bond*, 910 F.2d 831 (Fed. Cir. 1990).

C. Obviousness Under 35 U.S.C. § 103

In *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1 (1966), the Supreme Court set out a framework for assessing obviousness under § 103 that requires consideration of four factors: (1) the "level of ordinary skill in the pertinent art," (2) the "scope and content of the prior art," (3) the "differences between the prior art and the claims at issue," and (4) "secondary considerations" of non-obviousness such as "commercial success, long-felt but unsolved needs, failure of others, etc." *Id.* at 17–18. "While the sequence of these questions might be reordered in any particular case," *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 407 (2007), the Federal Circuit has "repeatedly emphasized that an obviousness inquiry requires examination of all four Graham factors and that an obviousness determination can be made only after consideration of each factor." *Nike, Inc. v. Adidas AG*, 812 F.3d 1326, 1335 (Fed. Cir. 2016).

We note that, with respect to the fourth *Graham* factor, the current record in this proceeding does not include any argument or evidence directed to objective indicia of nonobviousness. Therefore, the analysis below addresses the first three *Graham* factors.

III. LEVEL OF ORDINARY SKILL IN THE ART

In determining the level of ordinary skill in the pertinent art, we consider the type of problems encountered in the art, the prior art solutions to those problems, the rapidity with which innovations are made, the sophistication of the technology, and the educational level of active workers in the field. *Custom Accessories, Inc. v. Jeffrey-Allan Indus. Inc.*, 807 F.2d

955, 962 (Fed. Cir. 1986); *Orthopedic Equip. Co. v. U.S.*, 702 F.2d 1005, 1011 (Fed. Cir. 1983).

Petitioner contends that a person of ordinary skill in the art ("POSITA") at the time of the invention of the '268 patent "would have had at least a Bachelor's degree in electrical engineering, computer science, or closely related field, with at least two-to-four-years-experience in cloud services for settings customization, or a Master's degree in electrical engineering, computer science, or equivalent." Pet. 12 (citing Ex. 1009 ¶ 82).

Patent Owner does not address the level of ordinary skill in the art. *See, generally* PO Resp.

For purposes of this Decision, we adopt Petitioner's proposal because it is reasonable and consistent with the prior art. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001) (the prior art may reflect an appropriate level of skill in the art).

IV. CLAIM CONSTRUCTION

We apply the same claim construction standard "used in the federal courts, in other words, the claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. [§] 282(b)," which is articulated in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). 83 Fed. Reg. 51,340, 51,358 (Oct. 11, 2018) (amending 37 C.F.R. § 42.100(b) effective November 13, 2018) (now codified at 37 C.F.R. § 42.100(b) (2019)). Under the *Phillips* standard, the "words of a claim are generally given their ordinary and customary meaning," which is "the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application." *Phillips*, 415 F.3d at 1312–13.

Patent Owner proposes constructions for claims 10 and 20. PO Resp. 7–19. We address those constructions below.

A. "determining, by the server, applicable settings for the selected vehicle, the applicable settings being settings that are preferred to be set as identified from the user profile and are compatible with settings that are settable in the selected vehicle [10c]"

Limitation [10c] recites: "determining, by the server, applicable settings for the selected vehicle, the applicable settings being settings that are preferred to be set as identified from the user profile and are compatible with settings that are settable in the selected vehicle." Ex. 1001, 33:11–15.

Patent Owner argues that the parties have agreed in the district court proceeding that claim element [10c] requires the server to perform a compatibility check. PO Resp. 8 (citing Ex. 2017). Patent Owner further argues that the specification and Applicant's amendments during prosecution support the agreed upon construction in the district court and that Petitioner should not be allowed to take an inconsistent position here. *Id.* at 8–16. Patent Owner directs us to claim 14, which depends from claim 10. *Id.* at 11–13. Patent Owner asserts that claim 14 recites that "determining of the applicable settings . . . includes performing a mapping between settings associated with the user profile and settings obtained from an automobile database." *Id.* at 11 (citing Ex. 1001, 33:61–64). Patent Owner contends that this is an example of the compatibility check performed by a server. *Id.* at 12.

Petitioner responds that claim 10 does not require a server-performed compatibility check. Pet. Reply 1–4. Petitioner contends that in the district court it agreed to a construction for the term, but does not agree that the server actively determines the applicable settings are compatible. *Id.* at 3–4. According to Petitioner, during prosecution, the Applicant was "careful" to

amend claim 10 so that it did not require a server compatibility check compared to the amendments made for claim 20. *Id.* at 5. Petitioner further contends that dependent claim 14's recitation of mapping indicates that claim 10's "compatibility" is broader than the mapping required in claim 14. *Id.* Petitioner further asserts that paragraphs 7, 18, and 75 of the Specification "merely state the bare result of determining 'an incompatible setting,'" but does not describe how the compatibility check is performed. *Id.* at 6 (citing Ex. 1001, 1:56–2:5, 2:59–3:5, 10:42–55). Petitioner adds that Patent Owner's construction excludes embodiments where compatibility is determined on vehicle electronics or user's devices. *Id.* (citing Ex. 1001, 7:65–8:18, 10:42–55, 20:65–21:5, 30:1–13).

Based on the full record and upon consideration of the parties' arguments, we agree with Patent Owner's proposed construction that requires the *server* to conduct a compatibility check.

We start with the express claim language. Claim 10 recites:

> determining, *by the server*, *applicable settings* for the selected vehicle, the *applicable settings being settings that* are preferred to be set as identified from the user profile and *are compatible with settings that are settable in the selected vehicle*.

Ex. 1001, 33:10–14 (emphases added). The express claim language requires that the *server* determine applicable settings. Those applicable settings, *determined by the server*, must also be *compatible* with vehicle settings. As such, the plain and ordinary meaning of the claim language expressly requires that the server make a determination of applicable settings that are defined as being compatible with vehicle settings.

Petitioner contends that Patent Owner's construction excludes embodiments described in the Specification. Pet. Reply 6. We disagree. Petitioner directs us to embodiments where compatibility is determined by

vehicle electronics or the user's portable electronics. *Id.* In this way, we understand that the '268 patent also discloses that the vehicle electronics or a user's device may be able to determine compatibility of settings. *See* Ex. 1001, 7:65–8:18, 20:65–21:5 (vehicle applying "custom settings of the user's portable device" by syncing the vehicle and user's device, without the involvement of a server), 30:1–13 (operations performed on vehicle electronics or jointly between vehicle electronics and other devices). Nonetheless, the disclosure of embodiments in which compatibility is determined by other electronics is not inconsistent with the disclosure that the server can determine compatibility as well. *See id.* at Fig. 7, claim 14. Claim 10 does not exclude other electronics from checking compatibility. Rather, the plain and ordinary language of claim 10 specifically recites "determining, by the server," which leaves no doubt that the determining step is done by the server and the claim scope encompasses that embodiment, but does not, at the same time, foreclose embodiments where other electronics may also determine compatibility.

Additionally, the Specification supports Patent Owner's position. Figure 7 of the '268 patent is provided below:

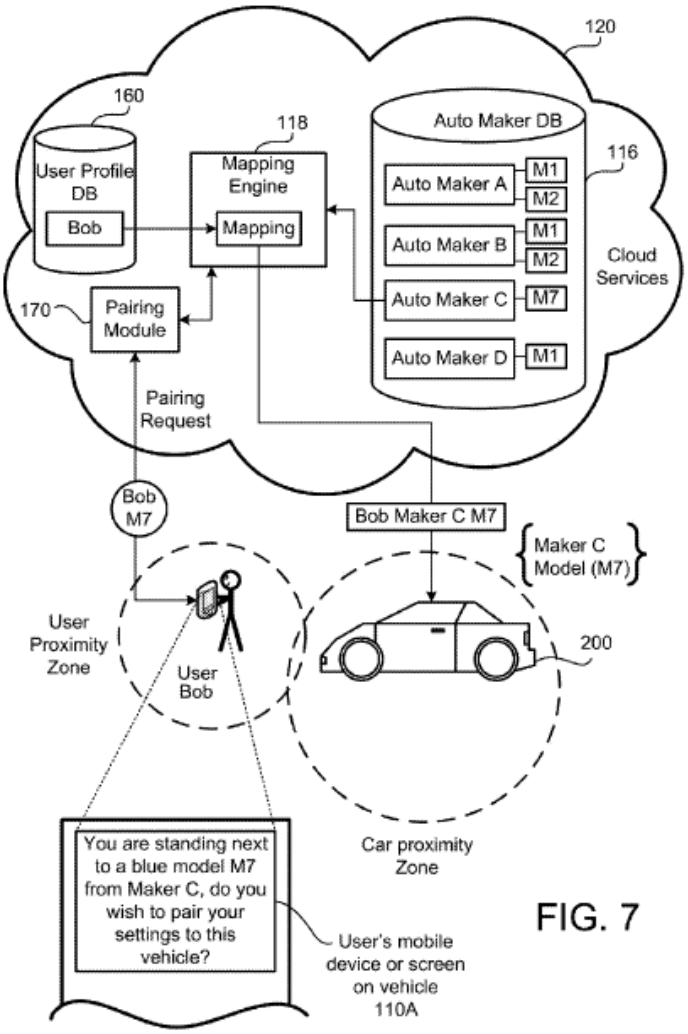


FIG. 7

Figure 7 shows an example of pairing a vehicle to a user profile. Ex. 1001, 5:22–25. As shown in Figure 7, User Bob may wish to use shared car 200. Once Bob has approached car 200, a pairing request may be sent to cloud services 120. *Id*. at 16:46–58. "The pairing request can include sending the model of the vehicle 200, that may have been obtained by the user's mobile device from the vehicle 200 directly." *Id*. at 16:58–61. Pairing module 170, can communicate with mapping engine 118 that determines information associated with car 200. *Id.* at 16:63–65. The '268 patent discloses that

> *mapping engine 118, in this example includes a map or that communicates with the automakers database to identify the settings, applications*, APIs, or modules that allow integration of Bob's user profile from the user profiles database 160 so that Bob's profile can be sent to car 200. In the illustrated example, the mapping engine, . . . of the mapper, will obtain Bob's profile 160 for cloud services and obtain vehicle information for the user interfaces of the vehicle desired for use by the user.

Id. at 17:3–11 (emphases added). Mapping engine 118 can transfer a user's profile to car 200. *Id.* at 17:12–13.

With this disclosure in mind, we further agree with Patent Owner that claim 14, which depends from claim 10, recites an example of how compatibility may be determined by a server. Claim 14 recites

> [t]he method of claim 10, wherein the *determining of the applicable settings for the selected vehicle* includes *performing a mapping between settings associated with the user profile and settings obtained from an automobile database*, wherein the user profile is deactivated on the selected vehicle when use of the vehicle is discontinued or when the user profile is switched to a new user profile or when the user profile is turned off or removed from the vehicle, and wherein upon deactivating settings of the selected vehicle are returned to a neutral setting.

Ex. 1001, 33:61–34:3 (emphasis added). As described, with regard to Figure 7, a mapping engine in the cloud services may identify settings that integrate a user's profile for use with a car. Ex. 1001, 17:3–13. As such, the mapping of settings and the user profile includes a compatibility check that is performed by the server to determine applicable settings.

Petitioner contends that claim 14, as a dependent claim, contains limitations not present in independent claim 10. Even so, we observe that claim 14 requires a specific type of compatibility check to be performed by the server, whereas claim 10 is broader on how the server carries out that

check. Thus, we find Patent Owner's position to be consistent with the plain and ordinary language expressly recited in either claim 10 or claim 14

Turning to the prosecution history, the '268 patent issued from the '314 Application. The Examiner issued a final office action on July 29, 2015 rejecting all pending claims 1–20 as anticipated by US Patent Publication No. 2012/0330494 ("Hendrix"). Ex. 1002, 167–173. Subsequently, the Applicant amended pending claim 10 to recite steps performed by the server, including determining that the applicable settings are compatible with settings that are settable in the selected vehicle:

> 10. (Currently amended) A method, comprising,
>
> receiving, at a server, information for a user profile of a user, the user profile defining one or more settings that are preferred to be set in vehicles if the vehicles support the settings;
>
> identifying a selected vehicle for applying the user profile, the selected vehicle having a plurality of settable settings, the selected vehicle being one of a plurality of vehicles identified as available by the server;
>
> determining, by the server, applicable settings for the selected vehicle, the applicable settings being settings that are preferred to be set as identified from the user profile and are compatible with settings that are settable in the selected vehicle; and
>
> sending, by the server, the applicable settings for programming to the selected vehicle, wherein the applicable settings are programmed on the selected vehicle after receipt by the selected vehicle over a wireless connection, wherein the method is executed by the [[a]] server ~~executing cloud processing~~, the server including a processor;
>
> wherein the selected vehicle includes vehicle electronics for applying the programming to cause the applicable settings to be activated on the selected vehicle and communication circuitry for communicating via the wireless connection.

Id. at 196. Furthermore, according to a summary of an Examiner interview, Applicant argued that the amendments distinguished over Hendrix because

the clarifying language defines the exchanges between the server and the vehicle such that the settings are compatible with a vehicle. *Id.* at 202. Applicant explained that

> [a]s now claimed, the applicable settings are settings that are preferred to be set as identified from the user profile and are compatible with settings that are settable in the selected vehicle. In addition, *claim 10 was amended for provide more clarity regarding the programming to cause the applicable settings to be activated*.

Id. at 203 (emphases added and omitted). The Notice of Allowance that followed on September 11, 2015 indicated that the amendments were sufficient to distinguish over the prior art of record. *Id.* at 213.

Considering the prosecution history, including the statements by both the Applicant and the Examiner, we do not agree with Petitioner that the Applicant was "careful to argue" that the applicable settings are compatible with settings in claim 10, but not that the server also determined compatibility. *See* Pet. Reply 4–5. Consistent with the express language of issued claim 10, and the submitted amendments, the Applicant sought to clarify that the *server* caused the applicable settings (that are defined as compatible) to be activated. Ex. 1002, 203. In other words, the server performs the determining step that includes a compatibility check.

Petitioner further contends that claim 10 is different from claim 20 in that claim 20 recites "wherein certain of the user settings *are determined to be compatible* for use with the vehicle." Ex. 1001, 34:48–51 (emphasis added). Nonetheless, we do not agree that the phrasing of claim 20 detracts from claim 10's express requirement that the server determines applicable settings that must also be compatible with settings that are settable in the

selected vehicle. In other words, the server makes a determination that considers compatibility as part of that step as recited in claim 10.

Additionally, the claim construction order in the related district court proceeding is consistent with our determination here. The parties agreed in that proceeding that the claim phrase at issue requires compatibility of settings. Ex. 2018, 29.

> **M. Term 13:**
>
> **"determining, by the server, applicable settings for the selected vehicle, the applicable settings being settings that are preferred to be set as identified from the user profile and are compatible with settings that are settable in the selected vehicle" ('268 Patent, Claim 10)**
>
> **"the user profile having user settings for the vehicle, wherein certain of the user settings are determined to be compatible for use with the vehicle" ('268 Patent, Claim 20)**

Plaintiff's Construction	Toyota's Construction
The parties agree these limitations require a **"compatibility check"** where the server / cloud based system determines whether settings are compatible with the vehicle. Otherwise, no construction necessary.	the server / cloud based system determines applicable settings by performing a **compatibility check** to determine which settings that are preferred to be set as identified from the user profile are able to be set in the selected vehicle

Id. Moreover, the district court determined that these claim terms will be given "plain and ordinary meaning" construction. *Id.* at 30. Here, we have determined that the plain and ordinary construction requires the server to perform a compatibility check per the express language recited in claim 10.

Turning to Dr. Almeroth's testimony, Petitioner directs us to paragraph 119 of its expert's declaration. Pet. Reply 4 (citing Ex. 1009 ¶ 119). Dr. Almeroth states there:

> As shown and described with respect to [Xiao's] Fig. 11 (reproduced and annotated above), in step 1108, the "server may generate a command to . . .

> customize the settings [of] one or more systems onboard the automobile 112 based on a profile associated with the operator . . . ." *Id.* at ¶ [0126]. Thus, Xiao discloses the single "determining" step recited in claim 10. *Claim 10 does not recite actively determining that the applicable settings are compatible with settings that are settable in the selected vehicle.*

Ex. 1009 ¶ 119 (emphases added, second, third, and further alternations in original). We, however, observe that this testimony is directed to Xiao's disclosure and does not explain the basis for the one sentence statement regarding claim construction of claim 10. In this way, Dr. Almeroth's testimony on claim construction is unsupported and unpersuasive.

Based on our review of both the intrinsic and extrinsic evidence, we adopt Patent Owner's proposed construction for limitation [10c] which is consistent and supported by the record. Moreover, we note that our determination is not based solely on Patent Owner's disclaimer(s) (*see* Pet. Reply 2, 4), but on the parties' arguments and the intrinsic and extrinsic evidence provided. Accordingly, we adopt Patent Owner's proposed construction of limitation [10c] that requires a compatibility check as part of the server's determination of applicable settings.

B. "accessing the cloud processing system by the vehicle, the user profile having user settings for the vehicle, wherein certain of the user settings are determined to be compatible for use with the vehicle. [20a]

Claim 20 recites "accessing the cloud processing system by the vehicle, the user profile having user settings for the vehicle, wherein certain of the user settings are determined to be compatible for use with the vehicle." Ex. 1001, 34:48–51.

The parties rely largely on the same arguments made with respect to claim [10c]. Petitioner, however, concedes that claim [20a] claims "an

actual determination of compatibility[.]" Pet. Reply 5; Tr. 7:4–11. We observe that the express language of limitation [20a] recites "determined to be compatible for use with the vehicle," which requires compatibility to be determined. Nonetheless, we note that claim [20a] does not recite that the server or cloud processing system performs the determination. Ex. 1001, 34:43–35:21. Moreover, as Petitioner points out, the '268 patent discloses that compatibility may be determined by the server, vehicle electronics, or the user device. Pet. Reply 6 (citing Ex. 1001, 7:65–8:18, 10:42–55, 20:65–21:5, 30:1–13).

As such, while we agree a compatibility check is required, we do not agree with Patent Owner that the cloud processing system must perform that check. Indeed, the "cloud processing system" is accessed but limitation [20a] does not expressly recited as performing the compatibility check. Ex. 1001, 34:43–35:21. We further note that our construction is consistent with the district court claim construction order that applies the plain and ordinary construction of this term.

C. Order of Limitations [10a], [10b], and [10c]

Limitations [10a]–[10c] are provided below:

10. [10preamble] A method, comprising,

[10a] receiving, at a server, information for a user profile of a user, the user profile defining one or more settings that are preferred to be set in vehicles if the vehicles support the settings;

[10b] identifying a selected vehicle for applying the user profile, the selected vehicle having a plurality of settable settings, the selected vehicle being one of a plurality of vehicles identified as available by the server;

[10c] determining, by the server, applicable settings for the selected vehicle, the applicable settings being settings that

> are preferred to be set as identified from the user profile and are compatible with settings that are settable in the selected vehicle.

Ex. 1001, 33:1–14.

Patent Owner contends that the plain language of claim 10 requires limitation [10a] to be performed before limitations [10b] and [10c]. PO Resp. 16. More specifically, Patent Owner argues that a POSITA would understand the logic and grammar of claim 10 require a sequential order of steps. *Id.* (citing Ex. 2011 ¶ 56–60). Patent Owner contends that limitation [10a] is a condition precedent to limitations [10b] and [10c], and that limitation [10a] provides the antecedent basis for "the user profile" recited in limitations 10[b] and 10[c]. *Id.* at 18. Patent Owner further argues that "step 10[b] does not allow the operation of 'identifying a selected vehicle for applying the user profile' until after the user profile information is received by the server in the preceding step, 10[a]. *Id.* In addition, Patent Owner contends that the determining step (limitation 10[c]) "cannot occur until after the 'settings that are preferred to be set as identified from the user profile' are received in step 10[a] and after identifying the selected vehicle with settable settings, which occurs in step 10[b]." *Id.* (emphasis omitted).

In its Reply, Petitioner argues that claim 10 does not require limitation [10a] to be performed before limitation [10b]. More specifically, Petitioner contends that "[s]imply invoking an antecedent is not enough to import an ordered sequence of steps." Pet. Reply 7 (citing *Cybersettle, Inc. v. Nat'l Arbitration Forum, Inc.*, 243 F. App'x 603, 609 (Fed. Cir. 2007); *Kaneka Corp. v. Xiamen Kingdomway Grp.*, 790 F.3d 1298, 1306–07 (Fed. Cir. 2015)). Petitioner further asserts nothing in limitations [10b] or [10c] logically references that limitation [10a] has already been performed. *Id.*

at 8. According to Petitioner, "[s]tep 10[b] recites "identifying a selected vehicle for applying the user profile," but this does not require using the 'information' received by the server in step 10[a]." *Id.* Petitioner also argues that the Specification discloses examples where the selected vehicle is identified after a server retrieves a user's profile. *Id.* at 9 (citing Ex. 1001, 16:57–62, 17:3–11); *see also id.* at 10 ("PO does not cite anything in the specification or prosecution history indicating the order of steps is important. Indeed, the intrinsic record indicates the opposite.") (citing Ex. 1001, 25:1–7, 30:1–31:48). For limitation [10c], Petitioner asserts that the "information" received by the server in limitation [10a] is not required and that whether limitation [10b] occurs before limitation [10c] is not at issue.

In the Sur-reply, Patent Owner adds that the sequential nature of the claim steps is apparent from the plain meaning of the language because to accomplish limitations [10b] and [10c], the information for the user profile in limitation [10a] must already be received. PO Sur-reply 10. Patent Owner further asserts that the antecedent relationship of limitation [10a] reinforces a sequence as a matter of grammar for limitations [10b] and [10c]. Patent Owner additionally points to the Specification as disclosing the sequential order of steps. *Id.* at 13–14 (citing Ex. 1001, 16:34–17:11).

1. Limitation [10b]

Limitation [10b] recites "identifying a selected vehicle *for applying the user profile*, the selected vehicle having a plurality of settable settings, the selected vehicle being one of a plurality of vehicles identified as available by the server[.]" Ex. 1001, 33:6–9 (emphasis added). At the outset, we note that the plain language of limitation [10b] recites identifying a selected vehicle "for applying *the* user profile." *Id.* The recitation of "the user profile" relies on antecedent basis from limitation [10a].

Petitioner contends that limitation [10b] does not contain "conditional language" for a specific order, and antecedent basis alone is not enough. Pet. Reply 7–8. Petitioner further relies on the example described above as disclosing a user device (rather than a server) that can perform limitation [10b]. *Id.* at 9.

We observe that the plain language of the claim does not require anything is done to that user profile in this step. Ex. 1001, 33:6–9. Rather, it is not until limitation [10c] that the server determines applicable settings using the user profile and selected vehicle settings, and requires that both the user profile has been received and selected vehicle has been identified. *Id.* at 33:11–14.

Therefore, despite Petitioner's arguments, the presence of the antecedent basis for "the user profile" does provide some support for Patent Owner's position that, grammatically, limitation [10b] occurs after limitation [10a]. Moreover, this understanding of limitation [10b] is supported by the Specification. We turn to the portions of the Specification relied upon by Petitioner. *See* Pet. Reply 9 (citing Ex. 1001, 16:57–62, 17:3–11). There, the '268 patent discloses that a user wishing to find a vehicle may access an application or website having access to an application to find a vehicle. Ex. 1001, 16:42–45. Then, a pairing request may be automatically sent by a user's device to cloud services when a user comes into close proximity with a vehicle. *Id.* at 16:54–58. The pairing request includes the model of the vehicle that may have been obtained by the user's mobile device directly, and "the pairing request . . . can include identification of the vehicle that the user has come in close proximity." *Id.* at 16:58–63. In this way, the '268 patent discloses that the user profile information has been received by the application, when the user accesses the

application, before the user selects a vehicle that is close in proximity. *See* Ex. 1001, 17:3–11.

Petitioner contends that

> [t]he specification only describes Fig. 14 in terms of a "stepped flow of events…" Ex.1001, 25:1–17. And the specification instructs that the claims are to be interpreted broadly, where "various computer-implemented operations" could be employed, without regard to their order. *Id.*, 30:1–31:48.

Pet. Reply 10.

We are mindful that general statements in the written description of the '268 patent do not broaden the scope of a claim narrowed by its own express language. *See Altiris v. Symantec Corp.,* 318 F.3d 1363, 1369–1370 (Fed. Cir. 2003) (discussing "[f]irst" whether the claim language itself limits the order of the steps in a method claim, and, "[i]f not," then assessing whether the "rest of the specification" does so). While claims are to be interpreted in light of the specification, all that appears in the specification is not necessarily within the scope of the claims and thus entitled to protection.

"As a general rule, unless the steps of a method claim actually recite an order, the steps are not ordinarily construed to require one." *Mformation Techs., Inc. v. Research in Motion Ltd.*, 764 F.3d 1392, 1398 (Fed. Cir. 2014) (cleaned up). "However, a claim requires an ordering of steps when the claim language, as a matter of logic or grammar, requires that the steps be performed in the order written, or the specification directly or implicitly requires an order of steps." *Id.* (cleaned up). Here, the claim language of limitation [10a] provides antecedent basis for limitation [10b], and the Specification bolsters Patent Owner's construction. As such, we agree with Patent Owner that limitation [10a] precedes limitation [10b].

2. Limitation [10c]

We observe first that Petitioner does not contest whether limitation [10b] comes before limitation [10c], but does dispute whether limitation [10a] must occur before limitation [10c]. Pet. Reply 10 ("[W]hether 10[b] occurs before 10[c] is not at issue in this IPR."). Petitioner contends that "information for a user profile of a user," recited in limitation [10a], is not a condition precedent because the "information" received by the server in limitation [10a] is not required in limitation [10c]. We understand Petitioner's position to be that settings identified from the "user profile" (recited in limitation [10c]) may not be the "information for a user profile" received by limitation [10a]. *Id.*

Based on the complete record, we determine that the plain language of limitation [10c] supports Patent Owner's understanding. Limitation [10c] recites "determining, by the server, applicable settings for the selected vehicle, the *applicable settings being settings that are preferred to be set as identified from the user profile and are compatible with settings that are settable in the selected vehicle*." Ex. 1001, 33:11–14 (emphases added).

In order to determine the applicable settings, these settings are set by the server as "identified from the user profile and are compatible with settings that settable in the *selected* vehicle," which logically and grammatically requires the user profile and vehicle settings to already be available for the server at this step. In other words, to determine the applicable settings from the user profile and vehicle settings, the server must already have this information.

The Patent Owner's position also is supported by the Specification, which discloses that mapping engine 118 will obtain User Bob's profile 160 for cloud services and obtain vehicle information for the user interfaces of

the vehicle desired for use by the user. Ex. 1001, 17:7–11. In operation, the ’268 patent discloses that mapping engine 118 includes a map or communicates with automakers database to identify the settings, applications, APIs, or modules that allow integration of User Bob’s profile from the user profiles database 160 so that the user’s profile can be sent to the vehicle. *Id.* at 17:3–7. In order to integrate or determine compatible settings for User Bob for a particular vehicle, the mapping engine must have both the user profile information and the selected vehicle.

“While there is a presumption that steps of a method claim are not required to occur in the order they are listed, that presumption can be overcome when ‘logic or grammar[ ] requires that the steps be performed in the order written, or the specification directly or implicitly requires an order of steps.’” *Telit Cinterion Deutschland GmbH v. 3G Licensing, S.A.*, No. 2023-1497, 2025 WL 401647, at *3 (Fed. Cir. Feb. 3, 2025) (citing *Mformation*, 764 F.3d at 1398; *see also Altiris*, 318 F.3d at 1369–70 (discussing a “two-part test for determining if the steps of a method claim that do not otherwise recite an order, must nonetheless be performed in the order in which they are written”: “First, we look to the claim language to determine if, as a matter of logic or grammar, they must be performed in the order written. If not, we next look to the rest of the specification to determine whether it directly or implicitly requires such a narrow construction. If not, the sequence in which such steps are written is not a requirement.” (emphasis, citations, and quotation marks omitted)).

For the reasons above, the language of limitation [10c] — “the applicable settings being settings that are preferred to be set *as identified from the user profile* and are compatible with settings that are *settable in the selected vehicle*” (Ex. 1001, 33:12–14) — indicates, “as a matter of logic

[and] grammar" (*Altiris*, 318 F.3d at 1369), that the "receiving . . . information for a user profile" and "identifying a selected vehicle" steps of limitations [10a] and [10b] must be performed prior to the "determining . . . applicable settings" recited in limitation [10c].

V. ANALYSIS

A. Summary of References

1. Xiao (Ex. 1010)

Xiao is a U.S. patent application publication titled "Methods and System for Providing a Wireless Automobile Key Service." Ex. 1010, code (54). Xiao's system "enables an operator of an automobile to use the operator's mobile device, such as a cell phone, to lock/unlock the automobile, to power on/off the automobile, or to affect other automobile operations." *Id.* ¶ 23. The system "may also communicate with the automobile, over a network, to apply automobile system settings based on preferences contained in an operator profile." *Id.*

Xiao's Figure 1 is a cloud diagram that "illustrates an exemplary wireless automobile key system" and is reproduced below. *Id.* ¶ 5.

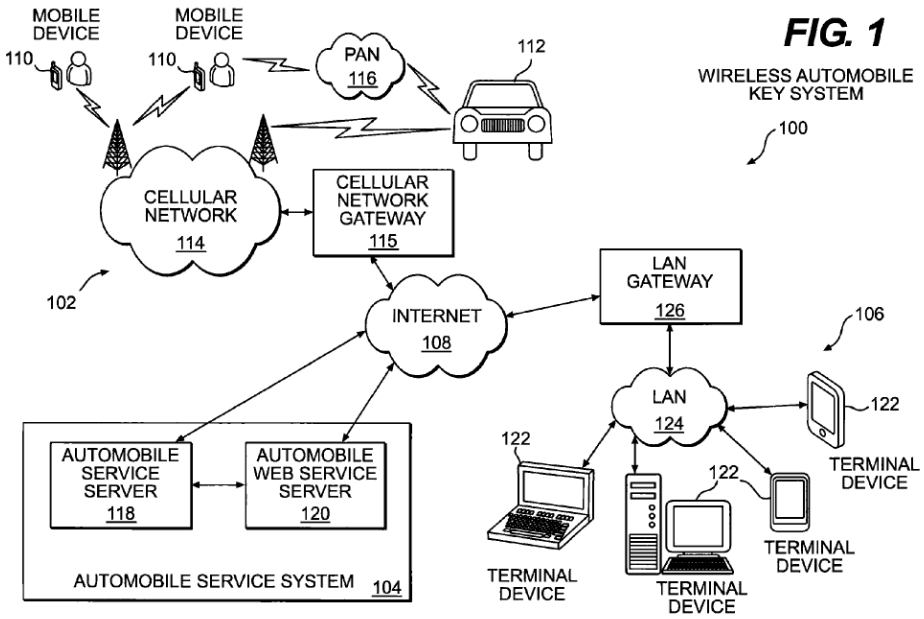


Figure 1, above, shows wireless automotive key system 100 including mobile system 102, automobile service system 104, and local system 106, all in communication over Internet 108. *Id.* ¶ 24. Mobile system 102 includes one or more mobile devices 110 and one or more automobiles 112 configured to communicate on cellular network 114. *Id.* Mobile system 102 also includes cellular network gateway 115 configured to facilitate communications between cellular network 114 and Internet 108. *Id.* Mobile device 110 may "communicate with one or more automobiles 112 over a personal area network (PAN) 116." *Id.* ¶ 25. Mobile device 110 "may download application 302 from automobile service system 104" and "an operator of automobile 112 may register for the . . . wireless automobile key service with automobile service system 104 and create an account for one or more mobile devices 110, automobile operators, and/or automobiles 112." *Id.* ¶ 31.

Automobile service system 104 includes automobile service server 118 and automobile web service server 120. *Id.* ¶ 59. Automobile

service server 118 includes storage device 506 which has wireless automobile key service information 600 having operator information 602, automobile information 604, and/or other account information. *Id.* ¶¶ 61, 65. Operator information 602 includes operator profile information 614. *Id.* ¶ 66. As an example, operator profile information 614 "may contain climate control system preferences for the operator for each automobile 112 on the account" and "[a]s an example, the climate control preferences may include the operator's desired heating or cooling temperature settings, desired air conditioning settings, desired vent settings, desired fan speed settings, desired window or mirror defroster settings, and/or other climate preferences for the automobile(s) 112." *Id.* ¶ 69. "Based on the desired automobile system settings indicated by the operator profile information 614, automobile service server 118 may retrieve appropriate command codes 632 for these systems from automobile command code information 606." *Id.* ¶ 103.

Xiao's Figure 4 is a diagram that "illustrates an exemplary automobile configured for use in the wireless automobile key system" and is reproduced below. *Id.* ¶ 8.

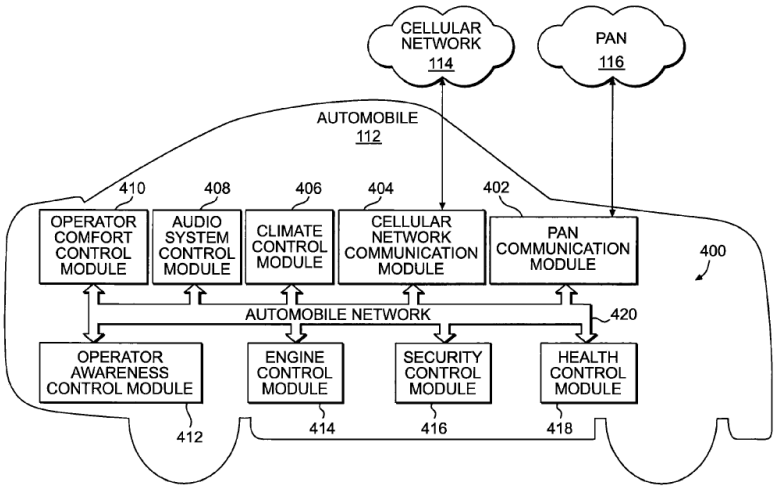


FIG. 4

Figure 4, above, shows onboard automobile system 400 including PAN communication module 402, cellular network communication module 404, climate system control module 406, radio system control module 408, operator comfort system control module 410, operator awareness system control module 412, engine system control module 414, security system control module 416, and health system control module 418, all interconnected via automobile network 420. *Id.* ¶ 38. Xiao's modules 402–418 "may embody one or more computers onboard automobile 112 and configured to perform or control various automotive functions." *Id.* ¶ 39. PAN communication module 402 "may be configured to control one or more communication devices of automobile 112 to communicate with mobile device 110 over PAN 116." *Id.* ¶ 40. Cellular communication module 404 "may be configured to control one or more communication devices of automobile 112 to communicate with over cellular network 114, in connection with the . . . wireless automobile key service." *Id.* ¶ 44.

2. Hayashi (Ex. 1013)

Hayashi is a JP patent application publication titled "Driving Support Apparatus." Ex. 1013, code (54). Hayashi "pertains to a drive support apparatus for communicating operating methods for vehicle functions." *Id.* ¶ 1. Hayashi explains that the functions of a car "depend[] on the vehicle model, model year, etc. of the vehicle, [which] generally differ for each vehicle" and thus, if "a driver driving a car that he/she does not normally use, such as a rental car or car share," the driver would need to "check[] manuals or the like to compare with the car he/she normally uses regarding differing operating methods for functions." *Id.* ¶ 2. Hayashi resolves this problem of different operating methods for functions of different cars by providing a driving support apparatus for a car sharing system. *Id.* at

Abstract, ¶¶ 4, 6–7, 11; Fig. 17. The apparatus includes a database of vehicle models with "functions according to each model" and corresponding "operating methods" with certain vehicles having "none" relative to certain functions or operating methods. *Id.* ¶ 29. Hayashi discloses, as an example, the car sharing system having a "scene determination portion 212 [that] graphically depicts the positions of a shift lever, a parking brake, or the like on display portion 250 and guides the operating method thereof by voice." *Id.* ¶ 123.

3. Patenaude (Ex. 1011)

Patenaude is a U.S. patent application publication titled "Method of Determining and Predicting Entertainment Selections for Telematics Units." Ex. 1011, code (54). Patenaude "relates to providing entertainment in a vehicle by determining an entertainment selection profile." *Id.* ¶ 1. Patenaude's method includes using telematics unit 120 to monitor entertainment selections in a mobile vehicle communication system (MVCS) 100. *Id.* ¶¶ 18, 42. To do this and as an example, an "algorithm searches the acquired data to determine if the FM radio is tuned to the same received FM frequency signal within a specified time frame each weekday for the specific user." *Id.* ¶ 70.

4. Singh (Ex. 1012)

Singh is a U.S. patent application publication titled "Car Intelligence." Ex. 1012, code (54). Singh explains that there have been concerns "about the security of the vehicle and the use of a single vehicle by different drivers" and that "[t]he preferences used by one driver are not suitable to the other driver." *Id.* ¶ 2. Thus, Singh remedies these concerns by providing a "vehicle with the operating system that allows multiple drivers to use the vehicle by authenticating them with their finger impressions which are saved

by means of databases installed in the operating system." *Id.* ¶ 3. Singh uses a "Controller Unit [that] will act like a central unit which will control the entire process from validating the finger impression of the driver to setting the attributes or preferences of the driver who will be driving the vehicle." *Id.* ¶ 34.

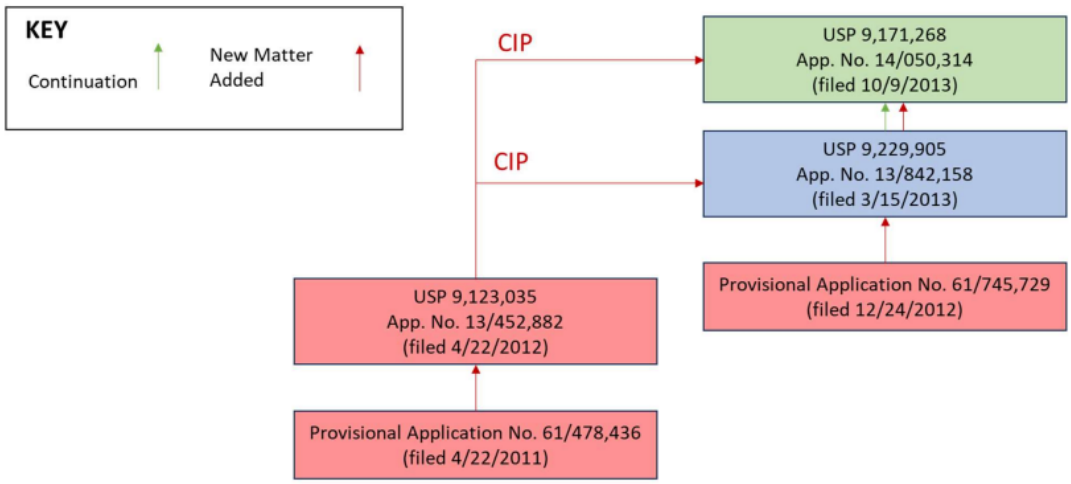
B. Priority

The '268 patent was filed on October 9, 2013 as a continuation of U.S. Patent Application No. 13/842,158[7] ("the '158 Application"). The '158 patent application was filed on March 15, 2013, and later issued as U.S. Patent No. 9,229,905 B1. *See* Ex. 1001, code (63), 1:9–14. The '268 patent also claims priority to U.S. Provisional Patent Application No. 61/745,729 ("the '729 Provisional") filed on December 24, 2012. *Id.*

Additionally, the '268 patent claims priority as a continuation-in-part application of U.S. Patent Application No. 13/452/882 ("the '882 Application), filed on April 22, 2012. *Id.* The '882 Application later issued as U.S. Patent No. 9,123,035 B2. The '268 patent further claims priority to U.S. Provisional Patent Application No. 61/478,436 ("the '436 Provisional") filed on April 22, 2011. *Id.*

For convenience, Petitioner's priority chart is provided below.

[7] The '158 Application is listed as Patent Application No. 13/8**24**,158 on the face of the '268 patent. Ex. 1001, code (63). However, this appears to be a typo and should refer to 13/8**42**,158. *See* Pet. 8 n.2; Ex. 1104.



Pet. 8. Petitioner's priority chart on page 8 of the Petition shows the priority applications listed on the face of the '268 patent and marks, with a red arrow, applications that Petitioner alleges added new matter. *Id.*

Petitioner argues that claims 10–20 are entitled only to the '268 patent's filing date of October 9, 2013. Pet. 8. Petitioner contends that "Applications 13/452,882, 61/478,436, do not disclose determining applicable settings that are 'preferred to be set as identified from the user profile and are compatible with settings that are settable in the selected vehicle,'" as recited in claim 10, or "compatible for use with the vehicle" as recited in claim 20. Pet. 9. Petitioner adds that the '729 Provisional discloses "[i]f the user's login is recognized, the system will apply all settings and use privileges to the vehicle prescribed by the login," which Petitioner contends is the opposite of the claimed "compatibility" feature. Pet. 10 (citing Ex. 1003, 39–40, ¶ 91). With regard to the '158 Application, Petitioner contends the "passing reference to 'third-party applications' that 'can be pre-identified by the site and displayed to the user if they are compatible with the particular vehicle selected'" does not provide sufficient written description. Pet. 10 (citing Ex. 1004, 24–25, ¶ 95).

Patent Owner does not contest Petitioner's arguments in the Patent Owner Response. *See, generally* PO Resp.

Given that Patent Owner has not contested the prior art status of Xiao, Patenaude, Singh, and Hayashi, we will not create a dispute between the parties where there is none presented. As stated in our Scheduling Order, any arguments not raised by Patent Owner in the response may be deemed waived. Paper 12, 8. We treat Xiao, Patenaude, Singh, and Hayashi as prior art references for the purposes of this decision.

C. Claims 10, 11, 13, and 15–19 as Allegedly Anticipated by Xiao

Petitioner contends that Xiao discloses every limitation of claims 10, 11, 13, and 15–19. Pet. 19–44. Patent Owner disagrees. PO Resp. 31–51.

1. Analysis of Independent Claim 10

a) Limitations [10a]–[10c]

Claim 10 recites a method that includes the steps of:

> [10a] receiving, at a server, information for a user profile of a user, the user profile defining one or more settings that are preferred to be set in vehicles if the vehicles support the settings;
>
> [10b] identifying a selected vehicle for applying the user profile, the selected vehicle having a plurality of settable settings, the selected vehicle being one of a plurality of vehicles identified as available by the server[.]
>
> [10c] determining, by the server, applicable settings for the selected vehicle, the applicable settings being settings that are preferred to be set as identified from the user profile and are compatible with settings that are settable in the selected vehicle;

Ex. 1001, 33:1–15.

(1) Petitioner's Contentions

For these limitations, Petitioner refers to Xiao's Figure 11, which is reproduced below:

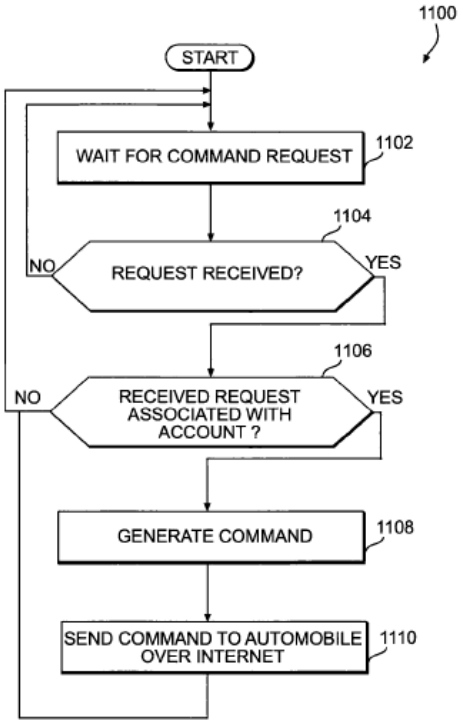


FIG. 11

Ex. 1010, Fig. 11. Figure 11 is a flowchart showing a method for processing wireless automobile key commands as described by Xiao. *Id.* ¶ 15. According to Petitioner, Xiao teaches that at step 1102, server 118 waits for a command request and monitors for a request from mobile device 110 or terminal device 122 to customize the settings of one or more systems of automobile 112 based on an operator profile. Pet. 21 (citing Ex. 1010 ¶ 124). Petitioner asserts that Xiao's "command request" and "command codes" are used to implement an operator's profile. *Id.*

Petitioner explains that Xiao's server may retrieve operator profile information for the operator using an operator ID or mobile ID. *Id.* at 21 (citing Ex. 1010 ¶ 102). Referring to Figure 6, Petitioner contends that the operator's profile information, contained in wireless automobile key service information, is stored in Xiao's server. *Id.* at 21 (citing Ex. 1010 ¶¶ 61, 64–

66, 69). Petitioner adds that the user profile (e.g., profile information 614) "defines one or more settings that are preferred to be set in vehicles if the vehicles support the settings." *Id.* at 22 (citing Ex. 1010 ¶¶ 69–72) ("For example, profile information 614 includes climate control system preferences . . . , audio system preferences. . . , comfort system preferences . . . , and awareness system preferences (e.g., mirror positions)[.] ").

In addition, Petitioner contends that Xiao's server may look up a particular command code based on automobile ID 628 and command ID 630 contained in a command request received from the mobile device. Pet. 23 (citing Ex. 1010 ¶ 88). Petitioner asserts Xiao's command codes are used to control automobile systems to achieve the operator's desired settings. *Id.* (citing Ex. 1010 ¶¶ 103–104; Ex. 1009 ¶¶ 108–110).

With respect to limitation [10b], Petitioner asserts Xiao's Figure 9 discloses a wireless automobile key service page 900 that includes automobile key menu 912 with automobile name display 916 indicating the name of the automobile 112 currently selected. Pet. 24 (citing Ex. 1010 ¶ 99, 102). Petitioner further contends that Xiao discloses that vehicles may include settings for climate, audio, comfort, and awareness system settings. *Id.* (citing Ex. 1010 ¶ 102).

For limitation [10c], Petitioner refers to step 1108 of Xiao's Figure 11, and argues that the server generates a command to customize the automobile systems based on the operator's profile. Pet. 25 (citing Ex. 1009 ¶¶ 117–126). Petitioner asserts that "Xiao explains the applicable settings are settings that are preferred to be set as identified from the user profile and are compatible with settings that are settable in the selected vehicle." *Id.* at 26 (citing Ex. 1009 ¶¶ 120–125). Petitioner argues that Xiao contemplates different commands for different types of automobiles. *Id.* (citing Ex. 1010

¶ 85). Petitioner further asserts that Xiao's command codes 632 are used to "control the automobile systems to achieve the operator's desired settings." *Id.* (citing Ex. 1010 ¶¶ 103–104). According to Petitioner, "[t]his setting is compatible with the selected vehicle because it is usable on the vehicle." *Id.* at 27.

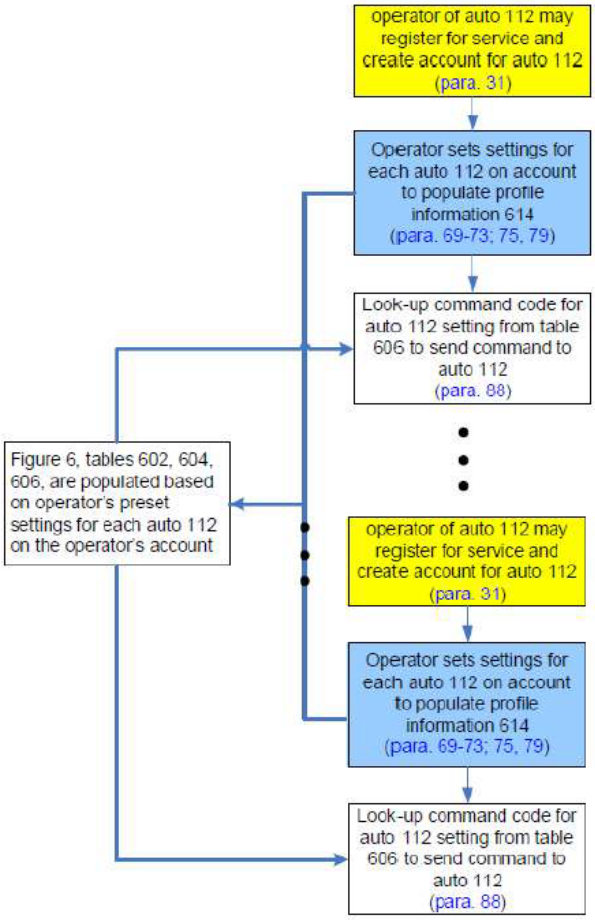
(2) Patent Owner's Contentions

Patent Owner contends that Xiao does not disclose: (1) "the user profile" required by limitations [10a], [10b], and [10c]; (2) the "compatibility check" of limitation [10c]; or (3) these limitations arranged in the order required of claim 10. PO Resp. 31.

(a) User Profile

With regard to the "user profile," Patent Owner contends that limitations [10b] and [10c] recite operations with "the user profile" that define settings preferred to be set in at least two *vehicles*. PO Resp. 32. Patent Owner contends that Xiao's system is constrained to be "one setting to one vehicle, or many settings to one vehicle," but never discloses a setting for *vehicles*. *Id.*

In addition, Patent Owner provides a diagram, provided below:



PO Resp. 41 (citing Ex. 1010 ¶¶ 31, 69–73, 75, 79, 88, 99–102, 105, Fig. 6, Fig. 9). Patent Owner further argues that

> Xiao fails to disclose element 10[b] because Xiao's settings are configured as vehicle-specific, stored as vehicle-specific, and applied according to a vehicle-specific command request, vehicle-specific command code retrieval, and vehicle-specific command code transmission onto the automobile 112. The above diagram, outlining teachings of Xiao, shows that for each vehicle, the user must (1) identify the vehicle when registering and creating an account, (2) set settings that are stored to the relational database of Xiao's Figure 6 for that specific vehicle, and (3) issue vehicle-specific command requests, allowing a server retrieval of vehicle-specific command codes when needed.

Id. at 41–42; *see also* Ex. 2011 ¶¶ 102–104. As such, Patent Owner contends Xiao cannot disclose "identifying a selected vehicle for applying the user profile" recited by limitation [10b], or "the user profile defining one or more settings that are preferred to be set in vehicles" recited by limitation [10a].

(b) Compatibility Check

For limitation [10c], Patent Owner argues that Xiao does not teach the compatibility check functionality because Xiao's generation command step in Figure 11 fails to determine any compatibility check. PO Resp. 34. Patent Owner adds that Xiao's "generate command" operation is always vehicle-specific and "is nothing more than a relay of the retrieved command code 632 that corresponds to the vehicle-specific automobile ID and vehicle-specific command ID contained in the command request." *Id.* (citing Ex. 1010 ¶¶ 100–103). Patent Owner contends that "[t]he required compatibility check of claim 10 is not disclosed by a server's constrained relay of a vehicle-specific command code." *Id.* at 35 (citing Ex. 2011 ¶¶ 92–94).

Patent Owner adds that

> Xiao's system lacks "the user profile," defined in element 10[a], which is "the user profile defining one or more settings that are preferred to be set in vehicles …" *Id.*, 33:1-5. Xiao does not disclose any settings that can be set in multiple vehicles, as the settings are specific to only one vehicle. EX2011, ¶ 105. As shown above, each of Xiao's settings is always vehicle-specific, e.g., "audio system preferences for the operator for each automobile 112 on the account." EX1010, ¶ 70; *see id.*, ¶¶ 69 (same as to "climate control … for each automobile 112 on the account"), 71 (same as to comfort system preferences). Indeed, from the outset, i.e., upon registering and creating an account, Xiao's operator configures system preferences "for each automobile 112." *Id.*, ¶¶ 31, 75. Xiao's system constrains the

> operator to configure (or later modify) each setting specific to a particular automobile 112. *Id.*, ¶¶ 69-75. Put another way, no setting in Xiao is "preferred to be set in vehicles," but instead, is always fixed to a specific vehicle. *Id.*; EX1001, 33:1-5; 12:31-39; EX2011, ¶ 106.

PO Resp. 42–43; *see also* Ex. 2011 ¶ 107.

Turning to claim 14 of the '268 patent to discuss limitation [10c], Patent Owner argues that Xiao's "look up" operation does not perform the mapping required of claim [14a] because Xiao's "look up" is fixed to a specific vehicle and therefore cannot allow integration of the user profile's settings in vehicles. *Id.* at 38. Patent Owner contends that the "look up" operation is not a compatibility check. *Id.* at 37–38.

Patent Owner further contends that the "appropriate command codes" that looked up "are fixed as vehicle-specific, at least by the preceding 'command request' received by the server, and by the storage of each command code 632 in table 606." PO Resp. 44 (citing Ex. 1010 ¶¶ 69–75, 77, 87–88), *see id.* at 46 ("Any 'appropriate command code' is already constrained by the vehicle-specific automobile ID and vehicle-specific command ID (EX1010, ¶¶ 85-88) and further constrained by the system preference which was already configured 'for each automobile 112 on the account' (*id.*, ¶¶ 69-72), before any command request could be issued (*id.*, ¶¶ 99-102).") (emphasis omitted).

(c) Order of Limitations [10a]–[10c]

Patent Owner asserts that Xiao's server receives the command request after the operator's logic authenticated, after the server selects the default automobile, after the selected automobile is displayed, and after the operator selects touch screen elements (e.g., Xiao's elements 918, 920, 922). PO Resp. 48. Patent Owner contends that Xiao cannot teach limitations [10a]

and [10b] because these limitations require limitation [10a] to occur before limitation [10b], and Xiao's command request (limitation [10a]) occurs after a vehicle has been selected (limitation [10b]). *Id.* at 48–49, *see id.* at 3, 50–51 (citing *Askeladden LLC v. Hardison Holding Company LLC*, IPR2021–00278, Paper 7 at 22 (P.T.A.B. Apr. 15, 2021)

(3) Discussion

Based on the complete record, we determine that Petitioner has sufficiently explained through evidence and reasoning how Xiao discloses limitations [10a]–[10c].

(a) Limitations [10a] and [10b]

To start, Xiao's Figure 9 is provided below:

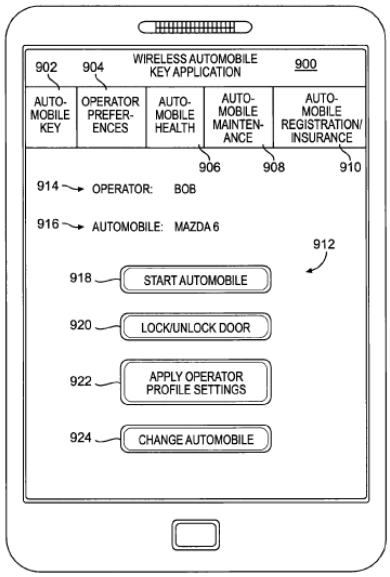


FIG. 9

Xiao's Figure 9 shows an exemplary page of a wireless automobile key application or website. Ex. 1010 ¶ 13. Xiao discloses that an "operator may log in to page 900 by inputting a username, password, biometric data, and/or other authentication information to mobile device 110." *Id.* ¶ 95. "Mobile

device 110 may then transmit the authentication information, and optionally the mobile ID 304, to automobile service server 118 over cellular network 114." *Id.* According to Xiao, the server may check

> the provided authentication information against the authentication information 612 corresponding to the mobile ID 610 and/or the operator ID 608 in the stored account information. If server 118 properly authenticates the operator, server 118 may retrieve the operator's profile information 614 and default automobile ID 617 for the operator.

Id.

We agree with Petitioner, that Xiao discloses that a server receives information for a user profile (limitation [10a]) because Xiao's mobile device 110 transmits authentication information, "and optionally the mobile ID 304, to automobile service server 118 over cellular network 114." Ex. 1010 ¶ 95. Additionally, we observe that Xiao further discloses that

> [o]perator profile information 614 may contain information regarding the preferences of the operator for the disclosed wireless automobile key service. For example, operator profile information 614 may contain climate control system preferences for the operator for *each automobile 112 on the account*. As an example, the climate control preferences may include the operator's desired heating or cooling temperature settings, desired air conditioning settings, desired vent settings, *desired fan speed settings, desired window or mirror defroster settings, and/or other climate preferences for the automobile(s) 112*.

Id. ¶ 69 (emphases added).

With regard to the "user profile," Patent Owner contends that claim 10 recites operations with "the user profile" that defines settings preferred to be set in at least two *vehicles*. PO Resp. 32. Patent Owner contends that Xiao's system is constrained to be "one setting to one vehicle, or many settings to one vehicle," but never discloses a setting for more than one

vehicle. *Id.* We note that Xiao discloses more than one vehicle may be used by an operator and that operator profile information 614 contains preferences and settings for more than one automobile. Ex. 1010 ¶ 69 (referring to "each automobile 112" and "automobile(s)"). Thus, we agree with Petitioner that Xiao teaches "receiving, at a server, information for a user profile of a user, the *user profile defining one or more settings* that are preferred to be set in *vehicles* if the *vehicles* support the settings" required by limitation [10a].

For limitation [10b], Patent Owner makes the same argument. Patent Owner contends that "Petitioner fails to demonstrate that Xiao satisfies elements 10[a] and 10[b] because the 'current selected automobile 112' of Xiao is not 'a vehicle for applying the user profile' of element 10[a]—i.e., a user profile 'defining one or more settings that are preferred to be set in vehicles . . . .'" because the "'command request' (identified by Petitioner for the alleged disclosure of element 10[a]), and the 'automobile name display 916,' indicating 'the name of the automobile 112 currently selected for providing the disclosed wireless automobile key service' (relied on as to element 10[b]), are constrained to one, single vehicle." PO Resp. 38–39 (emphasis omitted, alternation in original).

Patent Owner's expert, Dr. Malek, further testifies that "[b]y contrast to the above-described objectives of '268 patent, wherein a user profile having a set of 'one or more settings' can be applied to many vehicles, Xiao is limited to applying any setting to one and only one vehicle." Ex. 2011 ¶ 100; *see id.* ¶ 103 ("Xiao fails to disclose element 10[b] because Xiao's settings are configured as vehicle-specific, stored as vehicle-specific, and applied according to a vehicle-specific command request, vehicle-specific command code retrieval, and vehicle-specific command code transmission

onto the automobile 112."). Dr. Malek also testifies that "Xiao makes clear that its system can only apply vehicle-specific system preferences to *that* vehicle, never applying "one or more settings that are preferred to be set *in vehicles*." *Id.* ¶ 101. Dr. Malek adds that

> Xiao does not disclose settings that are preferred to be set in vehicles, nor does Xiao select a vehicle to "apply" "one or more settings that are preferred to be set in vehicles," as elements 10[a] and 10[b] require. Rather, *after registering and creating an account for Xiao's disclosed wireless automobile key service, the operator configures each system preference "for each automobile 112 on the account*," and the "operator preferences menu UI element 904" can only be modified vehicle-by-vehicle (page 900 unavailable until after server retrieves the automobile 112 for which to provide the disclosed wireless key service). *Id.*, ¶¶ 99–102, 105, Fig. 9.

Ex. 2011 ¶ 102 (emphases added and omitted).

We observe that Xiao discloses that more than vehicle may be available to an operator and the operator may select between vehicles identified by the server for the operator. Ex. 1010 ¶¶ 110–111, Fig. 9 (element 924). Xiao discloses in Figure 9 that an automobile MAZDA 6 has been selected initially. Nevertheless, Petitioner explains in the Petition that Xiao further discloses element 924 allows the selection of a different automobile. Pet. 24. Petitioner's annotated version of Xiao's Figure 9 from the Petition is provided below:

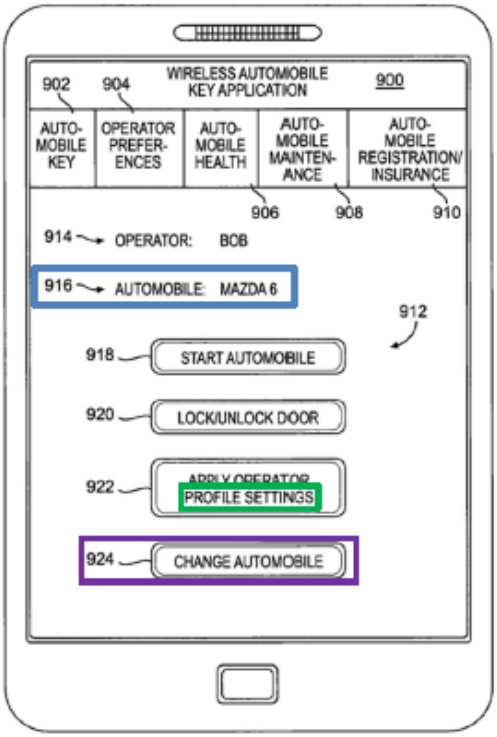


FIG. 9

Id. Petitioner's annotated version of Xiao's Figure 9 includes a purple box around "924 change automobile." *Id.* Petitioner contends that Xiao's server can identify other available automobiles for the operator to operate and that the vehicles have a plurality of settable settings including climate, audio, comfort, and awareness system settings. *Id.* at 24–25 (citing Ex. 1010 ¶¶ 102, 111).

Indeed, Xiao discloses explicitly that

> [a]utomobile key menu 912 may also include a change automobile UI element 924. *Change automobile UI element 924 may allow the operator to select a different automobile 112 on the wireless automobile key service account.* That is, UI element 924 may allow the operator to select an automobile 112 other than the default automobile 112 with which to use the disclosed wireless automobile key service. For example, in response to the *operator selecting UI element 924, mobile device 110 (or terminal device 122) may request from server 118 information*

> *regarding any other automobiles 112 on the account that the operator is permitted to operate. Server 118 may identify the other available automobiles 112 based on the automobile permission information 612 associated with the operator's ID 608.*

Ex. 1010 ¶ 110 (emphases added). Then, Xiao discloses that the operator may select a new automobile among identified automobiles 112 and, "[s]ubsequently, the operator may be able to perform the various automobile key service with respect with the selected new automobile 112." *Id.* ¶ 111. Xiao further discloses that

> the operator may start the new automobile 112 using UI element 918, may lock/unlock the door of the new automobile 112 using UI element 920, and *may apply the preferences indicated in the operator profile information 614 to the systems of the new automobile 112 using UI element 922*. In addition, the operator may view and/or change the operator profile information 614 for the new automobile 112 by selecting UI element 904. The operator may also view health information 620, maintenance information 622, registration information 624, and/or insurance information 626 associated with the new automobile 122 by respectively selecting UI elements 906, 908, and 910.

Id. (emphases added).

It bears mentioning that element 924 allows the identification of a selected vehicle *after* the server has received information for a user profile. *Id.* ¶ 95, Fig. 9. In other words, the identification of a selected vehicle via element 924 occurs *after* the server has received information for a user profile (e.g., Xiao's operator profile information). *Id.*, Fig. 9. As Petitioner points out, "[n]othing precludes Xiao from 'identifying a selected vehicle' again after a first command request is received. Indeed, Xiao's methods are shown to repeat on loop." Pet. Reply 16 (citing Ex. 1010, Figs. 10–11).

Petitioner's arguments on this issue are well-reasoned and supported by the evidence of record. Therefore, we determine Petitioner has explained sufficiently how Xiao discloses limitations [10a] and [10b].

(b) Limitation [10c]

Next, we turn to the compatibility dispute of limitation [10c]. Here, we note first that we have construed limitation [10c] to require a compatibility check. *See supra* sect. IV. A. Second, we observe that there is no dispute Xiao teaches expressly that server 118 looks up *appropriate* command codes based on user profile settings and then sends commands to a specific vehicle for implementing the appropriate settings. Pet. 25–27; PO Resp. 34–36. Instead, the question is whether Xiao's "look up" is sufficient to disclose that a server determines applicable settings, including that the settings are compatible with settings that are settable in a selected vehicle.

Based on the complete record, we find Petitioner's position on this issue to be more persuasive and better supported.

Patent Owner contends that looking up commands from a table or a mapping is not a compatibility check. PO Resp. 34–36. According to Patent Owner, Xiao does not disclose the compatibility check of limitation [10c] because Xiao's generate command is vehicle-specific and nothing more than a relay of a retrieved command code 632. *Id.* at 34. Patent Owner maintains that "in Xiao's static, vehicle-specific system, a POSITA would have recognized there is no need for any compatibility check: Xiao, at best, pulls settings that are already specifically linked to the vehicle and are thus compatible." *Id.* at 36 (citing Ex. 2011 ¶ 96).

Still, a compatibility check as in claim 10 and the '268 patent would not exclude a server pulling settings that are linked. In fact, Patent Owner asserts that claim 14 provides an example of a compatibility check that is

performed by mapping settings associated with the user profile and settings obtained from an automobile database. PO Resp. 11–12. According to Patent Owner, "mapping" is an example of a compatibility check where mapping engine 118 communicates with the automakers database to settings, applications, etc. to integrate the user profile from the user profile database. *Id.* at 12 (citing Ex. 1001, 17:3–17); *see* Tr. 46:16–18 ("MS. ENTZMINGER: That's right, Your Honor. Claim 14 is a narrower type - that is one specific type of compatibility determination required by that claim, that's exactly right."). Patent Owner's counsel also clarified at the hearing that

> specifically Claim 14 . . . is a determining of applicable settings that is specific. That specific claim requires a mapping engine, and the mapping engine to perform a certain kind of mapping. But to Your Honor's question, *that is just an example of one way the compatibility determination can be performed*. Also, the specification makes clear that the *server identifying components that can allow integration*; for example, identifying APIs, identifying apps that allow integration, that can be determining applicable settings. That can be determining compatibility.

Tr. 45:17–46:1. As such, we understand Patent Owner's position to be that the use of a map or mapping by the server may teach a compatibility check, and that the mapping may be specific to a selected vehicle, e.g., claim 14. *Id.* Moreover, Patent Owner acknowledges that compatibility checks disclosed in the '268 patent are not limited to maps or mapping but include the "server identifying components that allow integration." *Id.* This is consistent with our understanding of the claim language recited in claim 10, which does not recite a particular type of compatibility check that must be performed by the server. *See* Ex. 1001, 33:1–26.

Our understanding of limitation [10c] is also consistent with the disclosure of the '268 patent. We observe that the '268 patent discloses that mapping engine 118 *includes a map* or, alternatively, the mapping engine can communicate with the automakers database to identify the settings, applications, APIs, or modules *that allow integration of the user's profile from user profile database 160* so that "Bob's profile can be sent to car 200." Ex. 1001, 17:3–11. We understand that the server (e.g., mapping engine) can use a map to determine compatibility. Or, separately, the server may communicate with the automakers database to integrate the user's profile for sending the user's profile settings to the vehicle.

Dr. Malek further testifies that the '268 patent "provides an example of how this 'integration' can be achieved, i.e., 'a database can be accessed to find a translation metric' that allows for the user profile 'settings to be transferred between functions of one vehicle to other vehicles.'" Ex. 2011 ¶ 97 (citing Ex. 1001, 22:7–20). More specifically, the '268 patent discloses that

> a database can be accessed to find a translation metric. The translation metric can include *mapping tables* that allow for settings to be transferred between functions of one vehicle to other vehicles. In one embodiment, *vehicle makers can upload their translation metric for each model and the mapping tables can be used to provide the sync operation*.

See Ex. 1001, 22:5–22. Here, the '268 patent discloses that mapping tables can be used for "integration," which Patent Owner and Dr. Malek agree provides an example of a compatibility check that can be performed by a server.

With this in mind, Xiao's Figure 6 is provided below:

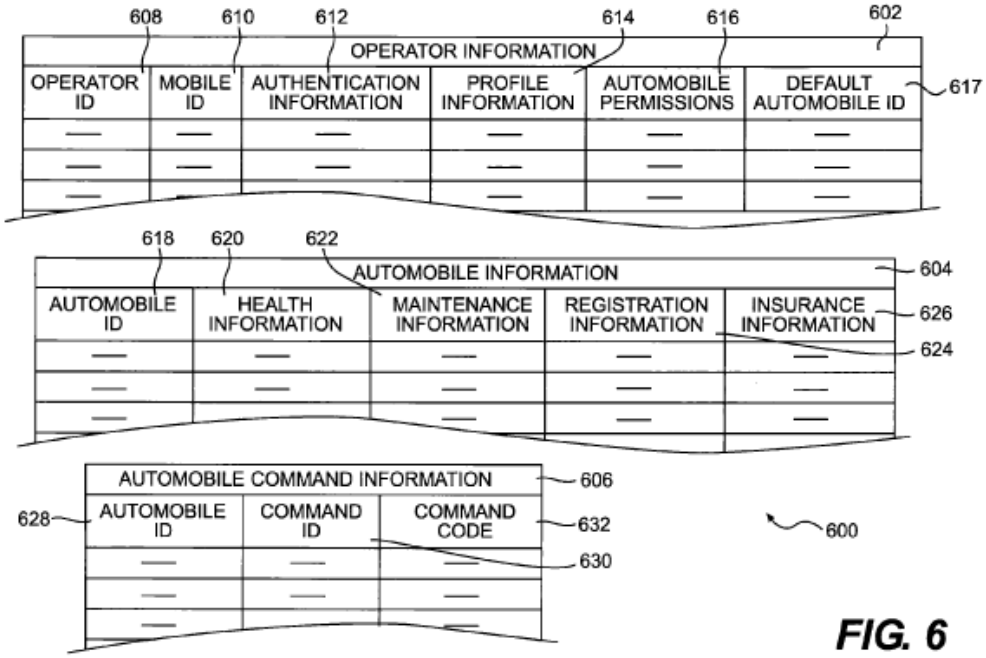


FIG. 6

Figure 6 illustrates information stored by the automobile service server. Ex. 1010 ¶ 10. Figure 6 shows operator information includes profile information 614. *Id.*, Fig. 6. Xiao's Figure 6 further includes automobile command information 606. *Id.* Xiao discloses that

> automobile command information 606 may be a library of commands that may be issued to automobiles 112 associated with a wireless automobile key service account. As mentioned above, server 118 may issue various commands to an automobile 112 over the Internet 108. The commands may be issued in response to input from an operator at mobile device 110 or at a terminal device associated with local system 106.

Ex. 1010 ¶ 79. The automobile command information 606 may include setting commands like climate control commands, operator comfort system commands, radio setting commands, etc. *Id.* The automobile command information may include automobile ID 628 associated with the automobile 112 (e.g., a vehicle identification number (VIN) associated with the automobile 112) and command ID 630 for each command that may be

issued to the automobile 112. *Id.* ¶ 85. To determine the *appropriate* commands, Xiao further discloses that "automobile service server 118 may look up *appropriate* command codes 632 *based on the automobile ID 627 and on the command IDs 630 associated with the operator's desired system settings* 614." *Id.* ¶ 88 (emphases added). "Automobile service server 118 may generate one or more commands based on the retrieved command codes 632 to control the automobile systems to achieve the operator's desired settings." *Id.* ¶ 103.

We view Xiao to disclose a map for determining the appropriate command codes 632 (e.g., applicable settings) for a selected vehicle. Xiao's Figure 6 shows how the server may look up command codes that are associated with automobile ID 627 and the operator's desired settings 614 (e.g., preferred user settings). Ex. 1010 ¶ 102, Fig. 6. Dr. Almeroth explains that

> Xiao demonstrates the concept of "compatibility" of certain settings by disclosing "appropriate command codes" being sent to appropriate automobile modules. *Id.* at ¶¶ [0103]-[0104]. Xiao explains its server generates or retrieves "appropriate command codes 632" corresponding to an operator's desired settings and a particular vehicle. *Id.* at ¶ [0103]. For example, Fig. 6 (discussed above) *includes a table of automobile command code information 606 with entries for each of an automobile ID 628, a command ID 630 (which is "associated with the operator's desired system settings 614"), and an appropriate command code 632. Id.* These command codes 632 are "associated with each command that may be issued to the automobile 112." *Id.* at ¶ [0088].

Ex. 1009 ¶ 96 (emphases added).

While Xiao uses the terms "look up" or "retrieve," we are not persuaded that looking up or retrieving *appropriate* command codes cannot teach a compatibility check. We note that Xiao teaches the use of databases

or map/table to determine applicable settings (e.g., command codes 632) that are also compatible with vehicle settings (Ex. 1010 ¶ 103). The use of a map or table is acknowledged by both Patent Owner and Dr. Malek to be a compatibility check. PO Resp. 11–12; Tr. 45:17–46:1, 46:16–18; Ex. 2011 ¶ 97 (citing Ex. 1001, 22:7–20); Ex. 1001, 17:3–11, 22:5–22; *see also* Ex. 1001, 32:33–40 (claim 5 recites "The method of claim 2, wherein determining that vehicle settings are compatible includes performing a mapping between settings associated with the user profile and the available vehicle settings of the vehicle, *wherein at least some of the available settings of the vehicle are obtained from a database that identifies a type of the vehicle*, wherein a type of the vehicle includes at least one of a vehicle make or a vehicle model.") (emphasis added). Thus, we determine that Xiao's server looks up information in a map/table to determine applicable settings that are *compatible* with settable settings in a selected vehicle.

Furthermore, even assuming that "Xiao's look up or retrieval of any command code is always fixed as vehicle-specific," (*see* PO Resp. 35–36), we have determined, as discussed above, that Xiao provides element 924 that allows an operator to switch between more than one vehicle (e.g., limitation [10b]). *See* Ex. 1010, Fig. 9. Moreover, Xiao's Figure 6 discloses tables, maps, and databases in which operator profile information 614 can include preferred settings for multiple vehicles that are stored in additional tables. *Id.*, Fig. 6. Because multiple vehicles may be used, Xiao discloses that the server must look up or retrieve the appropriate command codes 632 for operation of a selected vehicle, including one that may be selected at element 924. *Id.* ¶ 103 ("Based on the desired automobile system settings indicated by the operator profile information 614, automobile service server 118 may retrieve appropriate command codes 632 for these systems

from automobile command code information 606. For example, automobile service server 118 may look up appropriate command codes 632 based on the automobile ID 627 and on the command IDs 630 associated with the operator's desired system settings 614.").

Accordingly, based on the complete record, we determine that Petitioner has sufficiently explained through evidence and reasoning how Xiao discloses limitation [10c].

b) Limitation [10d]

Claim 10 further recites:

> [10d] sending, by the server, the applicable settings for programming to the selected vehicle, wherein the applicable settings are programmed on the selected vehicle after receipt by the selected vehicle over a wireless connection[.]

Ex. 1001, 33:11–20.

(1) Petitioner's Contentions

For limitation [10d], Petitioner contends that Xiao teaches server 118 may transmit generated commands to the automobile over the Internet. Pet. 28 (citing Ex. 1010 ¶ 104). Referring to step 1110 of Figure 11, Petitioner asserts that Xiao's server 118 sends the command generated in step 1108 to the automobile 112 over the Internet. *Id.* (citing Ex. 1010 ¶ 127).

Patent Owner does not specifically contest Petitioner's contentions with respect to these limitations. We agree with and adopt Petitioner's arguments as our own, and determine that Petitioner has explained sufficiently how Xiao discloses limitation [10d]. Pet. 28.

c) Limitations [10e] and [10f]

Claim 10 further recites the steps:

> [10e] wherein the method is executed by the server, the server including a processor;
>
> [10f] wherein the selected vehicle includes vehicle electronics for applying the programming to cause the applicable settings to be activated on the selected vehicle and communication circuitry for communicating via the wireless connection.

Ex. 1001, 33:20–26.

For these limitations, Petitioner asserts that Xiao's method is executed by a server (e.g., server 118) that includes a processor (e.g., processor 500). Pet. 29 (citing Ex. 1009 ¶¶ 131–133; Ex. 1010 ¶¶ 59, 61–62). Petitioner further contends that

> Xiao discloses the selected vehicle (e.g., automobile 112) includes vehicle electronics (e.g., modules, including modules 406-418) for applying the programming (e.g., executing commands) to cause the applicable settings (e.g., command codes 632) to be activated on the selected vehicle and communication circuitry (e.g., cellular network communication module 404) for communicating via the wireless connection (e.g., Internet 108).

Id. at 30 (citing Ex. 1009 ¶¶ 134–138). Referring to Xiao's Figure 4, Petitioner further asserts that automobile 112 includes cellular network communication module 404 that may include a radio antenna or transceiver for communicating data over cellular networks. *Id.* at 32 (citing Ex. 1010 ¶ 44, Fig. 4).

Patent Owner does not specifically contest Petitioner's contentions with respect to these limitations. We agree with and adopt Petitioner's arguments as our own, and further determine that Petitioner has explained sufficiently how Xiao discloses limitations [10e] and [10f]. Pet. 29–32.

d) Conclusion

After review of the arguments and evidence, we determine that Petitioner has demonstrated by a preponderance of the evidence that independent claim 10 is anticipated by Xiao.

2. Analysis of Claim 11

Claim 11 depends from claim 10, and recites "wherein sending the applicable settings to the vehicle includes, sending the applicable settings directly to the vehicle electronics of the selected vehicle, or sending the applicable settings to a computing device for subsequent transfer to the selected vehicle." Ex. 1001, 33:27–32.

Petitioner asserts that Xiao discloses sending applicable settings directly to modules 402–418 of the vehicle. Pet. 32–33 (citing Ex. 1010 ¶ 36–45).

Petitioner also contends that Xiao discloses that applicable settings (e.g., command codes) are sent to a computing device for subsequent transfer to the selected vehicle (e.g., automobile 112). For example, Petitioner asserts that

> Xiao explains that server 118 retrieves command code 632, and then "may transmit the retrieved command code 632 to the automobile 112 over the Internet 108." *Id.*, ¶[0100]. An intermediary computing device, such as "[c]ellular network gateway 115 may receive the command from the Internet 108 and communicate the command onto cellular network 114. Cellular network communication module 404 of automobile 112 may receive the command code 632 from cellular network 114," and may then apply the operator's desired system settings. *Id.*, ¶¶[0057], [0100], [0103]. In some embodiments, commands may be "broadcast . . . on automobile network 420 for execution by one or more of modules 406–418." *Id.*, ¶[0045].

Pet. 33–34; Ex.1010, Fig. 1.

Patent Owner does not specifically contest Petitioner's contentions with respect to these limitations. We agree with and adopt Petitioner's arguments as our own, and further determine that Petitioner has established a by a preponderance of the evidence that claim 13 is anticipated by Xiao. Pet. 32–34.

3. Analysis of Claim 13

Claim 13 depends from claim 10 and further recites

> wherein the plurality of settable settings of the selected vehicle are predefined for specific types of vehicles associated with automobile makers or automobile models;
>
> > wherein the settable settings include one or more of radio settings, or user interface settings, or temperature settings for particular times of day, or temperature settings, or air settings, or display settings, or speed settings, or internet settings, or pairing settings, or remote access settings, or home control settings, or audio settings, or entertainment settings, or mapping settings, or heating settings, or payment settings, or sub-user settings, or key fob settings, or user ID settings, or biometric settings, or fingerprint settings, or eye scan settings, or role settings, or administrator settings, or login settings, or calendar settings, or location based settings, or tracking settings, or vehicle mode settings, or operational settings, or combinations of two or more settings, or learned settings from user historical use, or seat settings, or automatic payment settings, or combinations of two or more thereof.

Ex. 1001, 33:39–60.

Petitioner contends that Xiao discloses settings (e.g., climate, audio, comfort, awareness settings) that are associated with automobile makers/models because automobile command information 606 may be a library of commands for a variety of types of automobiles made by different manufacturers. Pet. 35 ("Xiao explains that 'command codes 632 may be

CAN bus codes or other codes provided by the manufacturer of automobile 112 . . . for controlling the systems to perform various functions.'") (citing Ex. 1010 ¶¶ 85, 88, 102); Ex. 1009 ¶¶ 145–149.

Patent Owner does not specifically contest Petitioner's contentions with respect to these limitations. Nonetheless, the burden remains on Petitioner to demonstrate unpatentability. *See Dynamic Drinkware, LLC v. Nat'l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015) (discussing the burden of proof in *inter partes* review). Based on the totality of the record, we agree with and adopt Petitioner's arguments as our own, and further determine that Petitioner has established a by a preponderance of the evidence that claim 13 is anticipated by Xiao. Pet. 34–35.

4. Analysis of Claim 15

Claim 15 depends from claim 10, and further recites

> wherein the applicable settings for the selected vehicle are saved or stored in association to the user profile, the method further includes determining applicable settings for one or more other selected vehicles and saving said applicable settings to the user profile, such that the user profile can identify settings for two or more vehicles.

Ex. 1001, 34:4–9.

Petitioner contends that

> Xiao explains that "wireless automobile key service information 600," which includes operator information 602 and automobile command information 606, which in turn includes command codes 632, is "stored in storage device 506." Ex. 1010, ¶¶[0065], [0088], Fig. 6. Further, Xiao discloses "[a]utomobile command information 606 may store information regarding such commands for access and retrieval by server 118." *Id.*, ¶[0085]. Xiao also states that command IDs 630 (and thus also command codes 632) are "associated with" operator profile information 614. *Id.*, ¶[0103]; Ex. 1009, ¶ 150.

Pet. 36 (alteration in original). Additionally, Petitioner asserts that Xiao is not limited to a single vehicle and that wireless automobile key service information 600 includes command codes 632 for various vehicles. *Id.* at 37–38.

Patent Owner does not specifically contest Petitioner's contentions with respect to these limitations. Nonetheless, the burden remains on Petitioner to demonstrate unpatentability. *See Dynamic Drinkware*, 800 F.3d at 1378. Based on the current record, we agree with and adopt Petitioner's arguments as our own, and further determine that Petitioner has established a by a preponderance of the evidence that claim 15 is anticipated by Xiao. Pet. 36–38.

5. Analysis of Claim 16

Claim 16 depends from claim 10, and further recites "verifying the user as associated with the user profile using one or more biometric evaluation systems, which include one or more of image detection, or face detection, or voice detection, or finger print detection, or password detection, or combinations thereof." Ex. 1001, 34:10–15.

Petitioner directs us to Xiao's teaching that "[a]uthentication information 612 may be associated with each operator on the wireless automobile key service account. Authentication information 612 may include an account password, biometric data, or other information that can be used to authenticate the operator to the wireless automobile key service account." Ex. 1010 ¶ 68; Pet. 39 ("A POSA would understand Xiao's disclosure of 'a biometric recognition device' could encompass a fingerprint reader, for example.") (citing Ex. 1009 ¶ 160).

Patent Owner does not specifically contest Petitioner's contentions with respect to these limitations. Nonetheless, the burden remains on

Petitioner to demonstrate unpatentability. *See Dynamic Drinkware*, 800 F.3d at 1378. Based on the current record, we agree with and adopt Petitioner's arguments as our own, and further determine that Petitioner has established a by a preponderance of the evidence that claim 16 is anticipated by Xiao. Pet. 38–39.

6. Analysis of Claim 17

Claim 17 depends from claim 10, and further recites "associating one or more *sub-user accounts* to the user profile, the *sub-user accounts* having predefined privileges for the selected vehicle to enable or restrict settings or function of the selected vehicle." Ex. 1001, 34:16–20 (emphases added).

Patent Owner argues that Xiao does not teach sub-user accounts because different account operators are all on the same account. More specifically, Patent Owner contends:

> Xiao instructs that "[o]perator information 602" may "include automobile permissions 616 associated with each operator on the account." EX1010, ¶ 76. For example, Xiao's "family account" may include a "father and mother," who "may have permission to operate every automobile 112 on the account." *Id*. "Whereas a child may only have permission to operate the child's automobile 112 or the family automobile 112." *Id*. As explicitly disclosed by Xiao, *these relied upon family members are different operators on one account—i.e., "the account"—as opposed to the recited "sub-user accounts" of claims 17 and 19*. *Id.*; EX2011, ¶¶ 115-117.

PO Resp. 51–52 (emphases added, alteration in original). Patent Owner adds that Xiao teaches multiple operators, but those operators are on a single, lone account. *Id.* at 52 (citing Ex. 1010 ¶ 66; Ex. 2011 ¶ 118).

In its Reply, Petitioner contends Patent Owner's arguments are pedantic and claim 17 only requires a single account. Pet. Reply 18; Pet. 40–41.

Based on the complete record, we agree with Patent Owner. Claim 17 explicitly recites "associating one or more sub-user accounts to the user profile." Ex. 1001, 34:16–17. In the Petition, Petitioner contends that Xiao discloses child accounts are associated to a user profile. Pet. 40 (citing Ex. 1009 ¶¶ 162–165; Ex. 1010 ¶¶ 65, 76). Petitioner argues that a "POSA would understand from this disclosure in Xiao that a sub-user, such as a child, would have 'predefined privileges for the selected vehicle to enable or restrict settings or function of the selected vehicle,' as claimed." Pet. 40–41 (citing Ex. 1009 ¶ 164).

Arguably, there may be sub-users, such as children on an account, but Xiao discloses that these operators are part of the same account. Ex. 1010 ¶¶ 66, 76. In paragraph 66, Xiao teaches "[o]perator information 602 may contain information about each automobile operator on the wireless automobile key service account." *Id.* In paragraph 76, Xiao discloses that operator information 602 includes "automobile permissions 616 associated with each operator *on the account* . . . . For example, in a family account, the father and mother may have permission to operate every automobile 112 on the account. Whereas a child may only have permission to operate the child's automobile[.]" *Id.* ¶ 76.

Petitioner has not explained sufficiently how a single account for multiple operators in Xiao is the same as one or more *sub-user accounts* that are associated with a user profile. The same applies to Dr. Almeroth's testimony where he opines that "[a] POSA would understand from this disclosure in Xiao that a sub-user, such as a child, would have 'predefined privileges for the selected vehicle to enable or restrict settings or function of the selected vehicle,' as recited in the claim," but does not explain how Xiao

teaches a sub-user account (e.g., child account) is associated with operator information 602.

In its Reply, Petitioner contends that this distinction between operator and account is "pedantic" and that claim 17 only requires a single account, not a family account and a child account. Pet. Reply 18. Still, it is Petitioner who relies upon Xiao's disclosure of a child operator as a sub-user. *See* Pet. 51–53. And, it is Petitioner who must explain in the Petition how Xiao's child operator (e.g., sub-user) has a sub-user *account* that is associated with a user profile.

We further note that Dr. Malek testified under cross-examination that Xiao teaches a plurality of accounts can be associated with one or more automobile operators. Ex. 1024, 45:22–46:2 (discussing Xiao's paragraph 65). To be sure, paragraph 65 discloses that "storage device 506 may contain automobile key service information 600 for a plurality [of] accounts, each associated with one or more automobiles 112, one or more automobile operators, and/or one or more mobile devices 110." Ex. 1010 ¶ 65. But, it is not clear, nor has Petitioner explained, if or how these plurality accounts are sub-user accounts. *See* Pet. 51–53.

Accordingly, based on the complete record, we determine Petitioner has not established by a preponderance of the evidence that Xiao anticipates claim 17.

7. Analysis of Claims 18 and 19

Claim 18 depends from claim 10 and further recites

> wherein the selected vehicle is a private vehicle or a shared vehicle associated with a car sharing system,
>
> if the vehicle is associated with a car sharing system, the settable settings of the selected vehicle can be enabled or disabled using an administrator account of the car sharing system, or

> if the vehicle is a private vehicle, the settable settings of the selected vehicle can be enabled or disabled using an administrator account that can define one or more sub-user accounts with the same or varying privileges for use of the selected vehicle,
>
> the user profile being accessible via a computer having Internet access to the server.

Ex. 1001, 34:21–34.

Claim 19 depends from claims 10 and 18, and further recites

> wherein particular sub-user accounts enable access to specific information concerning the selected vehicle, the information including one or more of vehicle sensors, vehicle electronics, vehicle mechanics, engine control, vehicle diagnostics, or combinations thereof,
>
> wherein said particular sub-user accounts are accessible over the Internet for viewing or control using a password.

Ex. 1001, 34:35–42.

For both claims 18 and 19, Petitioner relies on the same arguments discussed above for claim 17 for sub-user accounts. *See* Pet. 40–44; Pet. Reply 18–19. For example, Petitioner contends that Xiao teaches that an administrator can create an account and control the other operators sharing an automobile. Pet. 41 (citing Ex. 1009 ¶ 170). Petitioner also argues that "[a] POSA would understand that operators on the *same account* may have the same or varying privileges as the user who created the account." *Id.* at 42 (citing Ex. 1009 ¶ 170) (emphasis omitted).

Petitioner's arguments do not, however, sufficiently explain how Xiao discloses an administrator and a sub-user account. More specifically, as discussed, Xiao discloses that a single account may include multiple operators. Ex. 1010 ¶¶ 66, 76. Those operators are on the *same* account for

the vehicle. *Id.* Dr. Almeroth's testimony is consistent with our reading that Xiao discloses multiple operators on a single account:

> *Xiao discloses multiple operators associated with one account.* The operators may share a common vehicle. The creator of such account would be considered the administrator of the account. A POSA would understand that *operators on the same account* may have the same or varying privileges as the user who created the account (i.e., the administrator).

Ex. 1009 ¶ 170 (emphases added).

Anticipation is not an *ipsissimis verbis* test, but "[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal*, 814 F.2d at 631. Petitioner and Dr. Almeroth both acknowledge that Xiao discloses operators on the *same* account. Pet. 40–41; Ex. 1009 ¶ 170. But Petitioner and Dr. Almeroth do not explain sufficiently how Xiao discloses these operators have sub-user accounts. Petitioner further contends Xiao discloses plurality of accounts. Pet. Reply 18–19 (citing Ex. 1024, 33:1–44:10, 45:22–46:2); Ex. 1010 ¶ 65. Again, Petitioner has not adequately explained how the plurality of accounts includes sub-user accounts because Xiao discloses generally that multiple operators of a vehicle are on the same, single account. Ex. 1010 ¶ 66.

Accordingly, based on the complete record, Petitioner has not established a preponderance of the evidence that Xiao anticipates claims 18 and 19.

D. Claim 12 as Allegedly Obvious over Xiao and Patenaude

Claim 12 depends from claim 10, and further recites:

> examining setting modifications over a period of time that defines a history use;
>
> generating learned settings by analyzing the history of use; and

> sending the learned settings to the user profile for use or transfer to the selected vehicle.

Ex. 1001, 33:33–38.

Petitioner contends that the combination of Xiao and Patenaude renders obvious claim 12. Pet. 50–57. With reference to Patenaude's Figure 4, Petitioner contends that Patenaude discloses a telematics unit that determines patterns in a user's entertainment selections based on user's setting modifications. *Id.* at 51. Petitioner further contends that

> the telematics unit "retrieves the user-specific entertainment selection profile stored in the in-vehicle memory 128," and "determines which entertainment selection is linked to the time frame in the user-specific entertainment selection profile" to automatically configure the user's desired entertainment settings.

Id. at 52–53 (citing Ex. 1011 ¶ 73). Petitioner argues that

> [i]t was well-known in the art for a computerized system to learn a vehicle user's preferences and apply them before using the vehicle, as demonstrated by Patenaude. Ex. 1009, ¶ 203. Patenaude's pattern recognition system would also have been an obvious improvement to Xiao's system of server stored user profiles because it could improve the settings stored in the user profile and thereby improve the user experience. Ex. 1011, ¶¶[0001]-[0005]. For example, one could use Patenaude's teachings for predicting setting selections to cause Xiao's system to add settings to a user's profile that the user is predicted to make, or to update settings in light of patterns learned from the user's selections. Specifically, "during stage S612, the telematics unit 120 powers-up at least one entertainment unit 135, 136, or 137 based on the retrieved user specific entertainment selection profile." *Id.*, ¶[0074].

Id. at 54–55.

Patent Owner contends that Patenaude's disclosure of retrieval operations do not teach or suggest the sending step required by claim 12. PO Resp. 54–55 (citing Ex. 2011 ¶¶ 121–122); PO Sur-reply 28

("Patenaude's retrieval operation merely takes data from the vehicle's stored, in-memory profile.") (citing Ex. 1011 ¶¶ 72–73) (emphasis omitted).

Based on the complete record, we determine Patent Owner has the better position. As background, Patenaude's system includes telematics unit 120 that monitors the user's entertainment selections in a mobile vehicle communication system (MVCS) 100. Ex. 1011 ¶¶ 18, 42. The telematics unit may determine patterns in the user's entertainment selections. *Id.* ¶ 55. As an example, Patenaude teaches an "algorithm searches the acquired data to determine if the FM radio is tuned to the same received FM frequency signal within a specified time frame each weekday for the specific user." *Id.* ¶ 70. The telematics unit may generate a user-specific entertainment selection profile based on the determined patterns that is then stored by a processor in the in-vehicle memory. *Id.* ¶ 58. Patenaude's Figure 6 is reproduced below:

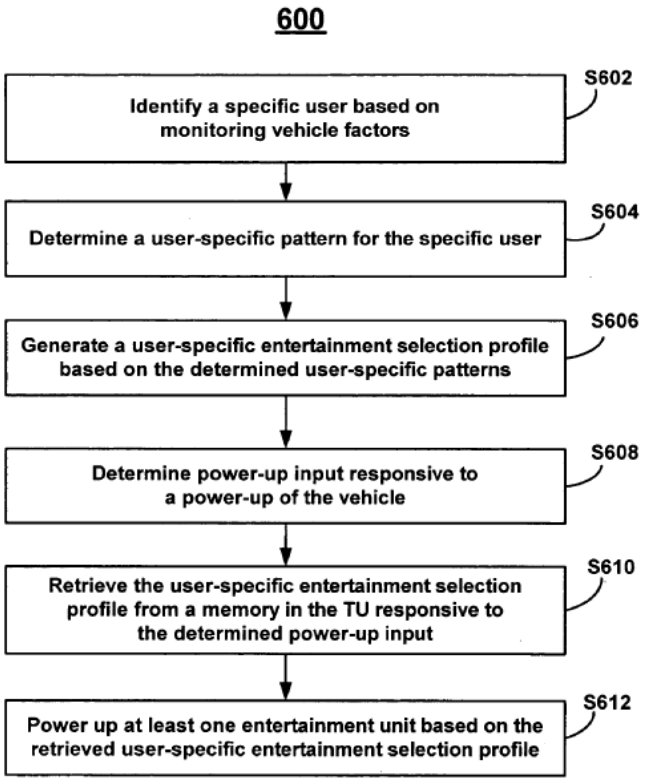


FIG. 6

Figure 6 depicts a method of determining a user-specific entertainment selection profile. *Id.* ¶ 63. As shown in S606, the telematics unit generates a user-specific entertainment selection profile whereby an algorithm outputs user determined patterns to the processor. *Id.* ¶ 71. The processor stores the user-specific entertainment selection profile in the in-vehicle memory. *Id.* Patenaude teaches that in S610, the processor in the telematics unit *retrieves* the user-specific entertainment selection profile stored in the vehicle memory. *Id.* ¶ 73. During S612, the telematics unit powers-up at least one entertainment unit based on the retrieved user-specific entertainment selection profile. *Id.* ¶ 74. Then the processor "transmits a signal to the one or more entertainment units." *Id.*

We note first that Patenaude itself differentiates between transmitting versus retrieving. Patenaude teaches that the processor *retrieves* the user-specific entertainment selection profile from memory and *transmits* a signal to an entertainment unit. Ex. 1010 ¶¶ 73–74.

Dr. Almeroth testifies that that sending and retrieving are the same. He testifies that "[a] POSITA would understand both [retrieving and delivering] relate to the sending and receiving of data. The retrieval of data requires that the data be sent in any realistic scenario. Ex. 1026 ¶ 14. Dr. Almeroth further argues that "Dr. Malek points to no scenario, realistic or otherwise, where data is retrieved (or pulled) but not sent." *Id.* Dr. Almeroth asserts that a component retrieving data from another component means that data is being sent from one component to the other. *Id.* ¶ 15.

Nonetheless, Petition asserts "Patenaude discloses an embodiment where the telematics unit 'retrieves the user-specific entertainment selection profile stored in the in-vehicle memory 128,' and 'determines which entertainment selection is linked to the time frame in the user-specific entertainment selection profile' to automatically configure the user's desired entertainment settings." Pet. 52–53 (citing Ex. 1011 ¶ 73). While Dr. Almeroth acknowledges data may be sent and retrieved between components (Ex. 1026 ¶¶ 14–15), the Petition does not explain sufficiently how Patenaude's retrieval from memory is the same as transmission or sending. In other words, if the telematics unit is *retrieving* the data, then there is a question as to what component Petitioner contends is sending the data. Or, at the very least, there is an incomplete explanation of how the data is being *sent*.

We further note that claim 12 recites "sending the learned settings *to the user profile* for use or transfer to the selected vehicle." Ex. 1001, 33:38–39 (emphases added). Petitioner argues that Patenaude's telematics unit retrieves the user-specific entertainment selection profile from memory, but does not explain sufficiently how this retrieval sends this data *to the user profile* for use or transfer to the selected vehicle. Pet. 52–53. Patenaude's retrieval may move data to the telematics unit from the memory, but Petitioner does not explain how this is sending the learned settings *to the user profile*. In short, Petitioner's arguments are incomplete and fail to fully explain how the relied upon disclosure teaches or suggests all the limitations of claim 12.

Accordingly, based on the complete record, Petitioner has not established by a preponderance of the evidence that the asserted combination of Xiao and Patenaude renders claim 12 obvious.

E. Claim 14 as Allegedly Obvious over Xiao and Singh

Claim 14 depends from claim 10 and further recites:

> wherein the determining of the applicable settings for the selected vehicle includes *performing a mapping between settings associated with the user profile and settings obtained from an automobile database*, wherein the user profile is deactivated on the selected vehicle when use of the vehicle is discontinued or when the user profile is switched to a new user profile or when the user profile is turned off or removed from the vehicle, and wherein upon deactivating settings of the selected vehicle are returned to a neutral setting.

Ex. 1001, 33:61–34:3.

Petitioner further contends that the combination of Xiao and Singh, renders obvious claim 14. Pet. 57–62. For example, Petitioner contends "Xiao discloses that the determining of the applicable settings for the

selected vehicle includes performing a mapping (e.g., look-up) between settings associated with the user profile (e.g., command code 630 associated with the operator's desired system settings 614) and settings obtained from an automobile database (e.g., particular command codes 632)." *Id.* at 57 (citing Ex. 1009 ¶¶ 226–229).

Patent Owner relies on arguments provided with regard to claim 10. PO Resp. 37–38. For example, Patent Owner contends that

> [t]he server's "look up" of a particular command code, or of "appropriate command codes," is always fixed to a specific vehicle, and therefore cannot allow integration of the user profile, defining one or more settings preferred to be set in vehicles. The "look up" operation of Xiao is functionally limited to the automobile 112 for which each of Xiao's vehicle-specific settings was pre-configured.

PO Resp. 38 (citing Ex. 2011 ¶ 99) (emphasis omitted).

As discussed with respect to limitation 10[c], we find that Xiao discloses a map or mapping to determine the appropriate command codes 632 (e.g., applicable settings) for a selected vehicle. Xiao's Figure 6 shows how the server may look up command codes that are associated with automobile ID 627 and the operator's desired settings 614 (e.g., preferred user settings) via a database/table/map. Ex. 1010 ¶ 102, Fig. 6; Ex. 1009 ¶ 96. Xiao further teaches the use of a database/map/table to determine applicable settings (e.g., command codes 632) that are also compatible with vehicle settings. Ex. 1010 ¶ 103. Again, the use of a map and mapping is acknowledged by both Patent Owner and Dr. Malek to be a compatibility check. PO Resp. 11–12; Tr. 45:17–46:1, 46:16–18; Ex. 2011 ¶ 97 (citing Ex. 1001, 22:7–20); Ex. 1001, 17:3–11, 22:5–22; *see* Ex. 1001, 32:33–40.

Furthermore, even assuming that "Xiao's look up or retrieval of any command code is always fixed as vehicle-specific," we have determined, as

discussed above, that Xiao's element 924 that allows an operator to switch between more than one vehicle (e.g., limitation [10b]). *See* Ex. 1010, Fig. 9. Moreover, Xiao's Figure 6 discloses tables, maps, and databases in which operator profile information 614 can include preferred settings for multiple vehicles that are stored in additional tables. *Id.*, Fig. 6.

In addition, Patent Owner has not otherwise contested Petitioner's arguments for the remaining limitations of claim 14 or Petitioner's rationale for the combination of Xiao and Singh. Nonetheless, the burden remains on Petitioner to demonstrate unpatentability. *See Dynamic Drinkware*, 800 F.3d at 1378. Based on the complete record, we agree with and adopt as our own Petitioner's arguments and evidence regarding the combination of Xiao and Singh's disclosures. *See* Pet. 58–62; Ex. 1009 ¶¶ 216–224. Accordingly, we determine that Petitioner has established by a preponderance of the evidence that the combination of Xiao and Singh renders claim 14 obvious.

F. Claims 10, 11, 13, and 15–19 as Allegedly Obvious over Xiao and Hayashi

Petitioner contends the combination of Xiao and Hayashi renders obvious claims 10, 11, 13, and 15–19. Pet. 44–50. Patent Owner disagrees. PO Resp. 55–63.

1. Claim 10

a) Petitioner's Contentions

For this challenge, Petitioner relies on Xiao for limitations [10a], [10b], [10d]–[10f] recited in claim 10, as discussed above for Petitioner's anticipation challenge. Pet. 45.

Petitioner further asserts that Xiao combined with Hayashi teaches or suggests limitation [10c]. Pet. 45–50. Petitioner argues that Xiao

recognizes commands differ between types of automobiles. *Id.* at 45 (citing Ex. 1010 ¶ 85). According to Petitioner, Xiao's applies "particular profile settings to particular automobiles via such commands." *Id.* Relying on Dr. Almeroth's testimony, Petitioner contends that a POSITA would "account for the heterogeneity of vehicles . . . [and] would have known how to include information regarding compatibility of commands in Xiao's information 600 because Xiao recognizes that various types of information can be included." *Id.* at 45–46 (citing Ex. 1009 ¶¶ 190, 192; Ex. 1010 ¶ 87). Dr. Almeroth testifies that

> one would have been motivated to determine applicable settings (e.g., command codes) that are compatible with settings that are settable in the selected vehicle but would avoid determining applicable settings that are incompatible with settings that are settable in the selected vehicle, *ensuring that Xiao's server 118 does not attempt to command vehicles to do things they cannot do, potentially resulting in unexpected and/or undesired vehicle configurations or errors*. Avoiding such undesirable effects would be a predictable result of implementing Hayashi's known method of determining compatibility.

Ex. 1009 ¶ 190 (emphases added).

Petitioner contends that a POSITA would have looked to Hayashi as an example of how a server may determine compatibility. Pet. 46 (citing Ex. 1009 ¶ 196). This is because "Hayashi discloses database 134, which "stores operating methods for each function of each vehicle model." *Id.* (citing Ex. 1013 ¶ 29). According to Petitioner, Hayashi teaches that the operating methods for such functions (e.g., shift lever, parking brake, seat adjustment, mirror adjustment, etc.) may be the same or different, from vehicle to vehicle. *Id.* (citing Ex. 1013 ¶¶ 2, 5, 7, 9, 29, Fig. 6). Petitioner directs us to Hayashi's Figure 6 as describing how Hayashi "actively determines certain functions or operating methods are compatible [or

incompatible] with certain vehicle models by specifying, e.g., method X, Y, Z, etc., for implementing such functions." *Id.* at 47 (citing Ex. 1013 ¶ 29, Fig. 6).

Petitioner asserts that it would have been obvious for Xiao's database to include compatible and incompatible functions/operating methods as described in Hayashi because a POSITA "would have considered it useful to have a database indicating which vehicles are compatible/incompatible with respective functions/operating methods, as in Hayashi." Pet. 48 (citing Ex. 1009 ¶ 195). Petitioner further provides an annotated version of Xiao's Figure 6, which is a chart, to demonstrate how Hayashi's teaching may be implemented in Xiao's databases. Petitioner's annotated Figure 6 is provided below:

AUTOMOBILE COMMAND INFORMATION (606)		
AUTOMOBILE ID (628)	COMMAND ID	COMMAND CODE (632)
—	—	— (630)
—	—	—
—		—
1234	Abcd	None

Annotated Excerpt of Fig. 6 of *Xiao*

Annotated Figure 6 appears on page 48 of the Petition with an additional row in blue indicating Automobile ID 1234 has "None" Command Code for Command ID Abcd. Pet. 48–49. For vehicles without a corresponding command code, Petitioner argues a POSITA would have found it obvious to use "none" as taught by Hayashi to check compatibility of settings. *Id.*

b) Patent Owner's Contentions

Patent Owner presents several arguments including that Petitioner has not sufficiently explained why a POSITA would have modified Xiao to include Hayashi's method of determining capability by including a "none" command in Xiao's command codes. PO Resp. 62–63.

c) Discussion

Based on the complete record, we determine that Petitioner has not articulated a sufficient rationale for why a POSITA would have made the alleged combination to arrive at the subject matter of claim 10.

Hayashi discloses a "car sharing system . . . can be applied to a general rental car system that lends multiple cars to unspecified users." Ex. 1013 ¶ 13. With reference to Figure 1, Hayashi describes *car sharing system 1* includes a management server 10, a vehicle 20, and a mobile terminal 30. *Id.* ¶ 14. Onboard device 200 is mounted in vehicle 20. *Id.* Management server 10, onboard device 200 of vehicle 20, and mobile terminal 30 can each communicate with one another. *Id.* Hayashi further discloses that management server 10 performs reservation management of vehicle 20 used by a user in car sharing system 1. *Id.* ¶ 15. To do so, management server 10 includes storage portion 130 that stores user information in user information DB 131. *Id.* ¶ 25. User information DB 131 stores "user ID, password, user's personal car type, etc. for each user." *Id.* ¶ 26. Management server 10 also contains portion 113 "for extracting function differences according to vehicle model extracts functions and operating methods thereof for functions which are the same [but] for which operating methods differ between the vehicle the user has reserved and vehicle[s] frequently used by the user." *Id.* ¶ 23 (alterations in original).

For a specific user, Hayashi determines differences in functions between a vehicle the user has reserved versus a vehicle used frequently by the user. To do so, Hayashi may consult a database. Hayashi's Figure 6 is reproduced below:

Operating Method by Vehicle Model				
	Model α	Model β	Model γ	...
Function 1	Op. Meth. X	Op. Meth. X	Op. Meth. Y	...
Function 2	Op. Meth. P	Op. Meth. Q	Op. Meth. R	...
Function 3	Op. Meth. S	Op. Meth. T	Op. Meth. T	...
...	...	...	...	...

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FIG. 6

Figure 6 illustrates database of operating methods according to the listed vehicle model. Ex. 1013 ¶ 29. "In the FIG. 6 example, the operating method for 'function 1' for 'vehicle model α' is 'operating method X.' If a certain 'vehicle model' does not have a certain 'function,' 'none' may be stored in the DB of operating methods according to vehicle model 134 as the operating method for the 'function' for the 'vehicle model,' for example." *Id.* Once Hayashi's server determines the differences in functions or methods between vehicles, Hayashi may communicate that information (e.g., "none") to vehicle 20 for the user's operation of the vehicle. *Id.* ¶ 103 ("Management server 10 transmits extracted information to vehicle 20.").

With this understanding of Hayashi's system, we observe once more that Xiao teaches command codes are stored for specific vehicles and that those command codes are already set with the operator's preferences. *See* Ex. 1010 ¶ 102. Again, Xiao's Figure 6 is provided below:

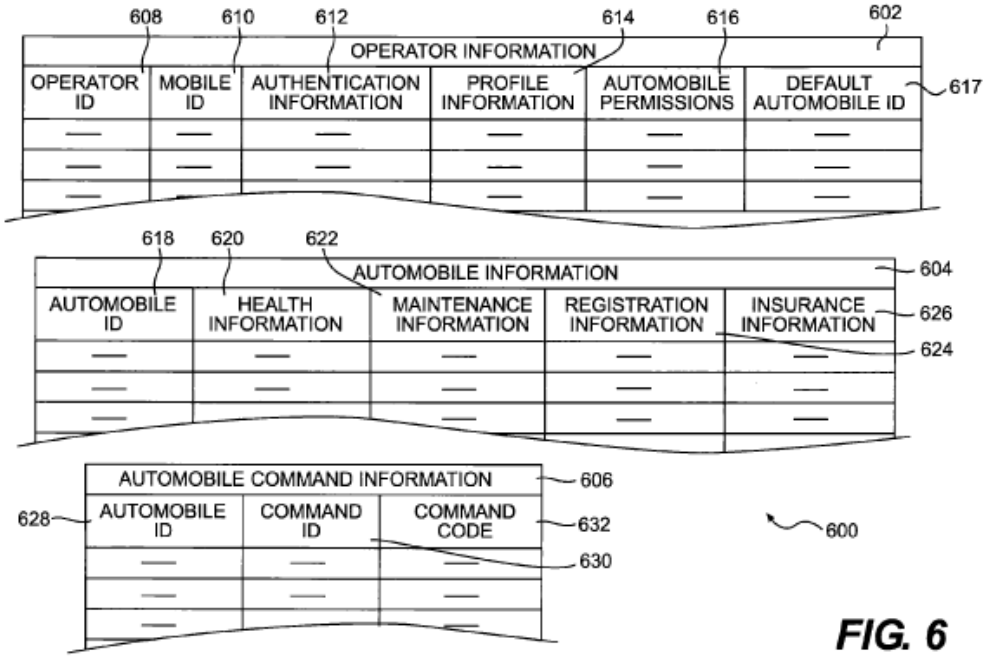


FIG. 6

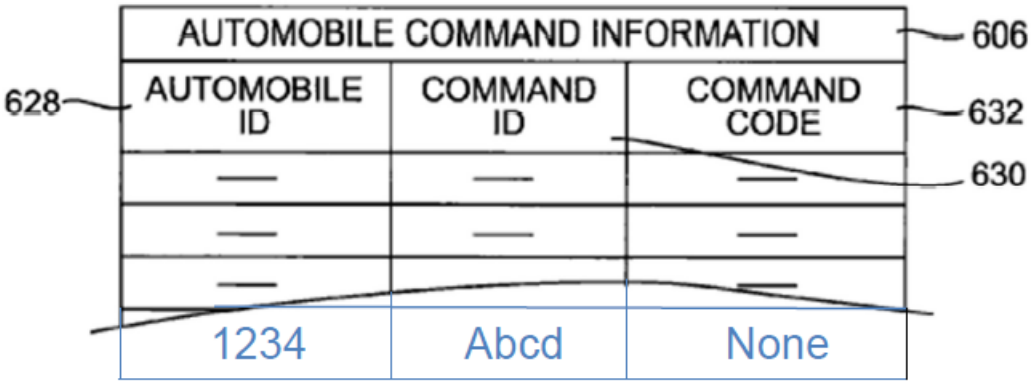
Figure 6 illustrates information stored by the automobile service server. Ex. 1010 ¶ 10. Figure 6 shows operator information includes profile information 614. *Id.*, Fig. 6. Xiao discloses that

> automobile command information 606 may be a library of commands that may be issued to automobiles 112 associated with a wireless automobile key service account. As mentioned above, server 118 may issue various commands to an automobile 112 over the Internet 108. The commands may be issued in response to input from an operator at mobile device 110 or at a terminal device associated with local system 106.

Ex. 1010 ¶ 79. The automobile command information 606 may include setting commands like climate control commands, operator comfort system commands, radio setting commands, etc. *Id.* The automobile command information may include automobile ID 628 associated with the automobile 112 (e.g., a vehicle identification number (VIN) associated with the automobile 112) and command ID 630 for each command that may be issued to the automobile 112. *Id.* ¶ 85. Moreover, Xiao teaches that the

operator profile information 614 may identify certain desired settings of the systems of automobile 112. *Id.* ¶ 102. Based on these desired settings, Xiao's automobile server 118 retrieve appropriate command codes 632 based on the automobile ID 627 and on the command IDs 630 associated. *Id.* ¶¶ 88, 102. "Automobile service server 118 may generate one or more commands based on the retrieved command codes 632 to control the automobile systems to achieve the operator's desired settings." *Id.* ¶ 103.

In combination with Hayashi, Petitioner contends that Xiao's database would be modified to include "None" commands. Petitioner's annotated Figure 6 is provided below:



Annotated Excerpt of Fig. 6 of *Xiao*

Annotated Figure 6 appears on page 48 of the Petition with an additional row in blue indicating Automobile ID 1234 has "None" Command Code for Command ID "Abcd." Pet. 48–49. According to Petitioner, this annotated version of Xiao's Figure 6 demonstrates how Hayashi's teaching may be implemented in Xiao's databases. *Id.* For vehicles without a corresponding command code, Petitioner argues a POSITA would have found it obvious to use "None" as taught by Hayashi to check compatibility of settings. *Id.* For example, Dr. Almeroth testifies that

> [w]ith such information, server 118 would determine applicable settings that are compatible with settings that are settable in the selected vehicle *but would avoid determining applicable settings that are incompatible with settings that are settable in the selected vehicle, ensuring that server 118 does not attempt to command vehicles to do things they cannot do, potentially resulting in unexpected and/or undesired vehicle configurations or errors*.

Ex. 1009 ¶ 190 (emphases added).

However, contrary to Dr. Almeroth's testimony and Petitioner's position, Xiao's server already does not attempt to command vehicles to do things they cannot do. Xiao teaches that server 118 generates commands for command codes that exist and are settable in the vehicle. Ex. 1010 ¶¶ 102–103. As such, if there is no corresponding automobile setting, then Xiao's server would not list those command codes for retrieval and would not send a command based on that retrieved command code to control the automobile systems to achieve the operator's desired settings because that command code is not in the database. Our understanding of Xiao is further supported by Dr. Almeroth's testimony:

> By listing them in the table of automobile command code information 606, Xiao shows that there are particular settings compatible with particular automobiles and particular desired settings. *Thus, Xiao demonstrates the necessarily present characteristic that certain settings (e.g., commands) are compatible with certain automobiles.*

Ex. 1009 ¶ 96 (emphases added).

We note that Dr. Malek further explains "the nonsensical result achieved by the combination would be that Xiao's server, at best, in response to the command request issued by the operator, could 'look up' a command code to apply a vehicle-specific setting to that automobile 112, only to find that there is 'none.'" We agree with Dr. Malek that there is a

question as to why a POSITA would make this modification to store a "None" command code in Xiao's database when Xiao's database already stores settings that are known to be settable in a specific vehicle per the operator's preferences. Ex. 2011 ¶ 135. Thus, based on the complete record, we determine that Petitioner has not demonstrated by a preponderance of the evidence that Xiao in combination with Hayashi render claim 10 obvious.

2. Claims 11, 13, and 15–19

Claims 11, 13, and 15–19 depend from claim 10. Ex. 1001, 33:27–34:42. Petitioner asserts dependent claims 11, 13, and 15–19 would have been obvious over Xiao in combination with Hayashi. Pet. 44–50. Petitioner does not specifically address the additional limitations recited in claims 11, 13, and 15–19. *Id.* at 50.

For this challenge, Patent Owner relies on the same arguments presented for claim 10. PO Resp. 55–63.

For the reasons discussed above, Petitioner has not articulated a sufficient rationale for why a POSITA would have made the alleged combination to arrive at the subject matter of independent claim 10.

Based on the complete record, we determine that Petitioner has not demonstrated by a preponderance of the evidence that Xiao in combination with Hayashi renders claims 11, 13, and 15–19 obvious.

G. Claim 12 as Allegedly Obvious over Xiao, Hayashi, and Patenaude

Claim 12 depends from claim 10. Petitioner contends that the combination of Xiao, Hayashi, and Patenaude renders obvious claim 12. Pet. 50–57. Petitioner does not rely upon Patenaude's disclosure to address Petitioner's combination of Xiao and Hayashi for limitation [10c]. *Id.*

Based on the reasons discussed above for limitation [10c], we agree with Patent Owner that Petitioner has not sufficiently explained how the combination of Xiao and Hayashi teach or suggest claim 12, which depends from claim 10. Thus, we determine that Petitioner has not demonstrated by a preponderance of the evidence that the asserted combination of Xiao, Hayashi, and Patenaude renders claim 10 obvious.

H. Claim 14 as Allegedly Obvious over Xiao, Hayashi, and Singh

Claim 14 depends from claim 10.

Petitioner further contends that the combination of Xiao, Hayashi, and Singh renders obvious claim 14. Pet. 57–62. Petitioner does not rely upon Singh's disclosure to address Petitioner's combination of Xiao and Hayashi for limitation [10c]. *Id.*

Based on the reasons discussed above for limitation [10c], we agree with Patent Owner that Petitioner has not sufficiently explained how the combination of Xiao and Hayashi teach or suggest claim 14, which depends from claim 10. Thus, we determine that Petitioner has not demonstrated by a preponderance of the evidence that the asserted combination of Xiao, Hayashi, and Singh renders claim 14 obvious.

I. Claim 20 as Allegedly Obvious over Xiao, Hayashi, and Patenaude

Petitioner contends that the combination of Xiao, Hayashi, and Patenaude renders obvious claim 20. Pet. 63–72.

Claim 20 is generally directed to a "method for managing a user profile of a vehicle via a cloud processing system," that includes limitation "[20a] accessing the cloud processing system by the vehicle, the user profile having user settings for the vehicle, *wherein certain of the user settings are*

determined to be compatible for use with the vehicle[.]" Ex. 1001, 34:43–51 (emphasis added).

For limitation [20a], Petitioner relies on arguments presented for claim 10, particularly those presented for limitation [10c]. Pet. 64–67. For example, Petitioner argues that "it would have been obvious to substitute/add to Xiao's determination of appropriate command codes Hayashi's method of determining compatibility, with a reasonable expectation of success, to yield the predictable result of ensuring only compatible commands are processed." *Id.* at 66.

In addition, we note Petitioner acknowledges, in connection with limitation [20b], that Xiao "does not explicitly disclose that changes to user settings are processed to learn behavior associated with the changes." Pet. 68. Petitioner argues that

> Patenaude discloses a method of determining a user's entertainment selection profile in a vehicle. *Id.*, ¶[0051]. As in Fig. 4, a telematics unit "determines patterns in the entertainment selections." *Id.*, ¶[0055]. These are based on setting selections. *See id.*, ¶[0056].

Id. at 69. Petitioner contends that "it would have been obvious to combine Xiao and Hayashi with Patenaude to further improve the user experience by providing predictions of user selections, and one would have had a reasonable expectation of success in doing so." *Id.* at 68.

For the compatibility features of limitation [20a], Patent Owner relies on the arguments discussed above for limitation [10c]. PO Resp. 63–64.

In addition, Patent Owner asserts that Xiao does not disclose "communicating . . . by the vehicle, changes to user settings," that is required by limitation [20b]. *Id.* at 64–66.

Based on the reasons discussed above for limitation [10c], we agree with Patent Owner that Petitioner has not sufficiently explained how the combination of Xiao and Hayashi teach or suggest the compatibility requirements of limitation [20a]. Thus, we determine that Petitioner has not demonstrated by a preponderance of the evidence that Xiao in combination with Hayashi renders claim 20 obvious.

VI. CONCLUSION[8]

For the reasons we have explained, we conclude that Petitioner has demonstrated by a preponderance of the evidence, that challenged claims 10, 11, 13, 14, 15, and 16 of the '268 patent are unpatentable. Petitioner has not demonstrated by a preponderance of the evidence that challenged claims 12 and 17–20 are unpatentable.

Claim(s) Challenged	35 U.S.C. §	Reference(s)/ Basis	Claim(s) Shown Unpatentable	Claim(s) Not Shown Unpatentable
10, 11, 13, 15–19	102	Xiao	10, 11, 13, 15, 16	17, 18, 19
10, 11, 13, 15–19	103	Xiao, Hayashi		10, 11, 13, 15–19
12	103	Xiao, Patenaude		12

[8] Should Patent Owner wish to pursue amendment of the challenged claims in a reissue or reexamination proceeding subsequent to the issuance of this decision, we draw Patent Owner's attention to the April 2019 *Notice Regarding Options for Amendments by Patent Owner Through Reissue or Reexamination During a Pending AIA Trial Proceeding*. *See* 84 Fed. Reg. 16,654 (Apr. 22, 2019). If Patent Owner chooses to file a reissue application or a request for reexamination of the challenged patent, we remind Patent Owner of its continuing obligation to notify the Board of any such related matters in updated mandatory notices. *See* 37 C.F.R. § 42.8(a)(3), (b)(2).

Claim(s) Challenged	35 U.S.C. §	Reference(s)/ Basis	Claim(s) Shown Unpatentable	Claim(s) Not Shown Unpatentable
12	102	Xiao, Hayashi, Patenaude		12
14	103	Xiao, Singh	14	
14	103	Xiao, Hayashi, Singh		14
20	103	Xiao, Hayashi, Patenaude		20
Overall Outcome			10, 11, 13, 14, 15, 16	12, 17–20

VII. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that based on a preponderance of the evidence, claims 10, 11, 13, 14, 15, 16 of the ’268 patent have been shown to be unpatentable;

FURTHER ORDERED that claims 12, 17, 18, 19, and 20 of the ’268 patent have not been shown to be unpatentable; and

FURTHER ORDERED that because this is a final written decision, the parties to this proceeding seeking judicial review of our Decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

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