

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TOYOTA MOTOR CORP.,
Petitioner,

v.

EMERGING AUTOMOTIVE LLC,
Patent Owner.

Case No. IPR2024-00814
U.S. Patent No. 11,396,244

PETITION FOR *INTER PARTES* REVIEW
OF U.S. PATENT NO. 11,396,244

TABLE OF CONTENTS

I.	Preliminary Statement	1
II.	Precise Relief Requested	2
III.	The '244 Patent.....	3
A.	Overview	3
B.	File History.....	8
C.	Effective Filing Date – No Earlier than March 15, 2013 or December 24, 2012.....	10
D.	Certificate of Correction.....	11
IV.	Level of Ordinary Skill.....	12
V.	Claim Construction.....	12
VI.	Claims 1, 2, 4-22 Are Unpatentable Over Prior Art.....	12
A.	Ground 1: <i>Rector</i> in combination with <i>Kleve</i> renders claims 1, 9, 11-17, 19, 20 obvious.....	12
1.	<i>Rector</i>	12
2.	<i>Kleve</i>	16
3.	Independent Claim 1	18
4.	Claim 9.....	33
5.	Claim 11	36
6.	Claim 12.....	38
7.	Claim 13	39
8.	Claim 14	40
9.	Claim 15.....	40
10.	Claim 16.....	41

11.	Independent Claim 17	42
12.	Claim 19	46
13.	Claim 20	47
B.	Ground 2: <i>Rector</i> in combination with <i>Kleve</i> and <i>Yassin</i> renders claims 2, 4, 10, 18 obvious.....	47
1.	<i>Yassin</i>	47
2.	Claim 2	50
3.	Claim 4	53
4.	Claim 10	57
5.	Claim 18	58
C.	Ground 3: <i>Rector</i> in combination with <i>Kleve</i> , <i>Yassin</i> , and <i>Patenaude</i> render claims 5-7 obvious	58
1.	<i>Patenaude</i>	58
2.	Claim 5	60
3.	Claim 6	63
4.	Claim 7	67
D.	Ground 4: <i>Rector</i> in combination with <i>Kleve</i> and <i>Faenger</i> renders claims 8, 21 obvious	68
1.	<i>Faenger</i>	68
2.	Claim 8	72
3.	Claim 21	75
E.	Ground 5: <i>Rector</i> in combination with <i>Kleve</i> , <i>Faenger</i> , and <i>Yassin</i> render claim 22 obvious.....	78
1.	Claim 22	78
VII.	The Board Should Not Exercise Discretion to Deny Institution	79

A.	The <i>Fintiv</i> Factors Favor Institution	79
B.	The <i>Becton, Dickinson</i> Factors Do Not Warrant Denial.....	82
VIII.	Grounds for Standing.....	82
IX.	Mandatory Notices.....	82
A.	Real Party-in-Interest Under 37 C.F.R. § 42.8(b)(1)	82
B.	Related Matters Under 37 C.F.R. § 42.8(b)(2)	83
C.	Lead and Back-Up Counsel Under 37 C.F.R. § 42.8(b)(3)	85
D.	Service Information Under 37 C.F.R. § 42.8(b)(4).....	86
X.	Conclusion	86

LIST OF EXHIBITS

Exhibit	Description
Ex. 1001	U.S. Patent No. 11,396,244 to Penilla et al. (“’244 patent”)
Ex. 1002	Certified Prosecution File History for U.S. Patent No. 11,396,244
Ex. 1003	U.S. Provisional Application No. 61/745,729
Ex. 1004	Curriculum Vitae of Dr. Kevin Almeroth
Ex. 1005	Declaration of Dr. Kevin Almeroth
Ex. 1006	U.S. Patent Application Pub. No. 2011/0137520 A1 to Jay Rector et al. (“ <i>Rector</i> ”)
Ex. 1007	U.S. Patent Application Pub. No. 2014/0129053 A1 to Robert Bruce Kleve et al. (“ <i>Kleve</i> ”)
Ex. 1008	U.S. Patent No. 6,505,780 B1 to Amr Yassin et al. (“ <i>Yassin</i> ”)
Ex. 1009	U.S. Patent Application Pub. No. 2006/0136106 A1 to Russell Patenaude et al. (“ <i>Patenaude</i> ”)
Ex. 1010	U.S. Patent Application Pub. No. 2011/0035031 A1 to Jens Faenger et al. (“ <i>Faenger</i> ”)
Ex. 1011	Docket Control Order in <i>Emerging Auto. LLC v. Kia Corp.</i> , No. 2:23-cv-437-JRG, Dkt. No. 40 (E.D. Tex. Feb. 6, 2024)
Ex. 1012	Patent Owner’s Infringement Contentions for the ’244 Patent in E.D. Tex. Civil Action No. 2:23-cv-434-JRG
Ex. 1013	U.S. Provisional Application No. 61/478,436
Ex. 1014	As-filed specification of U.S. Application No. 13/452,881
Ex. 1015	As-filed specification of U.S. Application No. 13/842,158

I. Preliminary Statement

Petitioner Toyota Motor Corporation requests *inter partes* review of claims 1, 2, and 4-22¹ of the '244 patent, purportedly assigned to Patent Owner Emerging Automotive LLC. The patent relates to methods and systems for communicating with a server of a cloud services system to interface with vehicles. Ex. 1001, Abstract. The alleged invention is directed to a method including transferring settings to a vehicle for customizing the vehicle. *Id.*

During prosecution, Patent Owner amended all independent claims to recite providing a “restriction for selected settings.” Ex. 1002, 206. However, *Rector* discloses just that—providing a restriction for selected settings by blocking restricted multimedia and other vehicle settings. Furthermore, limitations Patent Owner added “related to a learning embodiment” (*id.*, 207) are disclosed by *Patenaude*, showing methods of predicting entertainment selections for a vehicle telematics unit based on learned user-specific patterns, and *Faenger*, showing methods of conforming audio/video options of vehicle entertainment systems

¹ The '244 patent issued with 20 claims. Patent Owner requested a Certificate of Correction (“COC”) adding claims 21 and 22. Ex. 1002, 620-660. Petitioner addresses these claims so the Board can institute review whether the COC issues or not.

based on learned user behavior and feedback. Accordingly, the Board should institute IPR and cancel the challenged claims.

II. Precise Relief Requested

Petitioner respectfully requests IPR and cancellation of the challenged claims based on the following references and grounds.

Prior Art References
<i>Rector</i> (Ex. 1006), U.S. Patent App. Pub. 2011/0137520A1, filed Dec. 7, 2009, and published Jun. 9, 2011 (at least § 102(e) prior art).
<i>Kleve</i> (Ex. 1007), U.S. Patent App. Pub. 2014/0129053A1, filed Nov. 7, 2012, and published May 8, 2014 (at least § 102(e) prior art).
<i>Yassin</i> (Ex. 1008), U.S. Patent No. 6,505,780B1, filed Dec. 5, 2001, and issued Jan. 14, 2003 (at least §§ 102(a), (b), (e) prior art).
<i>Patenaude</i> (Ex. 1009), U.S. Patent App. Pub. 2006/0136106A1, filed Dec. 22, 2004, and published Jun. 22, 2006 (at least §§ 102(a), (b), (e) prior art).
<i>Faenger</i> (Ex. 1010), U.S. Patent App. Pub. 2011/0035031A1, filed Aug. 5, 2009, and published Feb. 10, 2011 (at least §§ 102(a), (e) prior art).

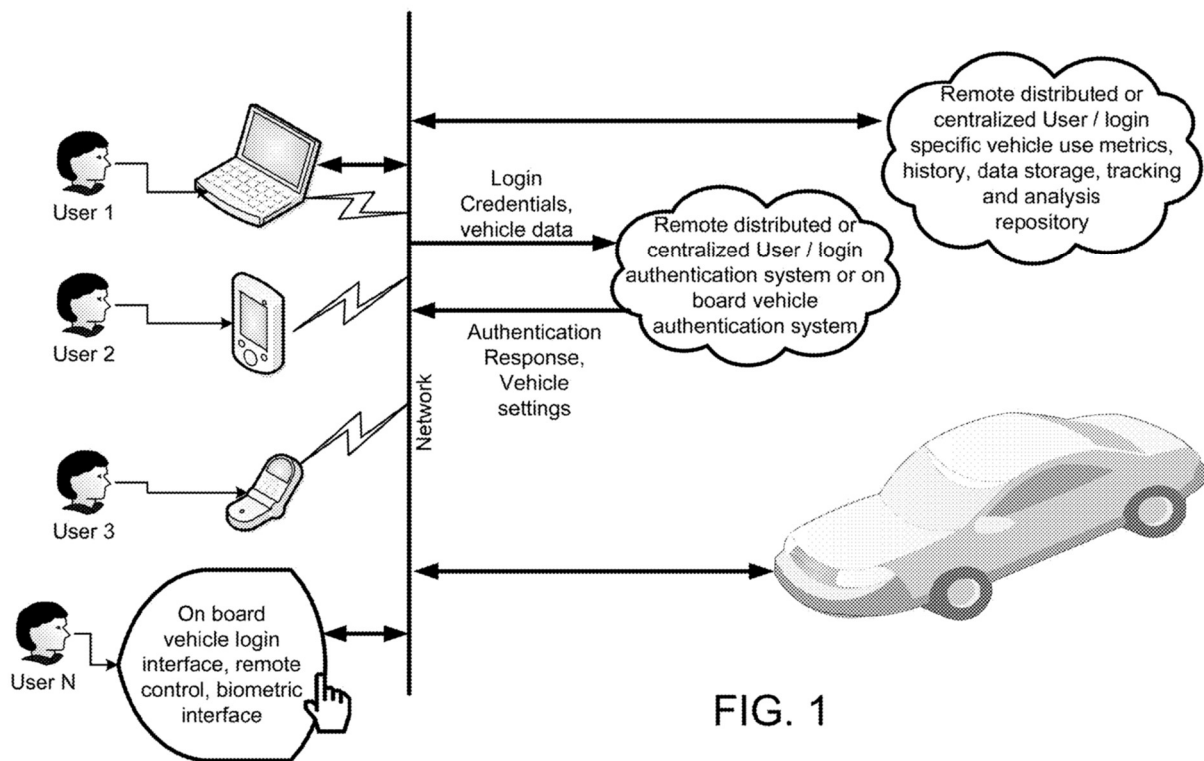
Grounds of Unpatentability	
1	<i>Rector</i> and <i>Kleve</i> render obvious claims 1, 9, 11-17, 19, 20 under §103.
2	<i>Rector</i> , <i>Kleve</i> , and <i>Yassin</i> render obvious claims 2, 4, 10, 18 under §103.
3	<i>Rector</i> , <i>Kleve</i> , <i>Yassin</i> , and <i>Patenaude</i> render obvious claims 5-7 under §103.
4	<i>Rector</i> , <i>Kleve</i> , and <i>Faenger</i> render obvious claims 8, 21 under §103.
5	<i>Rector</i> , <i>Kleve</i> , <i>Faenger</i> , and <i>Yassin</i> render obvious claim 22 under §103.

III. The '244 Patent

A. Overview

The '244 patent claims methods of customizing vehicles based on settings for user profiles stored on a server. It describes data-center-based systems and server-executed methods for transferring settings associated with user profiles to vehicles using cloud services. Ex. 1001, Title, Abstract. The patent attempts to exploit connectivity offered by cloud systems to provide “automatic settings and synchronization when the user enters the vehicle” *Id.*, 13:2-9. It explains vehicles “communicate wirelessly with Internet services,” which provides access to “settings, configurations, applications, and other customization defined by the user.” *Id.*, 7:9-17. According to the patent, cloud systems enable vehicle users to access the Internet to provide services “in a more effective manner.” *Id.*, 8:59-67. The patent claims such basic and commonplace features as transferring custom setting configurations between vehicles, alleging that its purported invention offers “customization” that “will be facilitated via a website.” *Id.*, 7:38-58.

The patent illustrates its allegedly inventive method of user interaction with a cloud-based vehicle login system in Fig. 1 (below). *Id.*, 15:62-16:12. The patent states “[t]he user supplies login credentials to a vehicle login interface which are sent to the remote distributed or centralized user login authentication system or onboard vehicle authentication system,” and if authenticated, the vehicle “has vehicle settings applied to it and the user is allowed to operate the vehicle.” *Id.* If not, “the user is presented with a failed access notification on the login interface.” *Id.*



One consequence of Internet connectivity observed by the patent is that vehicle functions can be monitored or restricted, which can be done for “safety

considerations while driving.” *Id.*, 9:66-10:14. To this end, the patent claims at least some of the settings associated with a user profile being “restricted for use on the vehicle.”² As an example of “applying” settings restrictions, “if a particular application requires entry of text, navigation of controls, or other activities that would distract the driver during operation of the vehicle, such [actions] . . . can be temporarily disabled.” *Id.*, 12:2-9. Additionally, in describing Fig. 4, which Applicant relied on to introduce the “restriction” feature to the claims (*infra*, III.B), the patent explains that “location based settings allow[] an administrator to draw out a map of the area the user login CHILD is allowed to travel within while logged into the vehicle.” Ex. 1001, 16:44-60. Other restricted settings include “fuel use,” “speed restrictions,” “time specific driving,” and “purchase settings.” *Id.*, Fig. 4.

² The issued claims are incomplete (*infra*, III.D), with independent claims 1 and 17 omitting the limitation “at least one of said plurality of settings being restricted for use on the vehicle,” which Applicant added in prosecution to overcome prior art (*infra*, III.B). As of filing this Petition, Patent Owner’s COC request has not been acted upon. However, for this IPR, Petitioner addresses the limitations proposed by the COC so the Board can institute review whether the COC issues or not.

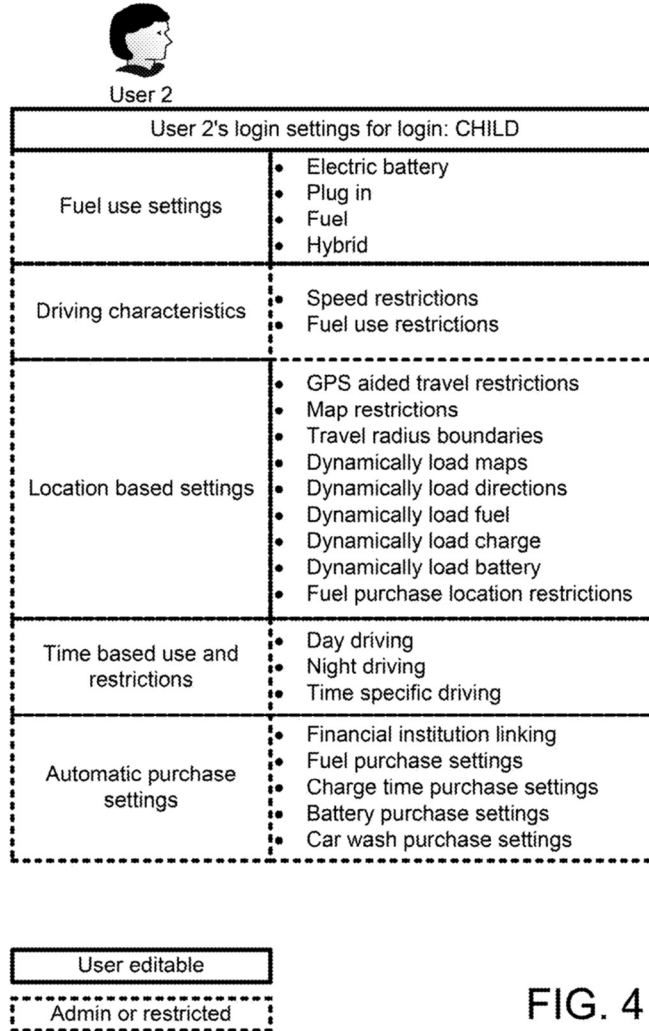


FIG. 4

On the other hand, as shown in Fig. 5 (below), other settings, like “comfort” settings, including “climate, seats positions, seat heater/cooler,” may be “configurable by the user.” *Id.*, 16:61-17:7. Still, these types of settings can also be restricted by the administrator. *Id.*, 14:5-26 (“Login settings that can be set and remotely administered include . . . entertainment system settings (radio memory settings, internet access or restriction, streaming services settings) . . .”).

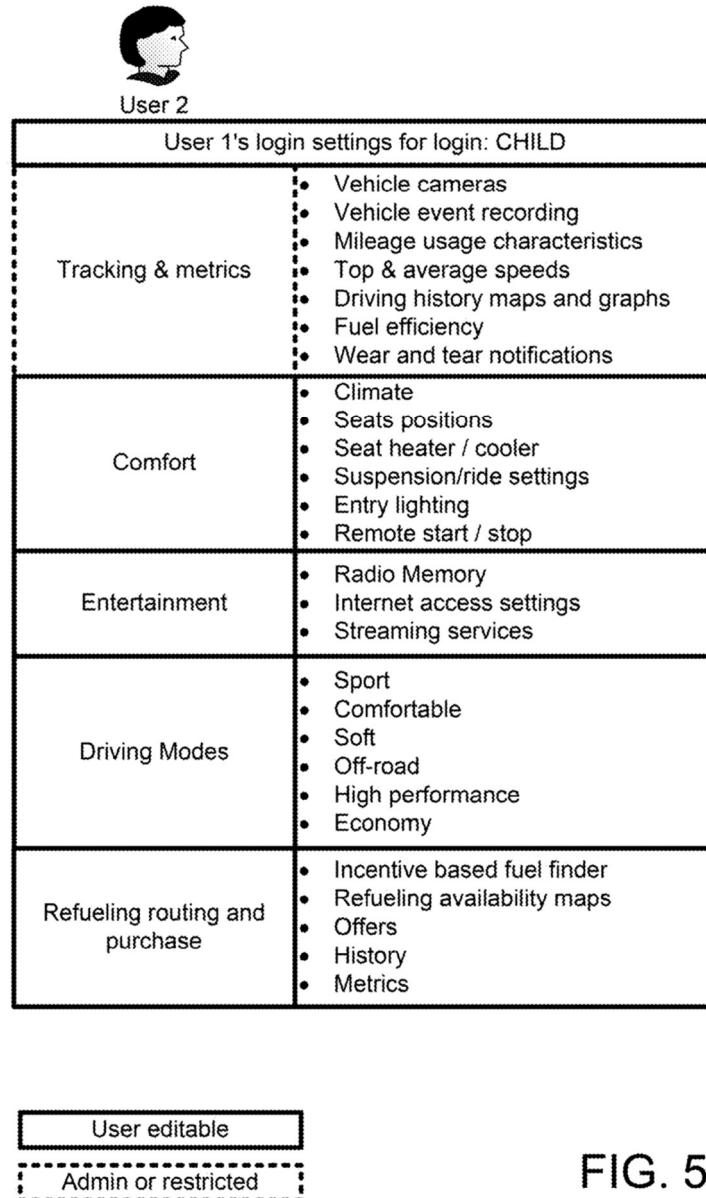


FIG. 5

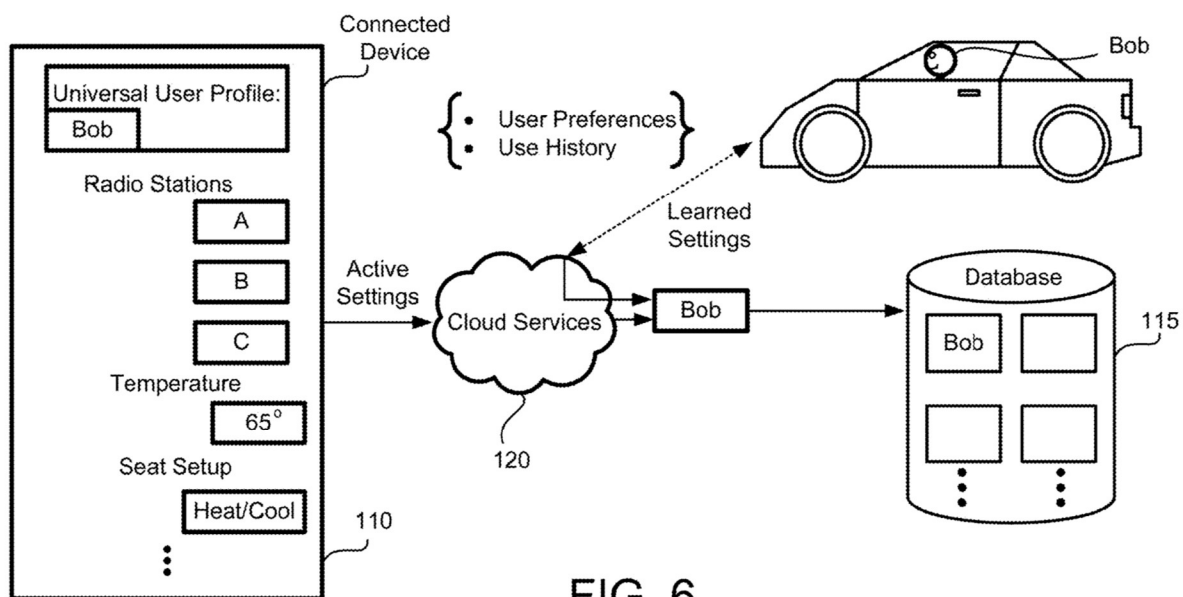
'244 patent Fig. 5 (note restricted settings in dashed lines)

The patent also claims a “learning engine” learns the user’s preferences and generates a “recommended setting.”³ The specification does not describe a

³ The patent entirely omits claims 21 and 22, reciting a “learning engine.”

“learning engine,” and indeed, mentions the term only once. *Id.*, 7:22-27; *see also id.*, 31:41-45 (admitting well-known elements are not described in detail).

Regarding “learning” in general, the specification states “Bob’s profile can include specific settings, preferences, use history, and learned settings from earlier uses of one or more vehicles.” *Id.*, 17:21-23, Fig. 6 (below).



B. File History

During prosecution, Applicant narrowed claims to overcome prior art. In independent claims 1 and 17, Applicant added that “at least one of said plurality of settings [is] restricted for use on the vehicle.” Ex. 1002, 198-203. Applicant argued that the cited art did not disclose “that at least one of said settings are restricted for use on the vehicle.” *Id.*, 206. Applicant characterized the primary cited reference (U.S. 2007/0207789, “Zellner”) as disclosing “all of the settings are preferences of

the user.” *Id.* However, allegedly in contrast to Zellner, Applicant’s claimed invention was directed to “enforcing a restriction upon a setting preference that the user *may have wanted set*.”⁴ *Id.* That is, the claimed setting is something the user may have wanted to set but is restricted from setting (like an entertainment setting). According to Applicant, “the restriction can be set for the vehicle by an administrator, e.g., which could be the owner of the vehicle or entity that has control of the vehicle, e.g., the manufacturer, the leasing entity, the sharing entity, a parent, an owner, etc.” *Id.* Applicant relied on Figs. 4 and 5 as examples of “how some settings may be restricted.” *Id.* Fig. 5 shows “entertainment” settings, which are one type of setting that may be restricted by the administrator. Ex. 1001, 14:5-26.

Together with amending independent claims 1 and 17, Applicant also added new independent claim 21, which “parallels original claim 17 with added limitations related to a learning embodiment.” Ex. 1002, 207.

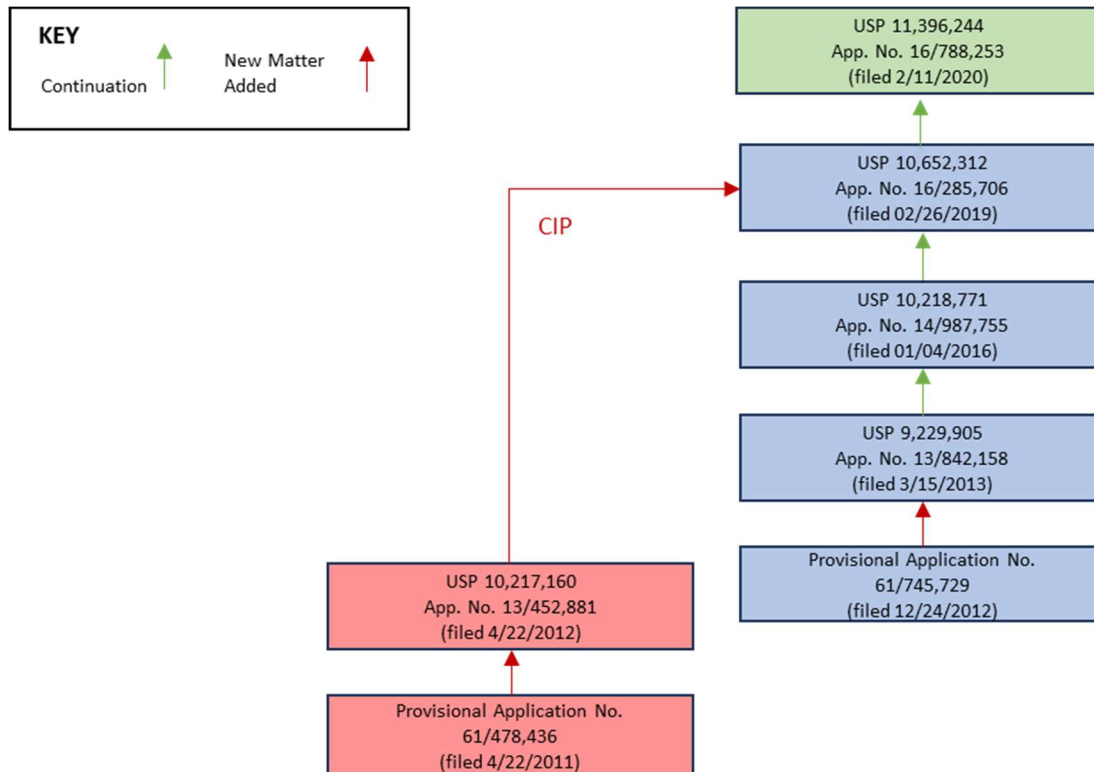
After amending, the Examiner allowed the claims because the cited art apparently did not disclose all the elements of the independent claims, including “the profile having a plurality of settings of the user for the vehicle and at least one of said plurality of settings being *restricted for use on the vehicle*.” *Id.*, 213-214.

⁴ All emphasis added unless otherwise indicated.

The Examiner did not reference claim 21.

C. Effective Filing Date – No Earlier than March 15, 2013 or December 24, 2012

Application 16/788,253, which led to the '244 patent, was filed February 11, 2020, and claims priority to a series of applications, as illustrated below:



The challenged claims are not entitled to the filing dates of Provisional Application 61/478,436 or Application 13/452,881 (in red above) because those do not describe the subject matter of the claims as required by 35 U.S.C. § 112, ¶ 1. *See also* Ex. 1005, ¶¶ 70-84.

Some of the challenged claims have, at best, priority to Provisional Application 61/745,729. Claims 5-8, 21, and 22, however, which recite a “learning

engine” among other things, have a priority date of no earlier than March 15, 2013, because the “learning engine” subject matter first appeared in Application 13/842,158. For example, Provisional Application 61/745,729’s disclosure of “history” relates to “history of rout[e]s taken,” Ex. 1003, ¶ [0026], or battery “charge history,” *id.*, ¶ [0059], and does not support the “learning engine” subject matter. Ex. 1005, ¶ 83. Claim 4, reciting a server determining settings to update based on inputs made to systems of the vehicle during use, while the vehicle is associated with the profile of the user account, is entitled to a priority date of no earlier than March 15, 2013, the date this subject matter first appeared. The remaining challenged claims are entitled to a priority date of no earlier than December 24, 2012. Regardless, Provisional Application 61/745,729 was not filed early enough to antedate any of the prior art in this petition.

D. Certificate of Correction

Recognizing that “errors appear” in the ’244 patent, Patent Owner requested the ’244 patent be “corrected” to list claims that were “examined and allowed.” Ex. 1002, 627, 634. Whether a Certificate of Correction (“COC”) issues or not, the challenged claims are unpatentable because the prior art discloses all claimed features, including the omitted limitations that Patent Owner added to overcome art cited in prosecution.

IV. Level of Ordinary Skill

A POSA 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. Additional education (e.g., Master's degree in electrical engineering, computer science, or equivalent) could substitute for professional experience and vice-versa. Ex. 1005, ¶ 89.

V. Claim Construction

No terms of the patent need construction for the purposes of IPR because the claims read on the prior art below under any construction consistent with *Phillips*.

VI. Claims 1, 2, 4-22 Are Unpatentable Over Prior Art

A. Ground 1: *Rector* in combination with *Kleve* renders claims 1, 9, 11-17, 19, 20 obvious

1. *Rector*

Rector, entitled "Devices, Systems and Methods for Controlling Permitted Settings on a Vehicle," acknowledges the same safety concerns the '244 patent purports to have recognized years later, namely, that certain controllable features and settings of vehicles may contribute to driver distractions. *Compare* Ex. 1006, Title, ¶ [0005], *with* Ex. 1001, 12:2-15. Just like the '244 patent, *Rector* is directed to "alleviat[ing] some of [the] distractions" facing immature or inexperienced drivers. Ex. 1006, ¶¶ [0004]-[0007]. It discloses ways to alter the permitted settings

of a vehicle according to a driver's identity. *Id.*, ¶ [0008]. And just like the '244 patent, *Rector*'s administrator (e.g., a parent) can impose restrictions on their child's vehicle use. *Compare id.*, ¶¶ [0032]-[0033] ("The parent may prohibit these stations [and other settings] in the settings for the child."), *with* Ex. 1001, 11:22-32 ("[T]he child can be provided with restricted use of the vehicle.").

Rector describes a smart vehicle capturing a unique identifier from a driver, which is used to reference a database to determine settings. Ex. 1006, ¶ [0023]. These settings may be set by a "controlling authority," which may be, e.g., "a parent." *Id.* The settings "may limit certain devices within the smart vehicle and/or the smart vehicle itself," such as "radio settings, wireless communication device settings, and various other settings . . . to limit distractions to the driver." *Id.*, ¶ [0008]. Fig. 1 (below) illustrates a smart vehicle 100 wirelessly communicating with a settings server 130 via network 140. *Id.*, ¶ [0030].

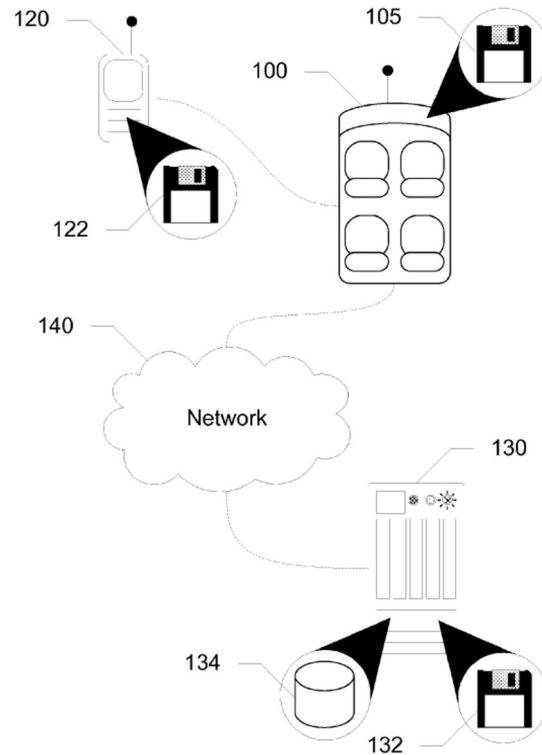


Figure 1

In *Rector*'s Fig. 3 (below) a driver is identified (S351), his/her settings are looked up and transmitted to the vehicle (S352), and then, restrictions are applied to prevent the driver from adjusting vehicle features in an impermissible manner (S354 and S356). *Id.*, ¶ [0043]. *Rector* explains that steps are performed with a server, e.g., “transmit[ing] the unique identifier . . . to settings server 130” and “compar[ing] with a set of unique identifiers,” “server logic 132 match[ing] the driver’s identity with corresponding settings from database 134 on settings server 130,” and the server “transmit[ing] the permitted settings to the client logic.” *Id.*, ¶¶ [0031], [0043], claim 1.

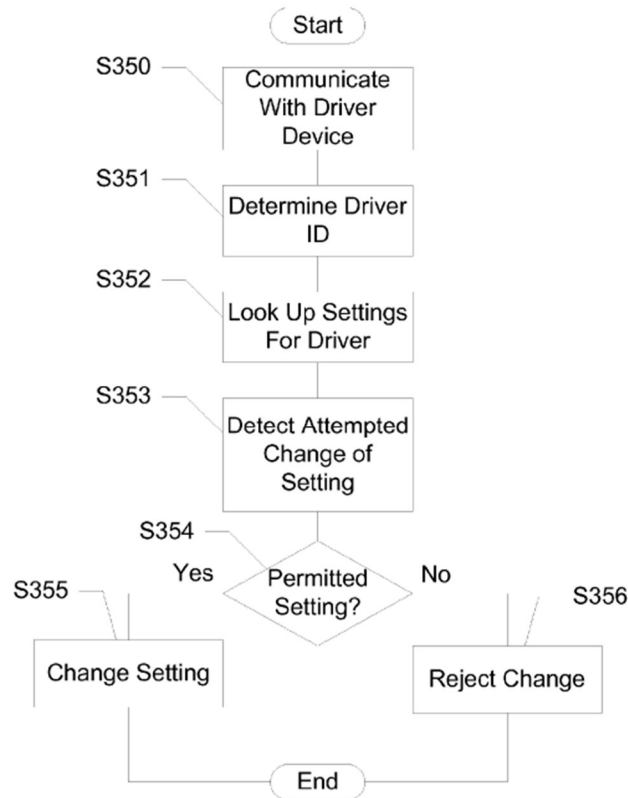
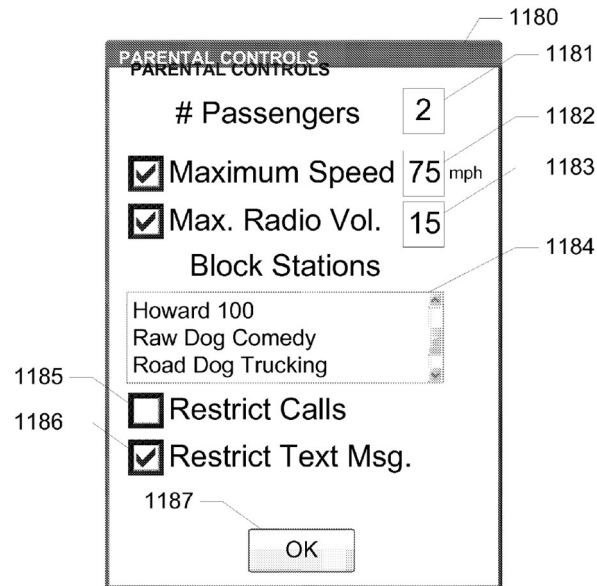


Figure 3

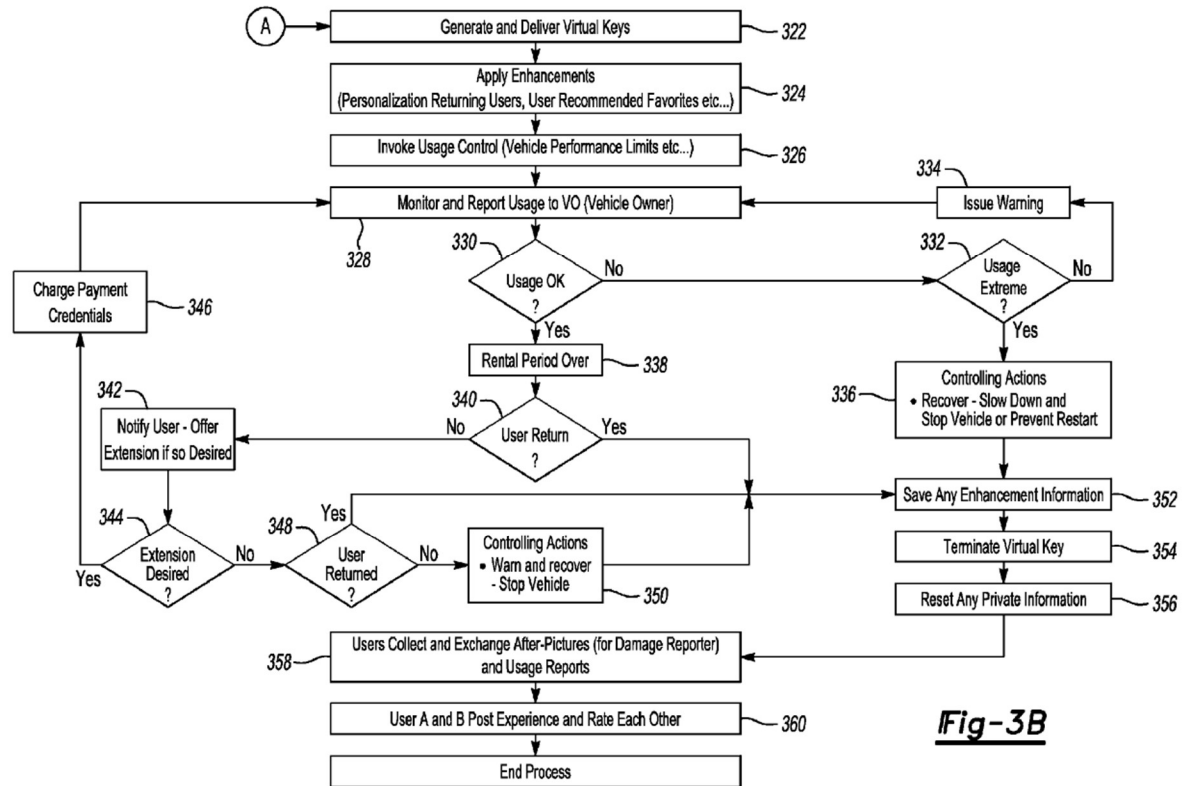
In one example, if the driver attempts to raise the radio volume above permitted levels, such change is rejected. *Id.*, ¶ [0043]. Similarly, if the driver attempts to change the radio to restricted channels, such change is blocked. *Id.*, ¶¶ [0043], [0059], Fig. 11 (below).



2. *Kleve*

Kleve, entitled “Credential Check and Authorization Solution for Personal Vehicle Rental,” is directed to a rental car system using “cloud computing” where vehicle owners and temporary users create website accounts for short-term vehicle rentals. Ex. 1007, Title, Abstract, ¶¶ [0036], [0056]. *Kleve* discloses that once the owner and temporary user come to an agreement, which includes having restrictions made on vehicle usage, and when the temporary user is authorized/verified, the server will transmit a “virtual key” to the temporary user’s mobile device which can unlock the vehicle. *Id.*, ¶¶ [0036]-[0049]. *Kleve* also discloses the “Temporary User may have vehicle preset settings applied,” such as “radio presets, seat and mirror position” and other “personalization” when renting the vehicle. *Id.*, ¶ [0050], Fig. 3B (below). Also, the “Temporary User may set up a

user profile,” with details about the vehicle he/she intends to rent. *Id.*, ¶¶ [0037], [0086].



Kleve explains that its processes “may be executed by a computing system in communication with a vehicle computing system” which may include “a server.” *Id.*, ¶ [0035]. *Kleve* describes “remote credential verification . . . using a server.” *Id.*, ¶ [0049]. In particular, the temporary user “enter[s] a credential verification password at the vehicle’s touchscreen” and the “server . . . [will] compare and verify authorization.” *Id.*; see also *id.*, ¶ [0048] (“credential authorization may be processed by . . . a server . . .”).

Fig. 6 illustrates a rental system with verification of renter credentials by a server, and thereafter allowing vehicle access and applying personal settings. *Id.*, Fig. 6.

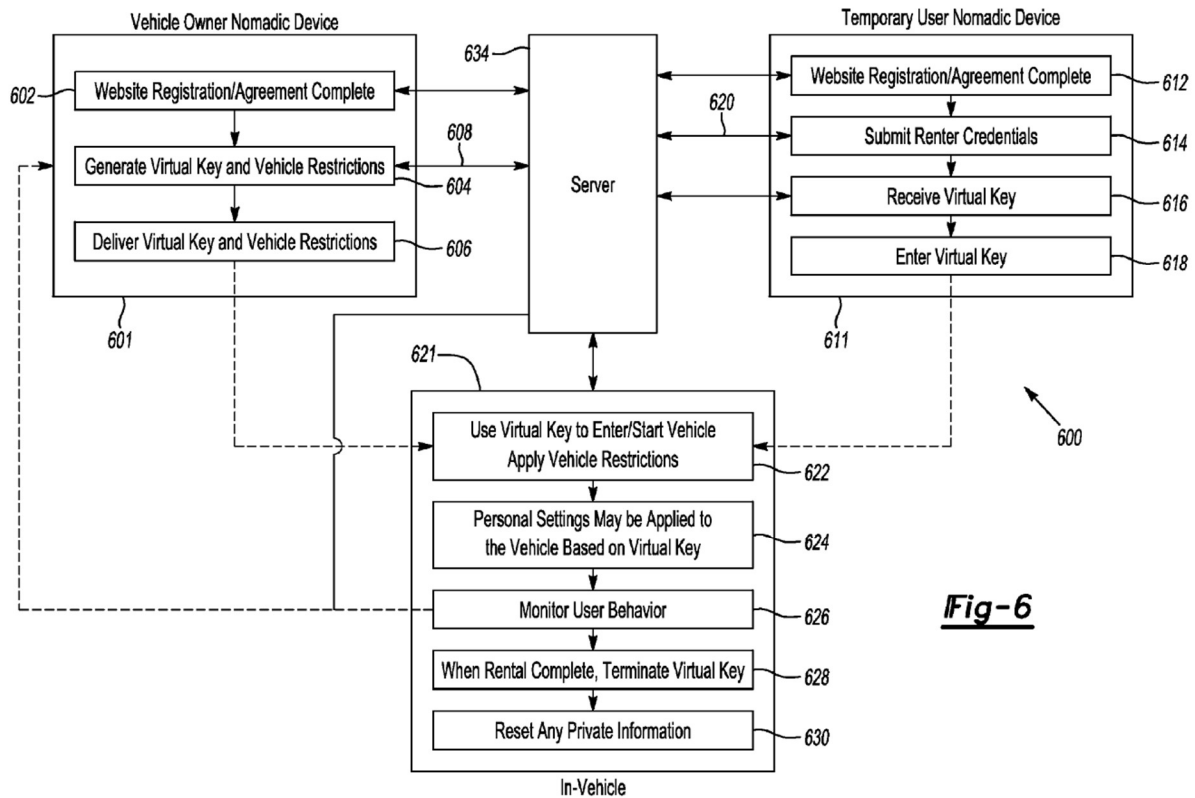


Fig-6

3. Independent Claim 1

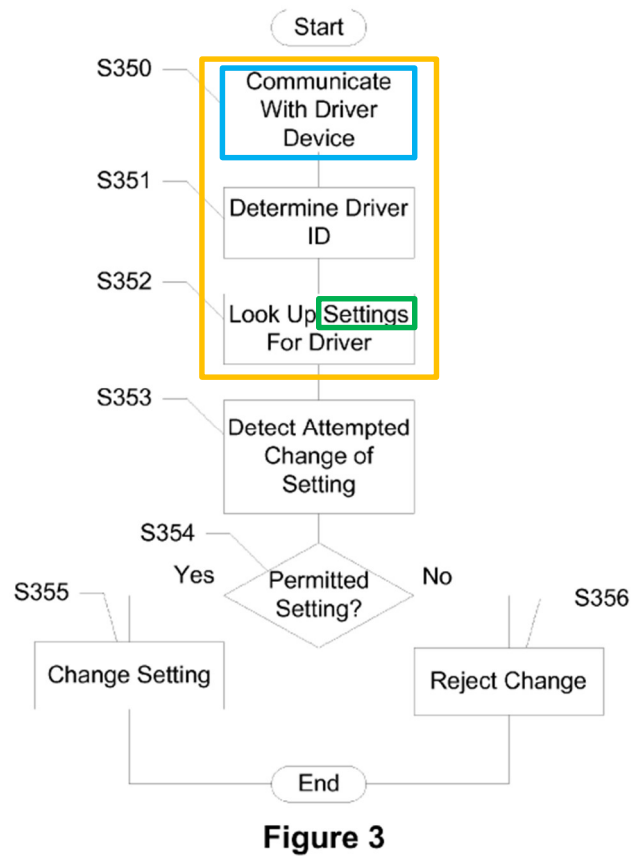
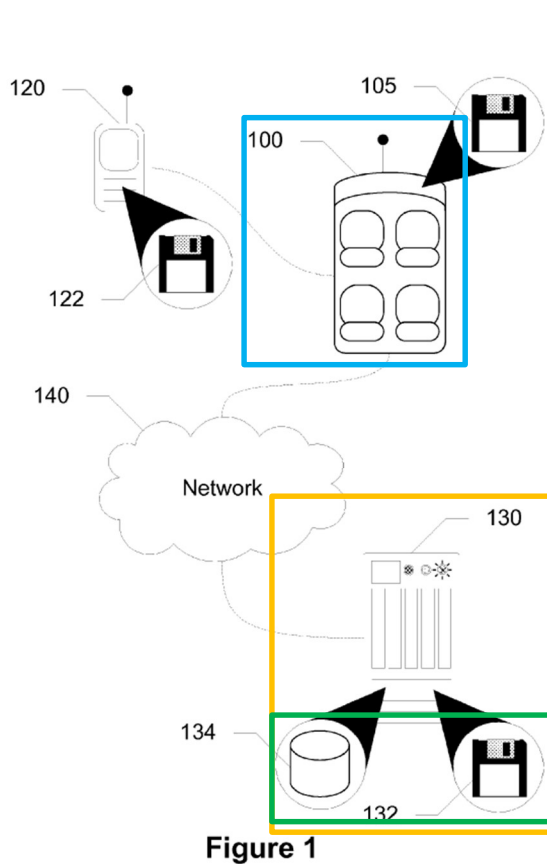
1[preamble]: “A method executed by a **server of a cloud services system that is configured to interface with vehicles, comprising:”**

To the extent the preamble is limiting, *Rector* discloses it. Ex. 1005, ¶ 108. *Rector* discloses a method (e.g., Fig. 3) “for controlling a driver’s settings” using a network, which may include a “**complex of servers.**” Ex. 1006, Title, Abstract, ¶¶ [0010], [0025]-[0027], [0043]. *Rector* discloses embodiments where a server of

a cloud system transmits driver settings, causing them to be “implement[ed]” by a smart vehicle. *Id.*, ¶¶ [0011], [0031], [0038], [0043], [0057], claim 1. *Rector* states “the present invention is a system for controlling a driver’s settings, the system including a network; [and] a smart vehicle in communication with the network.” *Id.*, ¶ [0009].

1[a]: “receiving, by the server, a request from electronics of a vehicle to access a profile for a user account, the request identifies user information for a user to use the vehicle;”

Rector discloses a request originating from electronics of a vehicle (e.g., request from smart vehicle 100), and which is received by a server (e.g., settings server 130). Ex. 1006, ¶¶ [0008], [0009], [0023], [0030]-[0031]. Such request is to access a profile for a user account (e.g., settings for the driver), and it identifies user information (e.g., unique identifier) for a user to use the vehicle. *Id.* In *Rector*, the user/driver is associated with a “user account,” which “includes several attributes for a particular user, including a unique identifier . . . [and] driver settings, and other information.” *Id.*, ¶¶ [0009], [0027].



Rector states “[s]mart vehicle 100 is in communication with wireless communication device 120 and with settings server 130 over network 140.” *Id.*, ¶ [0030], Fig. 1. Smart vehicle 100 contains client logic 105, which “may be formed from combinations of software and hardware.” *Id.*, ¶¶ [0025], [0030]. Communication between *Rector*’s smart vehicle and other devices “may occur as the driver enters the smart vehicle, as the driver starts the smart vehicle, etc.” *Id.*, ¶ [0043]. Client logic 105 (of the vehicle) “transmits the unique identifier . . . to settings server 130 via network 140.” *Id.*, ¶ [0031]. *Rector* also describes unique identifiers associated with a driver (e.g., his/her device, smart card) detected by

electronics (e.g., transceiver, smart card reader) of the smart vehicle, and then transmitted to a server. *Id.*, ¶¶ [0031], [0055], [0057] (“[T]his information [including the driver’s unique identifier] can be transmitted to a settings server to implement settings for the driver.”).

Rector discloses examples of a server receiving a request from vehicle electronics, as demonstrated by *Rector*’s claims, which recite “a settings server on the network, the settings server including a user account for a user of the wireless communication device, the user account including permitted settings for the user; a client logic on the smart vehicle to retrieve a unique identifier from the wireless communication device and *transmit* the unique identifier *to the settings server*; and a server logic on the settings server to associate the unique identifier with the user account, determine the permitted settings for the user, and transmit the permitted settings to the client logic” *Id.*, claims 1, 11.

1[b]: “processing, by the server, at least part of the user information to verify the user for accessing the profile associated with the user account, the profile having a plurality of settings of the user for the vehicle,⁵ at least part of the plurality of settings for the profile being stored on storage accessible to the cloud services system; and”

⁵ The COC adds “and at least one of said plurality of settings being restricted for use on the vehicle,” Ex. 1002, 636, which *Rector* discloses as discussed below.

A POSA would have been motivated and found it obvious to combine the teachings of *Rector* and *Kleve*, and would have done so for multiple reasons. For example, one would have considered *Kleve* for improving security in *Rector*, and would have a reasonable expectation of success doing so. Ex. 1005, ¶¶ 114-126. *Kleve* states that its system “may be further extended to facilitate the virtual key with additional security by requiring remote credential verification at the vehicle.” Ex. 1007, ¶ [0049]. *Rector* describes secondary sensors, such as biometrics identifiers, used “for security purposes.” Ex. 1006, ¶ [0049]. Thus, *Rector*, which discusses vehicle-side verification, is ready for improvement of its verification method, and applying *Kleve*’s server-side verification would be a natural, straightforward way that its system could be “extended” with “additional security,” as taught by *Kleve*.

Both *Rector* and *Kleve* are analogous art to the claimed invention of the ’244 patent because they are (1) from the same field of endeavor as the claimed invention (i.e., applying settings to vehicles based on user preferences); and/or (2) reasonably pertinent to the problem faced by the inventor (i.e., improving application of settings to vehicles). For example, *Rector* emphasizes safety, pointing out risks of driver distractions and aspiring to reduce distractions by “plac[ing] restrictions or otherwise creat[ing] settings for the driver.” Ex. 1006, ¶¶ [0004]-[0007]. *Kleve* recognizes the importance of “safe . . . continued

operation,” and describes monitoring the use of the vehicle and applying restrictions, if necessary (e.g., when operating under excessive/extreme conditions). Ex. 1007, ¶¶ [0040], [0053], [0079]. Both *Rector* and *Kleve* pertain to transmitting and applying user settings to a vehicle in improved (e.g., more convenient/secure) ways. Ex. 1006, ¶¶ [0049], [0059]; Ex. 1007, ¶¶ [0049], [0050], Fig. 3B. Furthermore, both *Rector* and *Kleve* describe “settings” as including multimedia settings, such as preferred radio stations. Ex. 1006, ¶¶ [0008], [0023]; Ex. 1007, ¶¶ [0050], [0072].

Turning to the references, *Rector*’s step S351 determines the driver identity, which may be performed by comparing the unique identifier “with a set of unique identifiers on a server on a network.” Ex. 1006, ¶ [0043].

Rector states that its server “associate[s] the unique identifier with the user account, [and then] determine[s] the permitted settings for the user.” *Id.*, ¶ [0009], claim 1. *Rector*’s method

comprises “look[ing] up settings for the driver.” *Id.*, ¶ [0043]. And such settings include “driver created settings as well as controlling authority settings, such as parental controls, based on the driver’s identity” *Id.*, ¶ [0031].

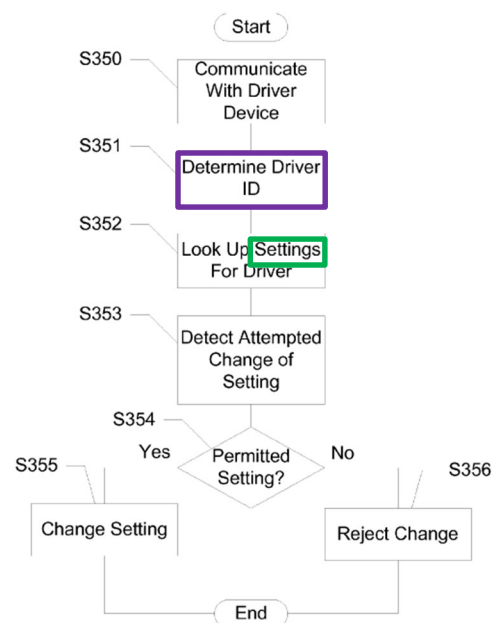


Figure 3

Rector discloses driver association or verification, including “allowing the settings control system to **verify** that the correct party is determined to be the driver and appropriate settings are enforced.” *Id.*, ¶ [0047]. This includes using “biometric identifier 514, for instance, a fingerprint scanner . . . to associate the driver with a user account” and ensure “the appropriate settings [are] put in place.” *Id.*, ¶ [0049]; *see also* Ex. 1005, ¶ 119.

To the extent element 1[b] is interpreted to require the *server* to “**verify the user** for accessing the profile associated with the user account,” it would have been obvious to modify *Rector* such that verification is performed by the server, as in *Kleve*. Ex. 1007, ¶ [0049]; Ex. 1005, ¶¶ 120-125. This would be an example of a system being “further extended . . . with additional security,” as taught by *Kleve*. *Id.*

Kleve teaches **processing, by the server**, (e.g., **server 401, 506, or 634**) at least part of the **user information** (e.g., **credentials**) to **verify the user** (e.g., performing **remote credential verification**) for accessing the profile associated with the user account, the profile having a plurality of **settings** (e.g., **personal settings/radio presets**) of the user for the vehicle. *Kleve* shows steps 614/620 of submitting renter credentials (e.g., login ID and password, fingerprint/facial recognition) to server 634. Ex. 1007, ¶ [0069], Fig. 6 (below). *Kleve* also explains its process of remote credential verification includes “the Temporary User entering a credential verification password . . . while having the . . . server . . . compare and

verify authorization.” *Id.*, ¶ [0049]. *Kleve* explains that this process provides access for the renter/temporary user to use the vehicle and apply enhancements/personal settings to it, including “radio presets.” *Id.*, ¶¶ [0049], [0072]. Additionally, *Kleve* acknowledges that the temporary user has a user account/user profile that can be set up and managed via a website. *Id.*, ¶ [0037].

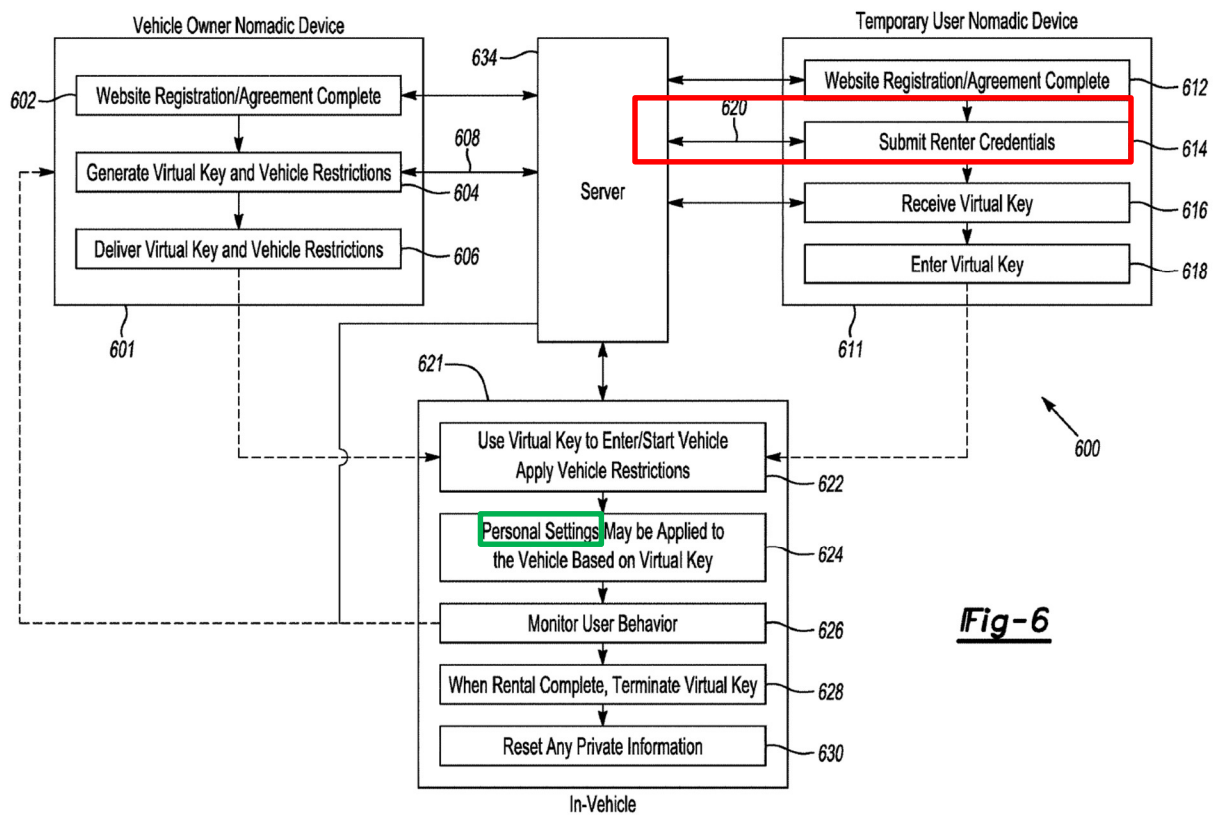


Fig-6

It would have been obvious to modify *Rector*’s method of controlling driver settings to include server-side verification, as in *Kleve*, for additional security. Ex. 1005, ¶ 122; Ex. 1006, ¶ [0049]. For example, before “implementing settings based upon the driver” in *Rector*, one would have been motivated and found it obvious to verify the driver’s credentials using the server, as in *Kleve*. Ex. 1007, ¶ [0049]. A

POSA would have a reasonable expectation of success combining *Rector* and *Kleve* because both explain that the processing capabilities of servers can be used for various processes of connected systems; that is, implementing *Kleve*'s server verification would have been within the capability of *Rector*'s server. Ex. 1005, ¶ 122.

Next, *Rector* discloses that at least part of the plurality of **settings** for the profile is **stored on storage accessible** to the cloud services system (e.g., **database 134 on settings server 130**). Ex. 1006, ¶ [0031] (“settings *from database 134 on settings server 130*”). Additionally, *Rector* discloses “the **settings** may be stored on . . . the **memory** of the smart vehicle.” *Id.*, ¶ [0038]. The smart vehicle's storage is also accessible to the cloud services system. *Id.*

Assuming the COC is considered, such that claim 1 also recites “**at least one of said plurality of settings being restricted for use on the vehicle,**” *Rector* discloses this limitation too. Ex. 1005, ¶¶ 124-126. Indeed, *Rector* centers on “plac[ing] **restrictions**” on settings for a driver. Ex. 1006, ¶ [0007]. *Rector* discloses, for example, client logic of the smart vehicle “comparing the detected attempted change with the **database** of permitted or **prohibited settings** for the driver.” *Id.*, ¶ [0043]. “If the change in setting is permitted, the change is allowed S355” but “[i]f the attempted setting is **not permitted**, the setting is **rejected** S356.” *Id.*

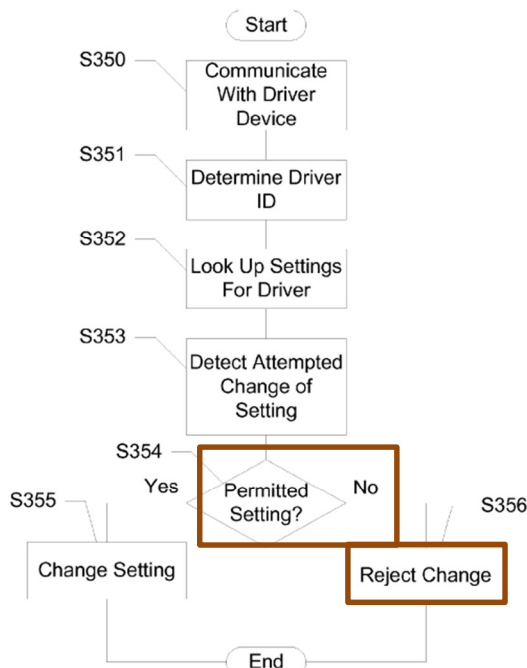


Figure 3

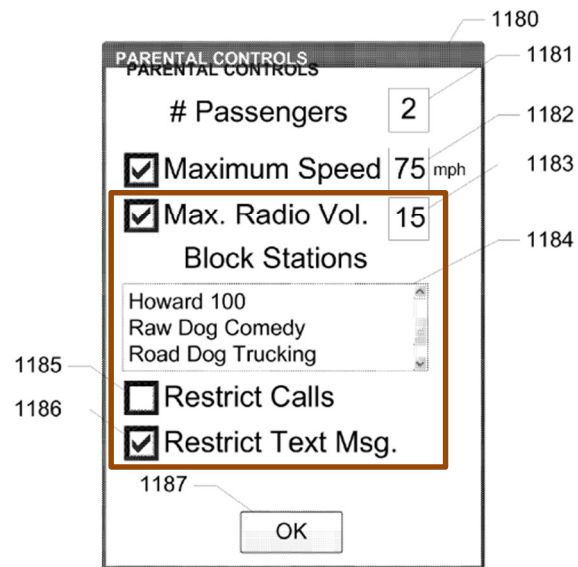


Figure 11

Rector gives examples of **restricted settings**, such as “maximum radio volume,” “blocking certain radio stations,” “prevent[ing] the driver from receiving calls,” “prevent[ing] the driver from creating text messages,” or otherwise “limiting services offered” *Id.*, ¶ [0059], Fig. 11.

1[c]: “transferring, by the server, upon verifying the user information, one or more settings of the plurality of settings to⁶ the vehicle,”

Rector discloses its **server** “transmit[s] the permitted **settings** to the client logic [on the smart vehicle], wherein the client logic limits functions of the smart

⁶ The COC adds “**storage of**” (the vehicle), Ex. 1002, 636, which *Rector* discloses as discussed below.

vehicle based upon the permitted **settings**.” *Id.*, ¶ [0009]; Ex. 1005, ¶¶ 127-128.

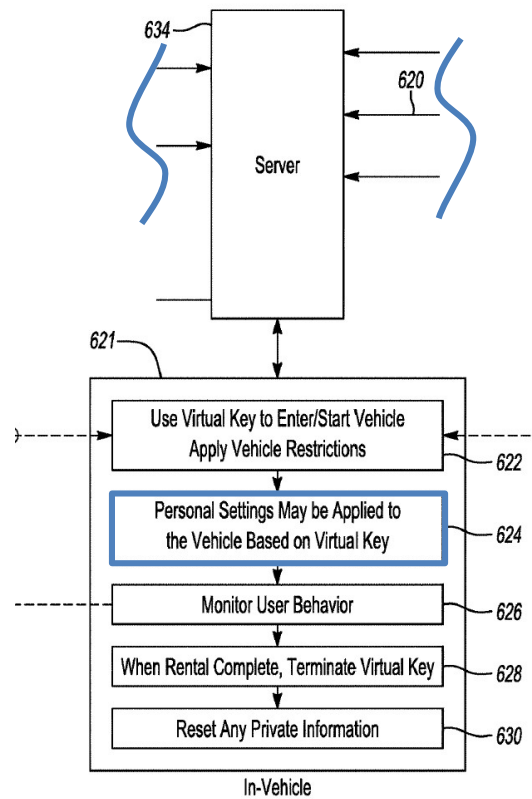
Rector’s “permitted settings” can include “prohibition[s],” such as “a prohibition of the use of a function of the wireless communication device.” Ex. 1006, claim 7.

Also, as in Fig. 3 (above), transmission of settings occurs after step S351 of determining the driver ID. *Rector* discloses implementing the **settings** only upon determining driver identity. *Id.*, ¶¶ [0010], [0043], [0057].

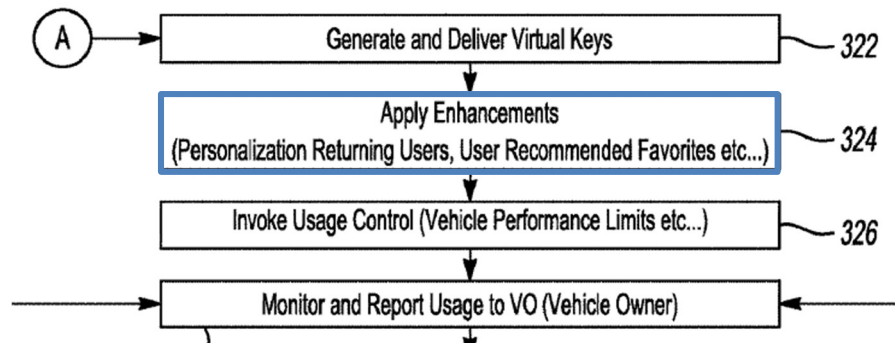
These disclosures are reflected in *Rector*’s claims as well, which recite “a **server logic on the settings server** to associate the unique identifier with the user account, determine the permitted settings for the user, and **transmit** the **permitted settings** to the client logic.” *Id.*, claim 1.

To the extent Patent Owner argues *Rector* does not explicitly disclose the *server* **verifying** the user information, upon which step the server then transfers one or more settings of the plurality of settings, it would have been obvious to modify *Rector* such that verification occurs using the server, as in *Kleve*. *See supra*, VI.A.3.1[b]. In combining *Rector* with *Kleve*, as discussed above, it follows that settings would be transferred upon verification, occurring at the server.

For example, *Kleve* shows personal settings being applied after the user is verified. Ex. 1007, Fig. 6 (excerpted below).

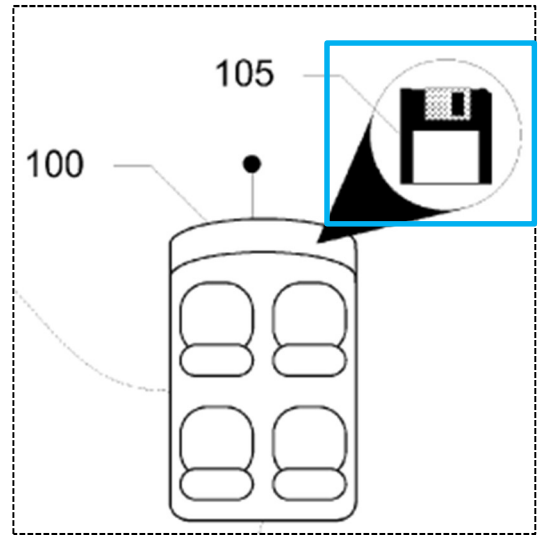


Kleve also shows enhancements, including personalization (radio presets, seat and mirror positions) in step 324, being applied after remote credential verification in step 304. *Id.*, ¶¶ [0049]-[0050], Fig. 3B (excerpted and annotated below).



It would have been obvious to modify *Rector*'s method of controlling driver settings to transmit settings upon verifying user information by the server, as in *Kleve*, as it would be a natural consequence of adding security by including the server-side verification of *Kleve*. Ex. 1005, ¶ 131.

Furthermore, assuming the COC is considered, such that claim 1 also recites “storage of,” *Rector* discloses this limitation too. As discussed above, *Rector* discloses one or more settings being sent to client logic of the smart vehicle. Ex. 1006, ¶ [0009], claim 1. *Rector* explains that logic, such as the client logic, encompasses storage (e.g., memory). *Id.*, ¶¶ [0024]-[0025], [0030].



Further, *Rector* shows in Fig. 1 (excerpted, right) an example of client logic 105 encompassing a storage medium on smart vehicle 100. *Rector* explains “the settings may be stored on . . . the memory of the smart vehicle.” *Id.*, ¶ [0038].

1[d]: “the transferring is configured to instruct software and/or hardware associated with said electronics of the vehicle to apply said one or more settings to the vehicle for customizing said vehicle to use said one or more settings associated with the profile,”

As above, *Rector* discloses its server “transmit[s] the permitted settings to the client logic [of the smart vehicle.]” *Id.*, ¶ [0009], claim 1. These transmitted

settings cause the client logic to implement them. *Id.* (“[T]he client logic limits functions of the smart vehicle based upon the permitted settings.”).

Rector also explains client “logic” implementing the setting instructions can be “software” or “hardware,” or both. *Id.*, ¶ [0025] (“Logic may be formed from combinations of software and hardware.”). Further, *Rector* explains that its client logic can take the form of “instruction signals and/or data that may be applied to direct the operation of a processor.” *Id.* Thus, *Rector*’s server instructs the client logic to apply the settings. Ex. 1005, ¶¶ 134-137.

Element 1[d] recites that the “transferring is configured to instruct software and/or hardware . . . to apply said one or more settings . . . to use said one or more settings” The earlier recited “transferring” is a step executed by the server. *Supra*, VI.A.3.1[c]. To the extent this recitation of 1[d] has any limiting effect on the claimed “transferring” step, *Rector* discloses it. Ex. 1005, ¶ 136. For example, *Rector* states “[t]he settings may limit certain devices within the smart vehicle and/or the smart vehicle itself.” Ex. 1006, ¶ [0023]. *Rector* discloses numerous examples of the ways that software or hardware of the smart vehicle is instructed to apply the settings for customizing the vehicle. *See, e.g., id.*, ¶¶ [0031]-[0034], [0038], [0043], [0057], [0059]. *Rector*’s server makes a transmission to the vehicle (or storage thereof), and then hardware/software of the vehicle (e.g., client logic) simply follows instructions to “implement” settings for the driver.” *Id.*, claim 1

("[A] server logic on the settings server to . . . transmit the permitted settings to the client logic, wherein the client logic [of the vehicle] limits functions of the smart vehicle based upon the permitted settings."). *Rector* is thus capable of satisfying, and does satisfy, this element.

1[e]: "wherein the vehicle uses wireless communication for exchanging data with the cloud services system and for receiving said one or more settings for the profile."

Rector describes "[w]ireless communication devices communicate with each other and with other elements via a network" *Id.*, ¶ [0026]; Ex. 1005, ¶ 138. For example, "[s]mart vehicle 100 is in communication with wireless communication device 120 and with settings server 130 over network 140." Ex. 1006, ¶ [0030], Fig. 1 (below, left). One example of *Rector*'s network includes a broadband network. *Id.*, ¶ [0026].

Rector explains "[t]ransceiver 206 allows smart vehicle 200 to wirelessly communicate with other devices on a network. . . ." *Id.*, ¶ [0039]. Such communication includes client logic (of the vehicle) sending/receiving the unique identifier, *id.*, ¶¶ [0040], [0057], and the server transmitting the settings to the vehicle, *id.*, ¶ [0009]. *See also supra*, VI.A.3.1[d]; Ex. 1006, ¶ [0040], Fig. 2 (below, right, illustrating transceiver 206 ("Trans")).

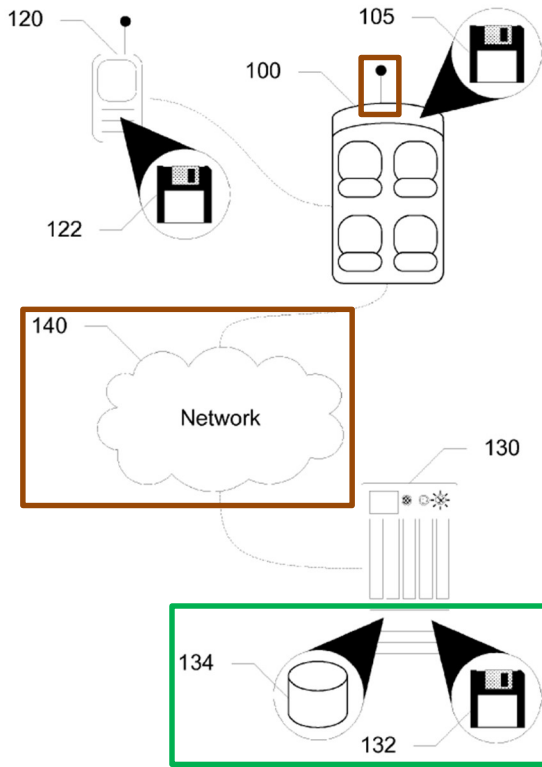


Figure 1

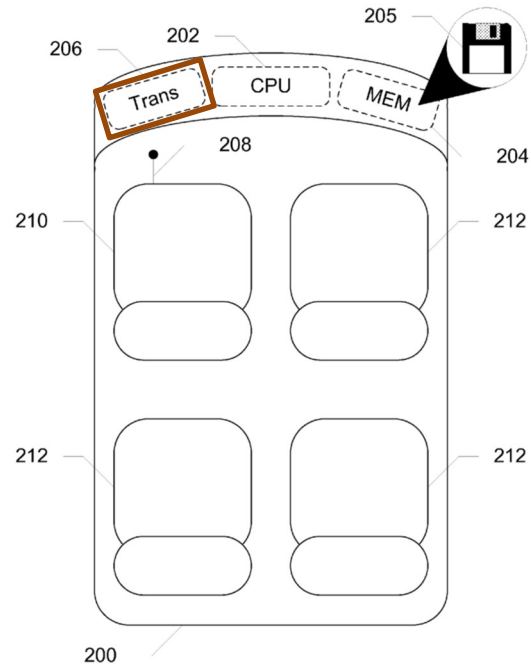


Figure 2

4. Claim 9

9: “The method of claim 1, wherein the **request** is **automatically generated by the electronics of the vehicle** upon detecting a **pairing** with a user device of the user, or **input of credentials** of the user for the user account.”

Rector discloses that the **request** (e.g., **unique identifier**) is **automatically generated by the electronics of the vehicle** upon detecting a **pairing** with a user device of the user (e.g., **pairing via Bluetooth, RFID, or other protocol** with the driver’s device). Ex. 1005, ¶¶ 142-149.

Rector discloses that the driver can use a wireless communication device 120 that may be “a cellular telephone or a contactless smart card,” which

communicates with smart vehicle 100 to identify the driver. Ex. 1006, ¶ [0030].

Rector describes an embodiment in which a **unique identifier** is associated with a driver's device (e.g., cellphone or smart card) that is detected by **electronics** (including **transceiver** or **smart card reader**) of the vehicle. *Id.*, ¶¶ [0030], [0040], [0055], [0057]. *Rector* states that the process of receiving the **request** (e.g., **unique identifier**) is initiated “with the smart vehicle communicating with a driver's device” (i.e., automatically) and includes then “compar[ing] with a set of unique identifiers on a server on a network.” *Id.*, ¶ [0043]. *Rector* describes, for example, a passive RF system that causes a **unique identifier** to be transmitted when communication between **electronics of the smart vehicle** and the user's device is established (i.e., automatically). *Id.*, ¶¶ [0056]-[0057]. “Upon a determination of the driver's identity, this information can be transmitted to a settings server to implement settings for the driver.” *Id.* The “information” includes the unique identifier, upon which the driver's identity is determined. *Id.*

Communication between vehicle and user device in *Rector* may be by radio, short range, or other wireless networks, including **WiFi, Bluetooth, NFC, Zigbee, infrared, RFID, etc.** *Id.*, ¶¶ [0026], [0039], [0043]. Thus, *Rector* discloses automatically generating the **request** (e.g., **unique identifier**) upon detecting a **pairing** (e.g., **pairing via Bluetooth**) with the driver's device (e.g., cellphone, smart card). *Id.*

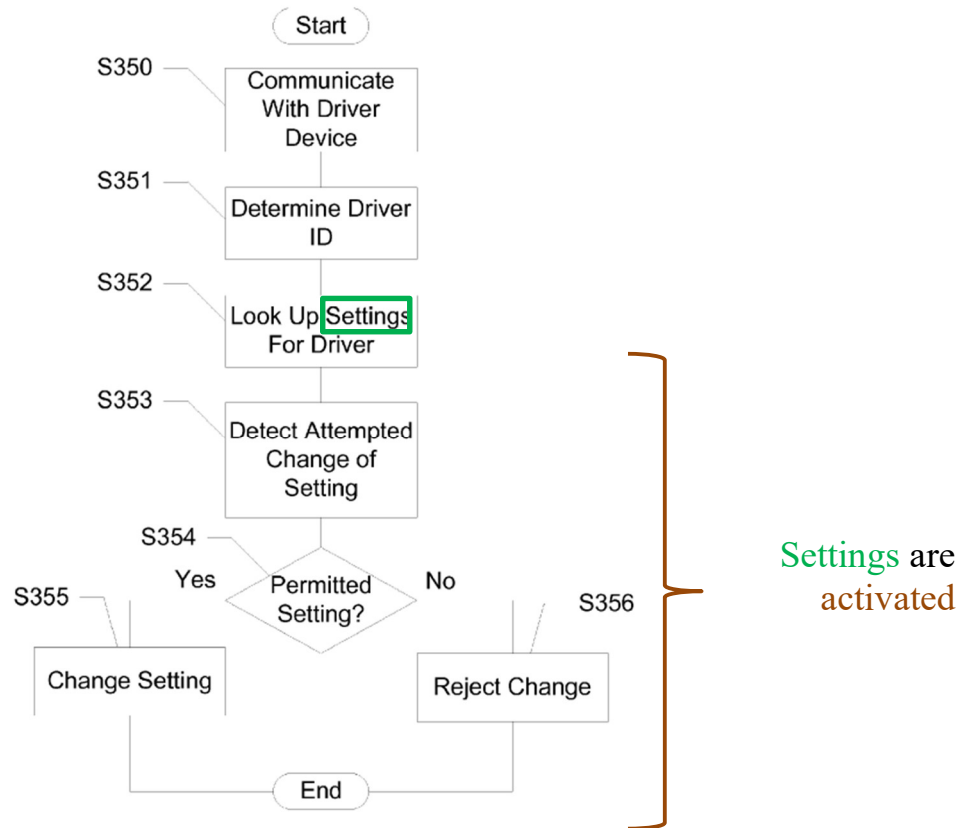
Additionally (or alternatively), *Kleve* teaches automatically generating a request by electronics of the vehicle upon input of credentials of the user for the user account. Ex. 1005, ¶¶ 146-148. In combining *Rector* and *Kleve*, *see supra*, VI.A.3.1[b]-[c], it would have been obvious to have a request that identifies user information (e.g., *Kleve*'s "enhancements" or other personalization) be automatically generated upon input of credentials (e.g., *Kleve*'s temporary user entering a credential verification password at the vehicle's touchscreen, or providing a barcode for scanning at the vehicle). Ex. 1007, ¶¶ [0044], [0049]-[0050]. *Kleve* explains, for example, after input (e.g., entering) of user credentials, "[a]t 324, the Temporary User may have vehicle preset settings applied" *Id.*, ¶ [0050]. A POSA would have been motivated to combine and had a reasonable expectation of success in combining *Rector* and *Kleve* in this manner because, as *Rector* and *Kleve* both demonstrate, the predictable result of pairing a device or entering credentials at a vehicle is that the vehicle may generate a request to prepare the vehicle for the user's use, by using the vehicle's onboard processor. Ex. 1005, ¶¶ 147.

5. Claim 11

11: “The method of claim 1, wherein the **profile is **activated** on the vehicle when the user information, including **biometrics data**, is activated.”⁷**

Rector explains that the **profile** (e.g., the driver’s **settings**) is activated after identifying the driver. Ex. 1006, Fig. 3 (below), ¶¶ [0043] (“*With the identity of the driver determined*, the smart vehicle looks up **settings** for the driver S352.”), [0031] (“Server logic 132 matches the driver’s identity with corresponding settings”). Indeed, it is while such **settings** are **activated** that *Rector*’s process of restricting certain setting changes takes place. *Id.*, ¶¶ [0043], [0059] (“With this **setting in place**, the driver is not able to play the radio at a volume in excess of the set limit”).

⁷ The COC replaces “activated” in “when the user information, including biometrics data, is activated” with “verified,” Ex. 1002, 636, which *Rector* discloses as discussed below.



Rector also discloses using **biometrics data** (e.g., a **biometric identifier 514**) to activate or verify the **profile** (e.g., driver **settings**). *Id.*, ¶¶ [0046]-[0047] (“allowing the settings control system to verify that the correct party is determined to be the driver and appropriate settings are enforced”), [0049] (describing using “a biometric identifier 514, for instance, a fingerprint scanner” to verify the driver against “[a] database of drivers’ fingerprints”).

As above, it would have been obvious to apply the settings of *Rector* upon server-side verification, which may include activation or verification of user information. *Supra*, VI.A.3.1[b]-[c]; Ex. 1005, ¶¶ 152-154.

6. Claim 12

12: “The method of claim 1, wherein the **profile includes one or more **roles** for the plurality of settings, wherein each **role** can include one or more of fuel use settings, or **driving restriction settings**, or **location based settings**, or **time based use settings**, or **automatic purchase settings**, or combinations of two or more thereof.”**

Rector centers on the need for enforcing **restrictions**, and may do so with respect to certain **roles** (e.g., certain **drivers**, drivers having **certain passengers**, etc.). See Ex. 1006, ¶¶ [0007], [0046]. To this end, a **profile** comprises settings that may be restricted depending on who is in the vehicle, where the vehicle is, the time-of-day, etc. *Id.*, ¶¶ [0010] (“settings are chosen by a controlling authority”), [0036], [0045]-[0046]. *Rector* explains, the settings “at least in part, are set by a controlling authority, such as a parent or superior of the driver.” *Id.*, ¶ [0031]. Thus, a profile reflects certain “permitted or prohibited settings for the [particular] driver,” which may depend on his/her role relative to the controlling authority. *Id.*, ¶ [0043]; Ex. 1005, ¶ 156.

Rector explains restrictions may be based on the number of occupants of the vehicle or “identity of a passenger.” Ex. 1006, ¶¶ [0044]-[0046]. For example, “if the passenger is the driver’s younger sibling, restrictions may be put in place to protect the younger sibling” which may include “limiting the maximum speed, blocking certain radio stations, etc.” *Id.*

Rector discloses several examples for various **roles**, such as **driving restriction settings** (“[w]hen . . . the child is driving, smart vehicle 100 **limits the maximum speed . . .**”), **location based settings** (“a parent may limit the function of the smart vehicle . . . so that his or her child is not tempted to skip class and drive off of **school grounds**”), and **time-based settings** (“[t]he employer may set a maximum volume level for employees in the settings for each employee, for the smart vehicle, **for certain times**, etc.”) (“settings may be based upon the **time of day**”). *Id.*, ¶¶ [0032]-[0033], [0036].

7. Claim 13

13[a]: “The method of claim 1, wherein one or more of the **settings are associated with **systems** of the vehicle, and the **systems** of the vehicle are configured to receive input or cause one or more actions or functions,”**

Rector discloses “[t]he **settings** may limit **certain devices** within the smart vehicle and/or the smart vehicle itself.” *Id.*, ¶¶ [0008], [0023]. Such **systems** (e.g., **certain devices**) include a **radio, wireless communication device**, or any other component for which limitation may reduce “distractions to the driver.” *Id.* One would understand such systems are configured to receive input or cause one or more actions or functions. Ex. 1005, ¶ 160-162. For example, *Rector* discusses “disabling text messages” limiting the driver from changing the radio volume or changing the radio station, or otherwise “limiting services offered by the network

during the course of driving the smart vehicle.” Ex. 1006, ¶¶ [0034], [0043], [0059].

13[b]: “wherein the **systems include one or more of ... a heating and cooling system, a speaker, ... a telecommunications system, ... seat mechanical systems, mirror systems...”**

Rector discloses one or more of the above-quoted alternatives. Ex. 1005, ¶¶ 163-168; *see also infra*, VI.A.8 (discussing similar elements in claim 14).

8. Claim 14

14: “The method of claim 1, wherein the plurality of **settings include one or more of **tracking settings**, or use metrics settings, or **comfort settings**, or **entertainment settings**, or **driving mode settings**, ...”**

Rector describes its **settings** as including “driver created **settings** as well as controlling authority **settings**” such as **comfort settings** (“**seat and mirror positions**, ... **temperature controls**.”), **entertainment settings** (“**radio stations**, ... **radio controls**, **wireless communication device controls**”), and **driving mode settings** (“**maximum speed**”). Ex. 1006, ¶¶ [0031]-[0032], Fig. 11. *Rector* also discloses **tracking settings** (e.g., **notifying** the “controlling authority should the driver attempt to bypass or override the settings”). *Id.*, ¶ [0037].

9. Claim 15

15: “The method of claim 1, wherein the **profile stored in the storage is **accessible via a device using a connection to the Internet** and/or a vehicle interface**

of the vehicle, and the device is one of a portable device, or a computer.”

Rector discloses that the **profile** (e.g., **settings**) is **stored in the storage** (e.g., **settings server 130 having a database 134**), and is **accessible via a device using a connection to the Internet** (e.g., **devices communicating with network 140**). *Id.*, ¶¶ [0030]-[0031], Fig. 1. *Rector* states, for example, that transmissions between smart vehicle 100, wireless communication device 120, and settings server 130 may occur over the Internet. *Id.*, ¶ [0031]. *Rector* also discloses that the device may be a portable device (e.g., a “wireless communication device”) (*id.*, ¶¶ [0024], [0026]) or a computer (e.g., a “personal computer”) (*id.*, ¶ [0032]).

10. Claim 16

16: “The method of claim 1, wherein the **user information includes one or more of **sign-in credentials**, or **biometrics** or face recognition data, or voice data, or **fingerprint data**....”**

Rector discloses the **user information** (e.g., **unique identifier**) includes at least one of the above-quoted alternatives, for example, **biometrics** or **fingerprint data**. *Id.*, ¶¶ [0046] (“**biometrics** may also be utilized to **determine the driver**”), [0049] (“a **biometric identifier 514**, for instance, a **fingerprint scanner**”) (“the present invention uses this **biometric identifier** to associate the driver with a user account”), [0051] (“smart vehicle 600 including **biometric sensors**”). *Rector* also describes an embodiment in which vehicle CPU 502 “detect[s] the presence of and

unique identifiers from any wireless communications devices” of a driver. *Id.*,

¶ [0048]. *Kleve* also teaches using biometrics to capture a user’s identity, Ex. 1007, ¶ [0071], and that user information includes sign-in credentials (e.g., ID and password), *id.*, ¶¶ [0037], [0049], [0063], [0069].

One would have been motivated and found it obvious to have *Rector*’s user information include sign-in credentials or biometrics to improve security. Ex. 1005, ¶ 175. *Rector* recognizes that biometrics could be used for security purposes, “such as starting the smart vehicle.” Ex. 1006, ¶ [0049]. *Kleve* teaches the extension of using remote credential verification at the vehicle by, for example, entering credentials (password) at the vehicle’s touchscreen, which improves security. Ex. 1007, ¶ [0049]. Combining *Rector* and *Kleve* amounts to combining familiar elements according to known methods in a predictable way with a reasonable expectation of success. Ex. 1005, ¶¶ 175-176.

11. Independent Claim 17

17[preamble]: “A cloud-based system including one or more data centers, and each data center of the cloud-based system includes one or more servers, wherein some of said one or more servers have program instructions for enabling connections with vehicles and providing services to vehicles, wherein one service includes enabling access to settings associated with profiles of user accounts of the cloud-based system, comprising:”

To the extent the preamble is limiting, *Rector* discloses it. Ex. 1005, ¶¶ 177-179. For example, *Rector* discloses a **cloud-based system including one or more data centers**, and each data center of the cloud-based system includes one or more servers (e.g., “servers . . . placed at several logical points on a network”). Ex. 1006, ¶ [0027]. *Rector* states there may be a “complex of servers” to exploit the functionality of connected devices, and recognizes the concept of distributed computing. *Id.*, ¶¶ [0006], [0025]. Thus, *Rector* discloses “data centers”. Compare Ex. 1001, 9:1-4 (“data centers that include multiple computing systems . . .”) with Ex. 1006, ¶ [0027].

Rector also discloses its **servers** have **program instructions for enabling connections with vehicles and providing services to vehicles** (e.g., “logic” included in servers may “hav[e] the form of **instruction signals and/or data that may be applied to direct the operation of a processor**”), wherein one service includes **enabling access to settings associated with profiles of user accounts** (e.g., “the settings server including a **user account . . . the user account including permitted settings** for the user”). Ex. 1006, Title, Abstract, ¶¶ [0009]-[0010], [0025], [0027], [0030]-[0033], [0043], [0059] (“limiting services offered by the network during the course of driving the smart vehicle”), Fig. 1.

17[a]: “receiving, by one of the servers, a request from a vehicle to access a profile for a user account associated with the user, the request identifies user information related to a user;”

Rector discloses this limitation for the same reasons as element 1[a]. Ex. 1005, ¶¶ 180-183, 110-113; *see supra*, VI.A.3. This limitation is different from 1[a] only in that it is performed by “one of the servers” (like all sub-elements of claim 17) and it specifies the user account being “associated with the user,” which *Rector* discloses, as discussed below.

Rector discloses “servers . . . placed at several logical points on a network,” and a “complex of servers” to exploit the functionality of connected devices. Ex. 1006, ¶¶ [0006], [0025], [0027]. *Rector*’s explanation of distributed computing (e.g., using assets of “several network elements” in “modern packet-based” networks to accomplish its processing) makes clear that some steps may be performed by one server among a complex. *Id.*; Ex. 1005, ¶ 181.

Rector also discloses a request originating from a vehicle (e.g., smart vehicle 100), and which is received by one of the servers (e.g., settings server 130, which may be one server among the “complex”). Ex. 1006, ¶¶ [0008], [0023], [0025], [0030]. Such a request is to access a profile for a user account associated with the user (e.g., settings for the driver), and it identifies user information (e.g., a unique identifier) related to a user. *Id.*; Ex. 1005, ¶¶ 182-183.

17[b]: “processing, by one of the servers, at least part of the user information to verify the access for the user, the profile having a plurality of settings of the

user for the vehicle,⁸ at least part of the plurality of settings of the profile being stored on storage accessible to said one or more servers;”

Rector and *Kleve* render this limitation obvious for the same reasons as element 1[b]. Ex. 1005, ¶¶ 184, 114-126; *see supra*, VI.A.3. The superficial variations in language with 1[b] (e.g., “by the server” in 1[b], “by one of the servers” in 17[b]) do not affect its patentability in light of the prior art. Ex. 1005, ¶¶ 184-187.

17[c]: “transferring, by one of the servers, upon verification of the user information, one or more settings of the plurality of settings to⁹ the vehicle,”

17[d]: “the transferring is configured to instruct software and hardware associated [with] the vehicle to enable said one or more settings for use on the vehicle to customize said vehicle for the user,”

Rector and *Kleve* render limitations 17[c]-17[d] obvious for at least the same reasons as elements 1[c]-1[d]. Ex. 1005, ¶¶ 188-189, 127-137; *see supra*, VI.A.3. Additionally, *Rector* discloses enabling one or more settings of the plurality of settings for use on the vehicle to customize the vehicle. Ex. 1006, ¶¶ [0031]-[0033]

⁸ The COC adds “and at least one of said plurality of settings being restricted for use on the vehicle,” Ex. 1002, 636, which *Rector* discloses as discussed above.

⁹ The COC adds “storage of” (the vehicle), Ex. 1002, 636, which *Rector* discloses as discussed above.

(explaining that “driver created settings may include . . . programmed radio stations,” while the controlling authority may enable “allowed radio stations, prohibited radio stations, . . . etc.”).

17[e]: “the request and the transferring being via wireless communication of said vehicle.”

Rector discloses this limitation for the same reasons as element 1[e]. Ex. 1005, ¶¶ 190-192, 138-140; *see supra*, VI.A.3.

12. Claim 19

19[a]: “The cloud-based system of claim 17, wherein the vehicle is configured to use the one or more settings for the vehicle while the profile is active in the vehicle, and”

Rector discloses this limitation for the same reasons as claim 11. *See supra*, VI.A.5; Ex. 1005, ¶¶ 193, 150-154.

19[b]: “said one or more settings are removed when the profile is no longer active in the vehicle, and”

Rector does not explicitly disclose removal of settings when the profile is no longer active in the vehicle. However, one would have been motivated and found it obvious to remove *Rector*’s settings to improve security, as taught by *Kleve*. Ex. 1005, ¶¶ 194-196. *Kleve* teaches “[a]ny personal settings . . . may be reset after the schedule rental period has been complete[d]” Ex. 1007, ¶ [0074]. Combining *Rector* and *Kleve* in this way amounts to combining familiar elements according to

known methods in a predictable way with a reasonable expectation of success, as demonstrated by *Kleve*. Ex. 1005, ¶¶ 194-195.

19[c] “wherein the request is processed automatically by the vehicle upon a pairing of a user device or input by the user of credentials.”

Rector/Kleve render this additional limitation obvious for the same reasons as claim 9. *See supra*, VI.A.4; Ex. 1005, ¶¶ 197-199, 142-149.

13. Claim 20

20[a]: “The cloud-based system of claim 17, wherein one or more of the settings are associated with systems of the vehicle, and the systems of the vehicle are configured to receive input or cause one or more actions or functions,”

Rector discloses this limitation for the same reasons as element 13[a]. Ex. 1005, ¶¶ 200-201, 161-162; *see supra*, VI.A.7.

20[b]: “wherein the systems include one or more of ... a heating and cooling system, a speaker, ... a telecommunications system, ... seat mechanical systems, mirror systems...”

Rector discloses this limitation for the same reasons as element 13[b]. Ex. 1005, ¶¶ 202-203, 163-168; *see supra*, VI.A.7.

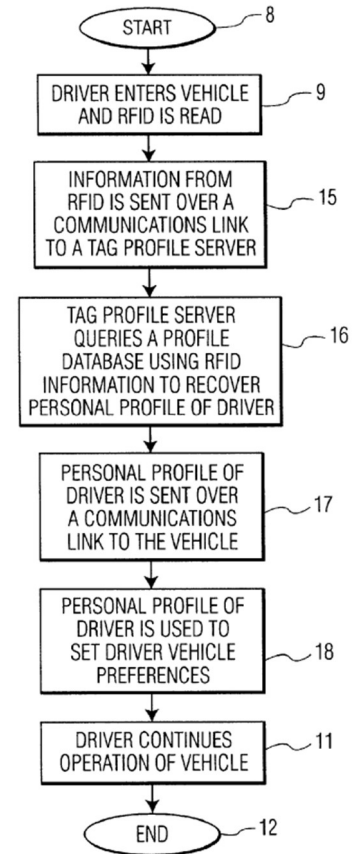
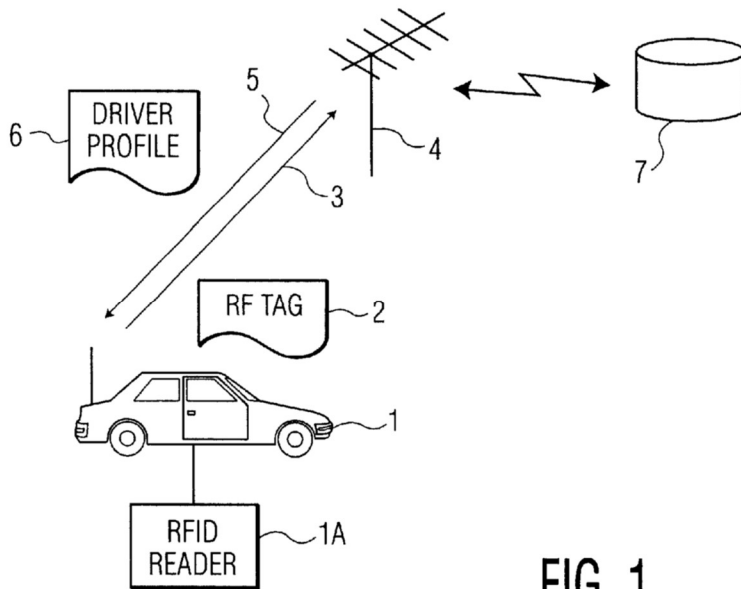
B. Ground 2: *Rector* in combination with *Kleve* and *Yassin* renders claims 2, 4, 10, 18 obvious

1. *Yassin*

Yassin, entitled “Personalize Vehicle Settings Using RF Tags,” is directed to wirelessly programming a user’s personalized settings for adjustable components

of a vehicle. Ex. 1008, Title, Abstract. *Yassin* discloses identifying a user, querying a profile database to access a personal profile based on that identification, and setting an adjustable vehicle component based upon the personalized settings. *Id.*

Yassin “allows selecting the vehicle to be used by the user from a plurality of vehicles” and “[t]hese vehicles may be of either similar or different type” yet still capable of applying the settings that may be retrieved from a server. *Id.*, 3:24-40; 6:65-67. *Yassin* shows settings stored in a “profile database remotely located from the vehicle” may be wirelessly communicated to multiple vehicles via “communications link between the vehicle and the profile database.” *Id.*, 3:54-57; Figs. 1, 4 (below).



Yassin also discloses changes made to adjustable components during the driver's use of the vehicle are communicated to a server and saved. *Id.*, 6:10-21, 7:9-21. For example, with the driver's profile applied, "the driver continues to operate the vehicle 11, during which time the driver can alter various settings." *Id.*, 6:14-17. The driver's changes to his settings/profile are communicated to the server and the "server updates the profile database for the driver." *Id.*, 7:9-21, Fig. 5B (below).

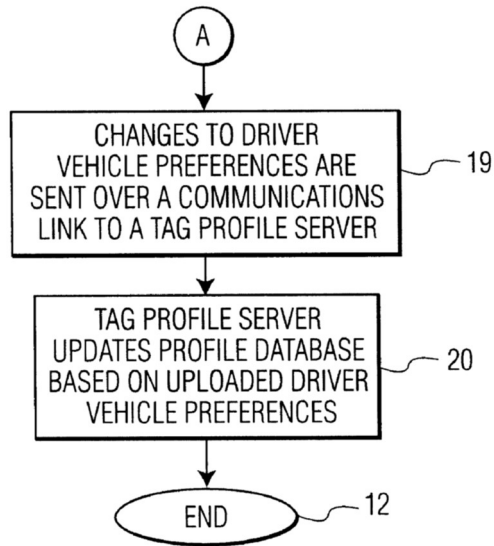


FIG. 5B

2. Claim 2

2: “The method of claim 1, wherein the **profile** of the user is **transferrable to one or more other vehicles** from the **cloud services system**.”

A POSA would have considered the teachings of *Yassin* for improving the method made obvious by *Rector* and *Kleve*. Ex. 1005, ¶¶ 209-212. While *Rector* may not explicitly disclose “the **profile** of the user is **transferrable to one or more other vehicles** from the **cloud services system**,” as recited in claim 2, *Rector* recognizes that settings could be applied to multiple “cars, trucks, and buses,” and doing so would be desirable for maximizing its stated goal of enhancing safety (i.e., allowing application of customized settings to more vehicles). Ex. 1006, ¶¶ [0004]-[0007], [0028]. It was well-known in the art, at the time of the ’244

patent, for cloud services systems to transfer a driver's settings to multiple vehicles, as demonstrated by *Yassin*, which would provide more opportunities for reducing distractions and enhancing safety. Ex. 1008, 3:24-40, 3:54-57, 6:60-67, Figs. 1, 4; Ex. 1005, ¶¶ 213-214.

Furthermore, implementing the transferring of settings to multiple vehicles, as in *Yassin*, in the method made obvious by *Rector* and *Kleve* would require little more than combining prior art elements in known ways to obtain the predictable result of enhancing safety as taught by *Yassin*. Ex. 1008, 2:30-41, 4:64-65; Ex. 1005, ¶ 211. A POSA would have a reasonable expectation of success doing so because *Yassin* demonstrates one could apply a profile to “a plurality of vehicles” which “may be of either similar or different type.” Ex. 1008, 3:24-28. Combining *Yassin* with *Rector* and *Kleve* would have the predictable result of reducing driver distractions when a driver used a different vehicle, thus improving safety.

Additionally, *Rector*, *Kleve*, and *Yassin* are analogous art to the claimed invention of the '244 patent because they are (1) from the same field of endeavor as the claimed invention (i.e., applying settings to vehicles based on user profiles); and/or (2) reasonably pertinent to the problem faced by the inventor (i.e., improving application of settings to vehicles). Ex. 1005, ¶ 212. For example, *Rector* illustrates the importance of automobile safety, pointing out the risks of driver distractions, and aspiring to reduce such distractions by “plac[ing]

restrictions or otherwise creat[ing] settings for the driver.” Ex. 1006, ¶¶ [0004]-[0007]. *Yassin* recognizes the same problem and endeavors to solve it in a similar way, e.g., by providing settings with minimum driver intervention. Ex. 1008, 2:30-41, 4:64-65. Both *Rector* and *Yassin* recognize the benefit of improved safety by transmitting and automatically applying user settings to a vehicle. Furthermore, both *Rector* and *Yassin* describe “settings” as including multimedia settings, such as preferred radio stations. Ex. 1006, ¶¶ [0008], [0023]; Ex. 1008, 1:58-67, 5:56-65.

Turning to the disclosures of the references, *Yassin* discloses “sending information regarding the personalization of vehicles settings” to multiple vehicles. Ex. 1008, 1:6-11; 3:24-40; 4:48-54. *Yassin* explains that it “allows selecting the vehicle to be used by the user from a plurality of vehicles” and that “[t]hese vehicles may be of either similar or different type” yet are still capable of applying the settings that may be retrieved from a server. *Id.*, 3:24-40; 6:60-67. As shown throughout *Yassin*, settings stored in a “profile database remotely located from the vehicle” may be communicated to multiple vehicles via a “communications link between the vehicle and the profile database.” *Id.*, 3:54-57, Figs. 1, 4 (below).

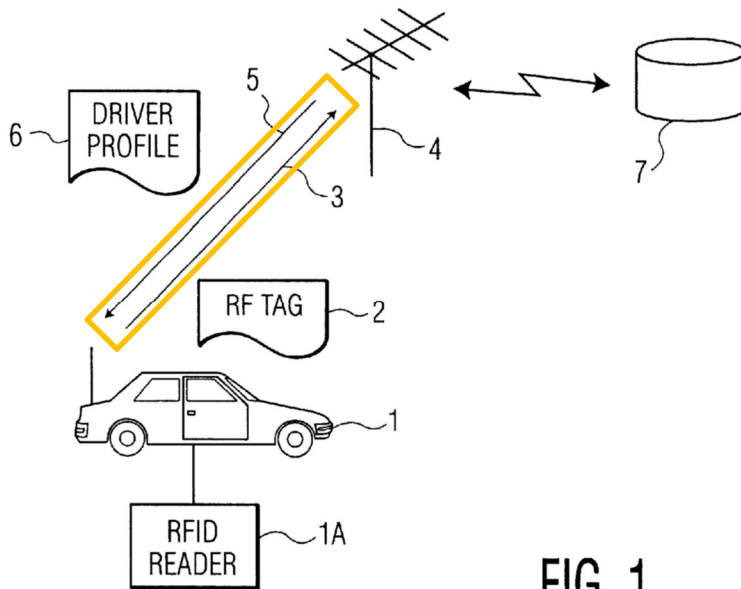


FIG. 1

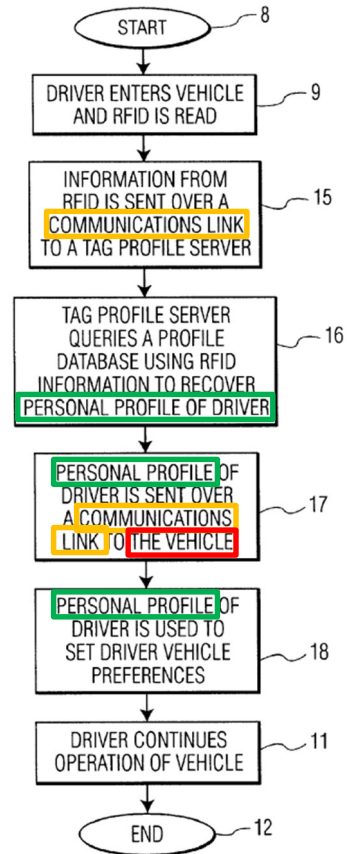


FIG. 4

3. Claim 4

4[a]: “The method of claim 1, further comprising: receiving, by the server, communication from the vehicle regarding inputs made to systems of the vehicle during use of the vehicle while the vehicle is associated with the profile of the user account;”

Rector does not explicitly disclose the above-quoted limitation. However, *Rector* recognizes drivers would make changes to settings by making inputs to systems of the vehicle during use while profiles are in place. Ex. 1006, ¶ [0043] (attempting to change the radio station or volume), ¶ [0049] (“adjusting the seat back/position/mirrors”), ¶ [0059] (“when the settings are in place” adjustments

may be allowed or blocked). It would have been obvious to combine *Rector*, *Kleve*, and *Yassin* for multiple reasons. Ex. 1005, ¶¶ 215-221.

For example, similar to claim 2, one would have been motivated to further reduce driver distractions, as discussed by both *Rector* and *Yassin*. Ex. 1006, ¶¶ [0004]-[0007]; Ex. 1008, 2:30-36; Ex. 1005, ¶ 216; *see supra*, VI.B.2. One would have sought to improve convenience and safety of *Rector* by capturing user changes to settings made during use and communicating them to a server, as in *Yassin*, which would have the predictable result of carrying forward the driver's changed settings and further reducing driver distractions (i.e., preventing the need for readjusting components to implement the driver's changed settings the next time he/she uses the same/different vehicle). Ex. 1005, ¶ 216. One would have a reasonable expectation of success doing so because *Yassin* demonstrates its methods are broadly applicable, Ex. 1008, 4:55-5:5, and usable to set desired settings “whenever” or wherever the driver chooses to drive, *id.*, 6:65-7:8.

Furthermore, one would have immediately recognized that when a driver makes changes to settings, it would be inconvenient and distracting to require readjusting the vehicle to reproduce them each time. Ex. 1005, ¶ 218. One would have looked to *Yassin* for its teachings of capturing a user's changes to settings and communicating them to a server, precisely for the reason *Yassin* explains—to minimize “driver intervention.” *Id.*, Ex. 1008, 2:39-41, 4:64-65.

Implementing the saving of changed settings, as in *Yassin*, in the method made obvious by *Rector* and *Kleve* would require little more than combining prior art elements in known ways to obtain the predictable result of reducing distractions and enhancing safety as taught by both *Rector* and *Yassin*. Ex. 1006, ¶¶ [0004]-[0007]; Ex. 1008, 2:30-41, 4:64-65.

Turning to limitation 4[a], *Yassin* discloses that **inputs** (e.g., **changes**) made to adjustable components of the vehicle (while the driver is using it) are **communicated to a server**. Ex. 1008, 6:10-21, 7:9-21. For example, with the driver's profile applied, "the driver continues to operate the vehicle 11, during which time the driver can **alter various settings**." *Id.*, 6:16-18. *Yassin* teaches the driver's **changes** to his/her **settings/profile** are communicated to the server and the "server **updates** the profile database for the driver." *Id.*, 7:9-21, Fig. 5B (below).

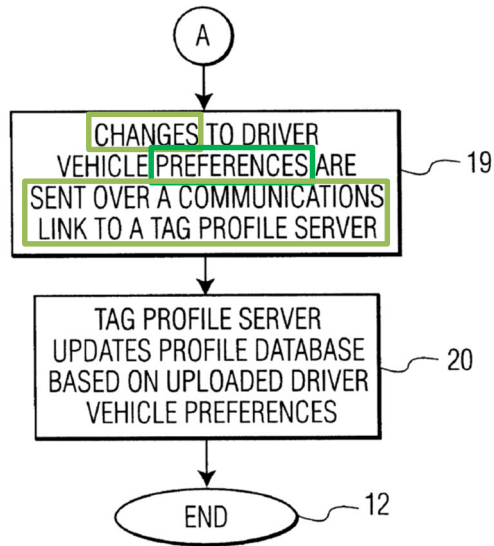


FIG. 5B

4[b]: “determining, by the server, based on the inputs made to the systems of the vehicle that at least one of the plurality of settings of the profile is to be updated.”

A POSA would have been motivated to modify the method of *Rector* and *Kleve* to determine whether the profile is to be updated, as in *Yassin*, for at least the same reasons as element 4[a]. Ex. 1005, ¶¶ 222-224, 215-219. A POSA would have a reasonable expectation of success in modifying the references because determining to update the profile would naturally follow from receiving communication regarding the “inputs,” in 4[a] (e.g., changes to settings). *Id.*, ¶ 222.

Yassin discloses a server (profile tag server 15) determines that at least one of the settings of the profile (e.g., at least one of “various settings”) is to be

updated (e.g., “the profile tag server updates the profile database for the driver, based on the updated driver vehicle preferences 20”). *Id.*, ¶¶ 223-224.

Yassin discloses updates are made “to reflect any driver preference changes made by the driver.” Ex. 1008, 6:10-12. This occurs while the driver “continues to operate the vehicle, during which time the driver can alter various settings,” which may include “seat positioning, air temperature, or any other settings or combinations of settings.” *Id.*, 6:13-21.

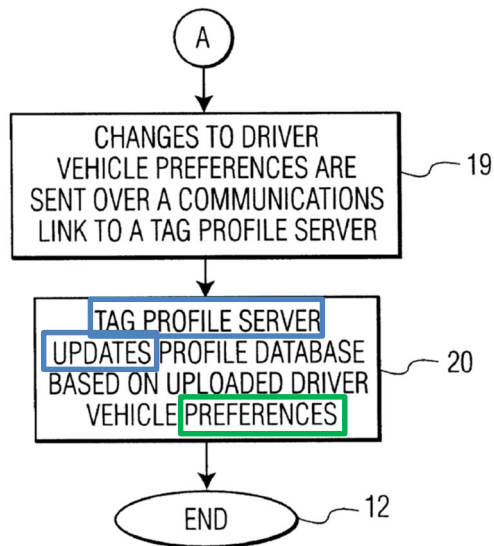


FIG. 5B

4. Claim 10

10: “The method of claim 1, wherein the profile is configured for application in other vehicles.”

Rector/Kleve/Yassin renders the additional limitation of claim 10 obvious for the same reasons as claim 2, which recites similar elements. *See supra*, VI.B.2; Ex. 1005, ¶¶ 226-227, 210-214.

5. Claim 18

**18: “The cloud-based system of claim 17, wherein the
profile is transferrable to one or more other vehicles.”**

Rector/Kleve/Yassin renders obvious the additional limitation of claim 18 for the same reasons as claim 2, which recites similar elements. *Id.*

C. Ground 3: *Rector* in combination with *Kleve*, *Yassin*, and *Patenaude* render claims 5-7 obvious

1. *Patenaude*

Patenaude, entitled “Method of Determining and Predicting Entertainment Selections for Telematics Unit,” discloses a method for providing entertainment in-vehicle, including monitoring entertainment selections at a telematics unit, determining a user entertainment selection profile based on that monitoring, and automatically activating entertainment units based on the profile. Ex. 1009, Title, Abstract. *Patenaude* identifies limitations of then-current art, which could not “predict a user’s entertainment selections, such as a radio station on an FM radio” *Id.*, ¶ [0004]. To this end, *Patenaude* endeavors to “determine and predict entertainment selections” by learning a user’s preferences and developing an “entertainment selection profile” for him/her. *Id.*, ¶ [0001].

Patenaude describes a telematics unit in a vehicle “monitors entertainment selections” made by the user while operating the vehicle. *Id.*, ¶ [0042]. The monitored selections are used to learn and develop the “entertainment selection profile.” *Id.*, ¶ [0049]. The profile may be based not only on the user’s selections, but also other factors such as number/location of passengers in the vehicle, vehicle location, and time-of-day. *Id.*, ¶¶ [0044], [0054]. In *Patenaude* 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.*, ¶ [0070]. The method may determine that a certain “FM radio station is selected every weekday between 5:15 PM and 5:50 PM.” *Id.*, ¶ [0057].

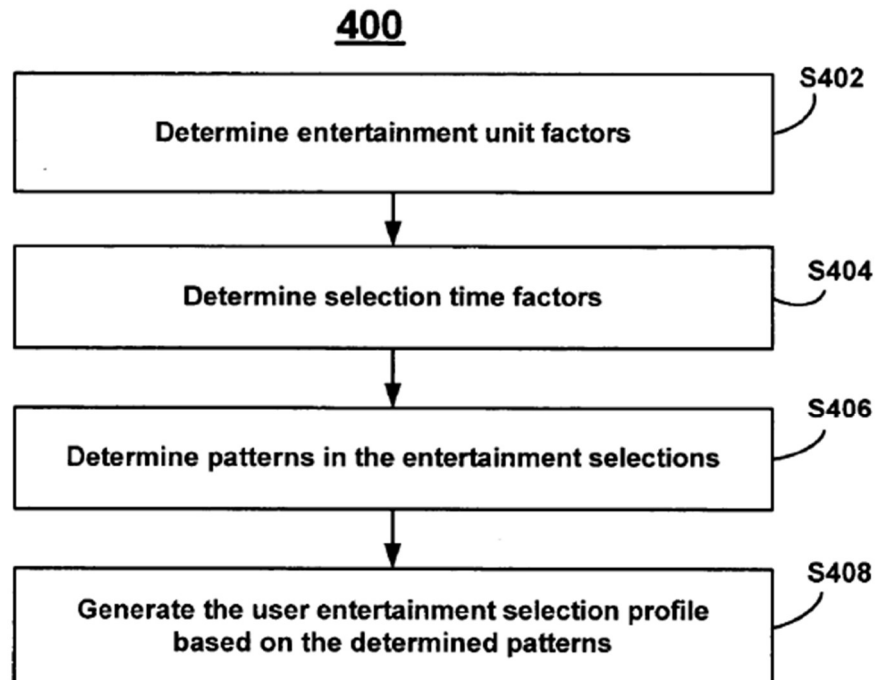


FIG. 4

Based on patterns learned from the user's entertainment selections, the method may automatically apply certain settings to the vehicle. For example, upon starting up and identifying a user, it retrieves a "user-specific entertainment selection profile" and transmits a signal to entertainment units to operate in accordance therewith. *Id.*, ¶ [0074]. *Patenaude* explains it is desirable to predict and automatically apply personalized settings via such a system. *Id.*, ¶¶ [0002]-[0005].

2. Claim 5

**5: "The method of claim 4, further comprising:
processing by a **learning engine** that uses the **inputs**
made to the systems of the vehicle to find **patterns** in
use of the systems of the vehicle while the profile was
used with the vehicle."**

Although *Rector* does not explicitly disclose the above-quoted limitation, *Patenaude* discloses a learning engine. Ex. 1005, ¶¶ 230-241. It would have been obvious to combine *Rector*, *Kleve*, *Yassin*, and *Patenaude* for multiple reasons. *Id.*, ¶¶ 233-240. For example, one would have been motivated to further improve *Rector* (as modified by *Kleve* and *Yassin*), which aims to reduce preventable distractions and improve convenience, by implementing the learning engine of *Patenaude*, which provides the improvement of being able to automatically predict and apply user settings from determined patterns. Ex. 1006, ¶¶ [0001]-[0008]; Ex. 1009, ¶¶ [0001]-[0005].

Additionally, one would have a reasonable expectation of success because such modification would entail a minor software adjustment. Ex. 1005, ¶ 237. For example, it 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, ¶¶ [0001]-[0005].

A POSA would have been guided by *Rector*, which aims to reduce driver distractions, to look to *Patenaude*, which provides another opportunity to reduce distractions by automatically applying learned settings divined from use patterns. *See id.*, ¶¶ [0055]-[0062]; Ex. 1005, ¶ 238. Adding *Patenaude*'s learning engine would have the predictable result of enhancing the functionality/user experience of *Rector* to learn user patterns and predict setting changes (e.g., predicted radio station changes), without requiring repeatedly making those changes (thereby further reducing distractions).

Additionally, it would have been obvious to perform "learning" taught by *Patenaude* on the server-side because remote processing saves resources for vehicle-side computing systems, among other reasons. Ex. 1005, ¶¶ 237, 120-122; *see also supra*, VI.A.3.1[b]. A POSA would have a reasonable expectation of success moving such processing to the server because, as the prior art demonstrates, a server is capable of various processing tasks. Ex. 1007, ¶ [0035]

(explaining that certain processes “may be executed by a computing system in communication with a vehicle computing system” such as “a server”).

Furthermore, *Patenaude* is also analogous art to the claimed invention of the ’244 patent because it is (1) from the same field of endeavor as the claimed invention (i.e., applying settings to vehicles based on user profiles); and/or (2) reasonably pertinent to the problem faced by the inventor (i.e., improving application of settings to vehicles). Ex. 1005, ¶ 240. For example, *Patenaude* describes efforts to overcome limitations in prior systems that did not automatically apply user settings to vehicle entertainment units. Ex. 1009, ¶¶ [0001]-[0005]. *Rector* and *Patenaude* (and *Kleve/Yassin*) recognize the benefit of improved convenience/safety by automatically applying desired settings, which include multimedia settings. Ex. 1005, ¶ 240.

Specifically, *Patenaude* discloses determining a user’s entertainment selection profile in a vehicle. Ex. 1009, ¶ [0051]. A telematics unit “determines patterns in the entertainment selections” of a user. *Id.*, ¶ [0055]. These are based on user input (e.g., setting modifications). *See id.*, ¶ [0056].

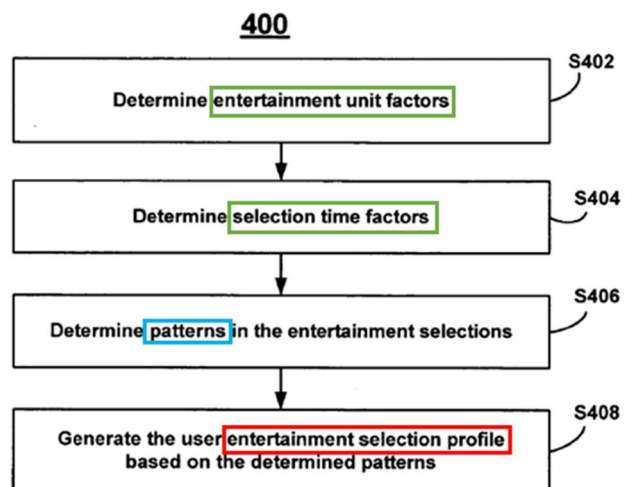


FIG. 4

“After a minimum number of **entertainment unit factors** and **selection time factors** are stored in the in-vehicle memory 128 for the specific user, the processor 122 applies an algorithm on the stored entertainment unit factors and selection time factors.” *Id.*, ¶ [0069]. *Patenaude* explains that entertainment unit factors are user inputs that include one or more of “a satellite radio unit code, an AM radio unit code, an FM radio unit code, . . .” and so on. *Id.*, ¶ [0052]. Selection time factors further describe the setting modifications and include “time of day of the entertainment selection, a day of week of the entertainment selection, a week of month of the entertainment selection, and a date of the entertainment selection.” *Id.*, ¶ [0054].

As in claim 4, a POSA would have been motivated to communicate the inputs (e.g., changes) made to systems of the vehicle to the server, as shown in *Yassin*, thus, it follows that the claimed “processing by the learning engine” would also occur at the server, and a POSA would have a reasonable expectation of success doing so for at least the same reasons. Ex. 1005, ¶ 243. Indeed, *Yassin* teaches that the “profile database . . . *preferably* will be maintained externally.” Ex. 1008, 5:40-42.

3. Claim 6

**6: “The method of claim 5, further comprising:
sending, by the server, a **recommended setting** to the
user account, the recommended setting is based on
processing by the learning engine and said**

recommended setting is applied to the vehicle when the vehicle is used with the profile or is applied to the vehicle upon receiving acceptance of the recommended setting via the user account.”

Although *Rector* does not explicitly disclose the above-quoted limitation, *Patenaude* does. Ex. 1005, ¶¶ 245-250.

In combining *Patenaude* with *Rector*, *Kleve*, and *Yassin* as discussed above, implementing *Patenaude*’s learning engine would have naturally entailed sending (separate from the “at least one of said plurality of settings” that is restricted, as recited in claim 1) a recommended setting (e.g., a setting determined from learned patterns) to a user account (e.g., to a “user account,” as in *Rector*), so that such recommended setting would be applied to the vehicle when next used with the profile. *Id.*, ¶ 245-246. *Rector* states that a database “host[s] an account for a user” and such “user account” is associated with a driver. *Id.*, ¶¶ [0027], [0049]. Also, driver settings may be managed via “web portal, on a screen in a vehicle, etc.” or “by text message, by a dedicated application . . . etc.” *Id.*, ¶¶ [0031], [0059]. A POSA would understand that a user could manage their user account remotely, via the means described by *Rector*, just like the ’244 patent describes. Ex. 1005, ¶ 246; *see also* Ex. 1001, 13:20-30, 29:43-49.

A POSA would have been motivated to send a recommended setting to the user account so that it could be applied in the vehicle, as taught by *Yassin*, to reduce distractions, as taught by *Rector*, and to improve upon the existing art that

did not automatically apply settings, as taught by *Patenaude*. Ex. 1005, 2:30-41, 4:64-65; Ex. 1006, ¶¶ [0002]-[0007]; Ex. 1009, ¶¶ [0001]-[0006]; Ex. 1005, ¶ 247. Indeed, as was within the general knowledge of a POSA, it is desirable to have an automated system “offer help to the user in choosing the right music” or other vehicle settings. Ex. 1005, ¶ 247. A POSA would have a reasonable expectation of success modifying the references to have the recommended setting sent to the user account because, as they demonstrate, the user account can receive various information to enable personalized driving. *Id.*

Specifically, regarding the recommended setting, *Patenaude* discloses a method 600 in which “telematics unit 120 determines a **user-specific pattern** for the specific user identified” Ex. 1009, ¶ [0067]. “After a minimum number of entertainment unit factors and selection time factors are stored in the in-vehicle memory 128 for the specific user, the processor 122 applies an algorithm,” which

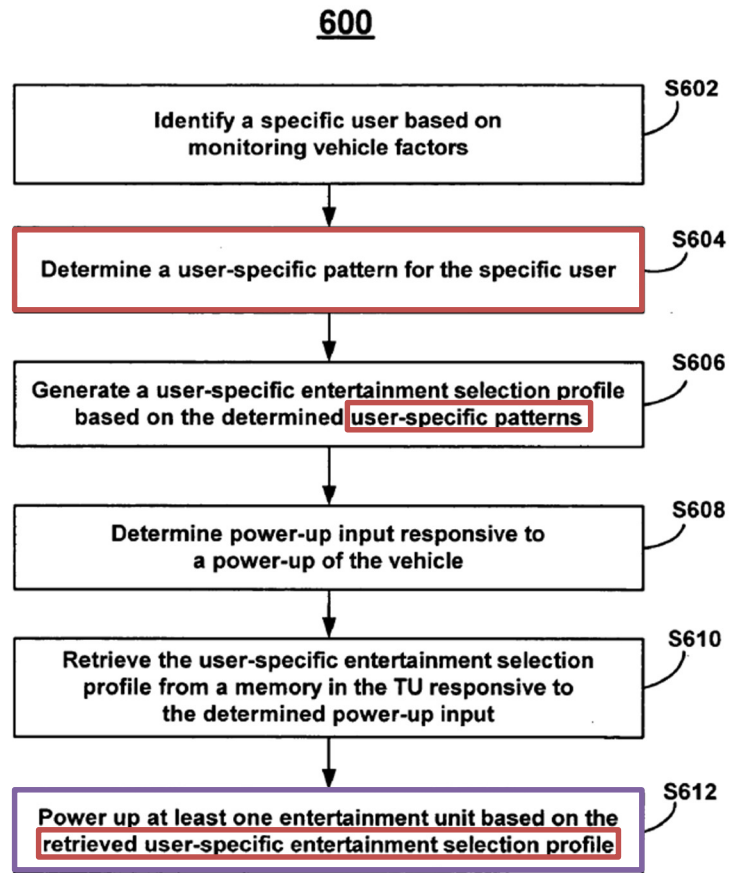


FIG. 6

“is operable to search for one or more patterns in the time frame in which an entertainment unit is selected by the specific user.” *Id.*, ¶ [0069]. *Patenaude* discloses a **recommended setting** (e.g., a setting determined from the **user-specific pattern**) is automatically applied when a telematics unit is powered up and the user has been identified. *Id.*, ¶ [0074] (“During stage 612, the telematics unit 120 powers-up at least one entertainment unit 135, 136, or 137 based on the retrieved user-specific entertainment selection profile.”).

Thus, it would have been obvious, based on *Patenaude*, to modify the method made obvious by *Rector*, *Kleve*, and *Yassin* to send, by the server (e.g., *Rector*'s setting server), a **recommended setting** (e.g., a setting determined from a user-specific pattern) to the user account (e.g., to the "user account," as in *Rector*), the **recommended setting** being based on processing by the learning engine (e.g., having applied an algorithm) and said **recommended setting** being **applied to the vehicle when the vehicle is used with the profile** (e.g., while the user has his/her profile loaded and is using the vehicle). Ex. 1005, ¶ 249.

4. Claim 7

7: "The method of claim 5, wherein the patterns are correlated to one or more **conditions, the one or more conditions include type of input, or time of day inputs, or temperature, or security, or number of occupants in the vehicle, or weather, or age of the vehicle, or service requirements of the vehicle."**

Although *Rector* does not explicitly disclose the above-quoted limitation, *Patenaude* discloses it. Ex. 1005, ¶¶ 251-255. It would have been obvious to combine *Rector*, *Kleve*, *Yassin*, and *Patenaude* and consequently reach the subject matter of claim 7 for multiple reasons. *Id.*, ¶¶ 252-254.

In combining *Patenaude* with *Rector*, *Kleve*, and *Yassin* as discussed above with respect to claim 5, implementing *Patenaude*'s learning engine would have included having the patterns be correlated to one or more **conditions** (e.g., **factors**), which include one or more of the recited alternatives. *Id.*, ¶¶ 252-253. One would

also have been motivated to have the patterns be correlated to one or more conditions so that the determined patterns are more predictive of the user's desired intent, as taught by *Patenaude*. Ex. 1009, ¶¶ [0054]-[0057].

Also, a POSA would have a reasonable expectation of success doing so because *Patenaude* demonstrates that determining patterns based on such factors is a known way to make its algorithm more accurate. *Id.*, ¶ [0070]; Ex. 1005, ¶ 252. Specifically, *Patenaude* discloses methods that take into account various factors including “number of passengers” (Ex. 1009, ¶ [0044]), “time of day” (*id.*, ¶ [0054]), weather (*id.*, ¶ [0003]), “maintenance and diagnostic services for a mobile vehicle” (*id.*, ¶ [0029]), among others. *See also id.*, ¶ [0070].

Thus, it would have been obvious, based on *Patenaude*, to modify *Rector* (and *Kleve*, *Yassin*) to have the patterns (e.g., *Patenaude*'s “patterns”) be correlated to one or more conditions (e.g., *Patenaude*'s “factors”) that include one or more of the listed alternatives, such as “time of day inputs.” Ex. 1005, ¶ 254.

D. Ground 4: *Rector* in combination with *Kleve* and *Faenger* renders claims 8, 21 obvious

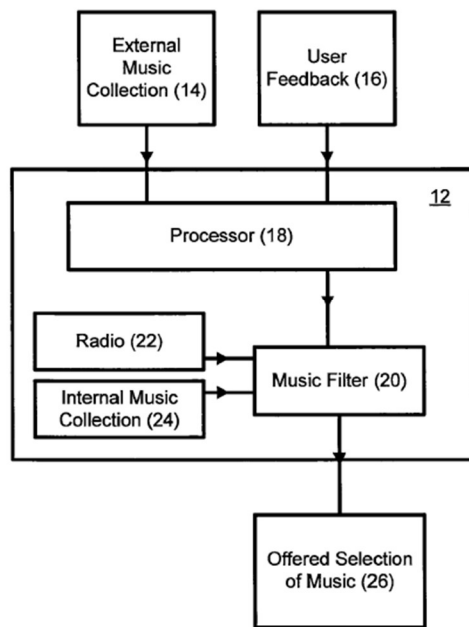
1. *Faenger*

Faenger, entitled “Personalized Entertainment System,” discloses a method of operating an entertainment system in a vehicle that includes conforming “audio/video options of the entertainment system . . . to the user's preference profile” and “offer[ing] to the user” those options. Ex. 1010, Title, Abstract.

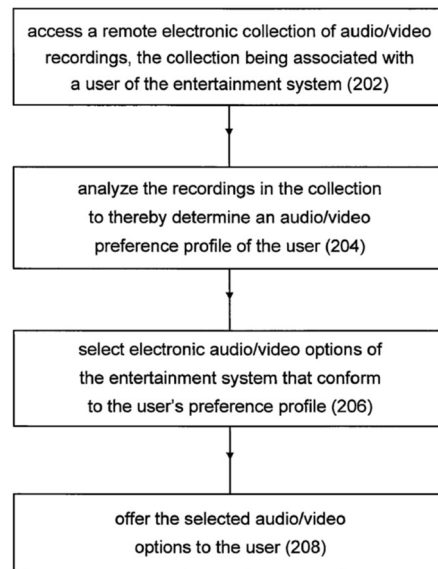
Faenger explains that using an entertainment system is “highly dependent on personal preferences” and discusses several ways of personalizing an entertainment system, such as (i) “collaborative filtering technology,” (ii) analyzing song characteristics to find similarities, and (iii) using “active feedback from the user.” *Id.*, ¶¶ [0004]-[0008].

For example, *Faenger* discloses using the knowledge of a user’s preferences and applying it to “a car radio [or] a driver information system.” *Id.*, ¶ [0025]. *Faenger* explains that such devices “adapt to the music preferences of the user.” *Id.* *Faenger* discusses the use of one or more algorithms “based on information gathered from [a user’s music] collection 14 and/or from feedback 16.” *Id.*, ¶ [0028]. In an embodiment, a recommended setting (e.g., a selection of music) may be “offered to the user.” *Id.*, ¶¶ [0028]-[0029]. As shown in Fig. 2 (below, right), *Faenger* discloses a step of *offering* (208) a selected audio/video option conforming with the user’s preferences, which “give[s] the user the *option of allowing* the system” to, e.g., automatically tune to a radio station or program a preset pushbutton. *Id.*, ¶ [0064].

FIG. 1



10



200

FIG. 2

A POSA would have considered *Faenger* for improving the method made obvious by *Rector* and *Kleve*. Ex. 1005, ¶¶ 258-260. While *Rector* does not explicitly disclose a “learning engine,” as recited in claims 8 and 21, *Rector* discusses automatically applying vehicle settings, which is desirable for enhancing convenience and reducing preventable distractions. Ex. 1006, ¶¶ [0001]-[0008], [0043]. It was well-known in the art for a computerized system to learn a vehicle user’s preferences and apply them when using the vehicle, as demonstrated by *Faenger*. Ex. 1010, ¶¶ [0002]-[0011], [0052]-[0053]. Furthermore, implementing the learning engine of *Faenger* in the method made obvious by *Rector* and *Kleve*

would require little more than combining prior art elements in known ways to further enhance convenience as taught by *Faenger. Id.*

For example, one would have been motivated to further improve the method made obvious by *Rector* and *Kleve*, which aims to reduce distractions and improve convenience, by implementing a system “that is capable of learning user preferences,” as in *Faenger. Id.*, ¶¶ [0004]-[0007]; Ex. 1006, ¶¶ [0002]-[0011]. One would have been guided by *Rector*, which aims to reduce driver distractions, to look to *Faenger*, which provides another opportunity to reduce distractions by learning and automatically applying settings divined from multiple sources, including from multiple different users. Ex. 1010, ¶¶ [0017], [0046], [0054]. Adding *Faenger*’s learning engine would have the predictable result of enhancing the functionality of *Rector* to learn one or more users’ tastes and predict their setting changes (e.g., predicted radio station changes), without requiring users to repeatedly make those changes (thereby further reducing distractions). Ex. 1005, ¶ 259.

Additionally, *Rector*, *Kleve*, and *Faenger* are analogous art to the claimed invention of the ’244 patent because they are (1) from the same field of endeavor as the claimed invention (i.e., applying settings to vehicles based on user profiles); and/or (2) reasonably pertinent to the problem faced by the inventor (i.e., improving application of settings to vehicles). Ex. 1005, ¶ 260. For example,

Faenger describes efforts to overcome limitations in prior systems that did not automatically apply user settings to vehicle entertainment systems. Ex. 1010, ¶¶ [0002]-[0011], [0052]-[0053] (“without the user having to manually train the entertainment system about his specific preferences”). *Rector*, *Kleve*, and *Faenger* recognize the benefit of improved convenience by automatically applying a user’s desired settings, which include multimedia settings.

As detailed below, the combination of *Rector/Kleve/Faenger* renders claims 8 and 21 obvious.

2. Claim 8

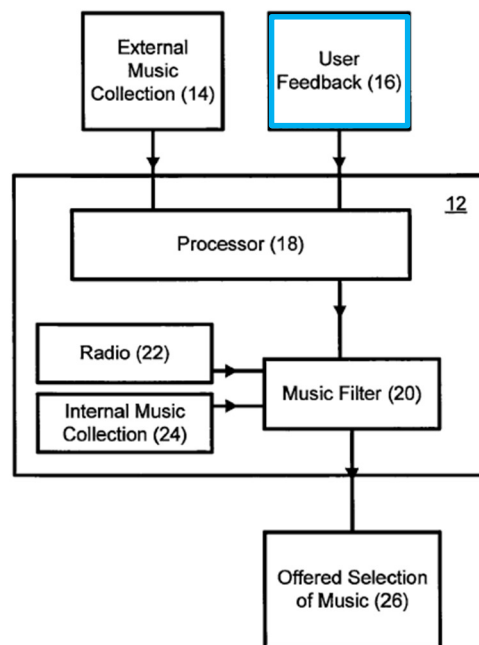
**8[a]: “The method of claim 1, further comprising:
accessing, by the server, a plurality of profiles of
different users stored in the storage accessible to the
cloud services system;”**

Faenger teaches this limitation Ex. 1005, ¶¶ 262-263. *Faenger* discloses accessing a plurality of profiles of different users (e.g., “the preferences of multiple users”), the use of a server, and that users’ collections (from which preference can be determined) may be stored thereon. Ex. 1010, ¶¶ [0017], [0028]-[0030], [0046], [0049], [0054], [0059]. *Faenger* “learn[s] about a user’s entertainment preferences” and “stores the preferences in a user profile.” *Id.*, ¶ [0050].

**8[b]: “detecting, by the server, similarities in patterns
for inputs made to systems of vehicles associated with
the profiles of different users;”**

Faenger teaches this limitation. Ex. 1005, ¶¶ 264-265. For example, *Faenger* discloses detecting similarities in patterns (e.g., analyzing the “varied musical tastes of the individuals who make up a group of people”) for inputs (e.g., “feedback”) that are considered when determining what selection to offer a user. See, e.g., Ex. 1010, ¶¶ [0026], [0059], Fig. 1 (below); see also *id.*, ¶ [0056] (analyzing “a level of similarity”). *Faenger* discloses that such feedback is made to systems of vehicles (e.g., “pressing one of the pushbuttons” of an entertainment system) that may be associated with the profiles of different users. (e.g., “personalized” according to the users’ tastes). *Id.*, ¶¶ [0035]-[0036], [0043].

FIG. 1



8[c]: “using, by the server, a **learning engine to produce a **recommended setting** that is **sent** to the user account.”**

Faenger teaches this limitation. Ex. 1005, ¶¶ 266-268. For example, *Faenger* discloses a **learning engine** (e.g., “an **entertainment system to learn** about a user’s musical taste”). Ex. 1010, ¶¶ [0024], [0032]. Such entertainment system may “run one or more **algorithms** . . . based on information gathered from collection 14 and/or from feedback 16.” *Id.*, ¶ [0028]. Separate from the “at least one of said plurality of settings” that is restricted (as recited in claim 1), *Faenger* discloses a **recommended setting** (e.g., a **personalized selection of audio/video options** offered to the user, such as “**recommended radio stations**”). *Id.*, ¶¶ [0028]-[0029], [0035]-[0036].

Faenger further discloses the **recommended setting** (e.g., **selected audio/video options**) is **sent** (e.g., **offered**) and it would have been obvious to have such recommended setting sent to a user account. Ex. 1005, ¶ 267; *see also supra* VI.C.3.

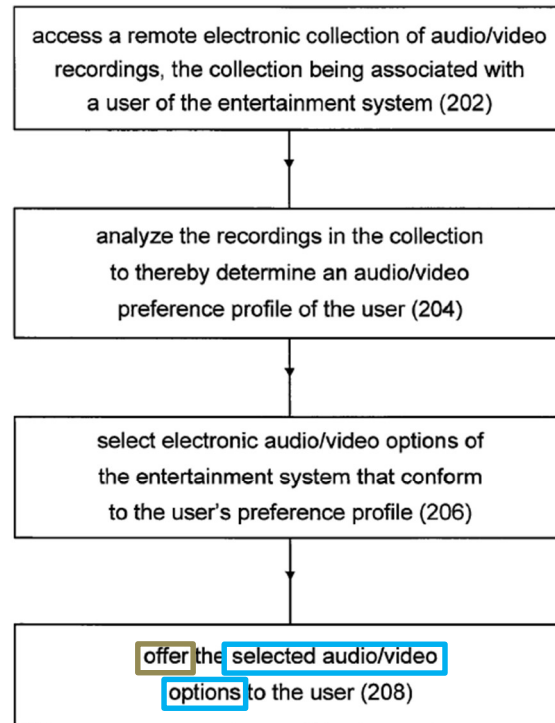


FIG. 2

3. Claim 21¹⁰

21[preamble]: “A cloud-based system including one or more data centers, and each data center of the cloud-based system includes one or more servers, wherein some of said one or more servers have program instructions for enabling connections with vehicles and providing services to vehicles, wherein one service includes enabling access to settings associated with profiles of user accounts of the cloud-based system, comprising:”

¹⁰ Claim 21 is included in the requested COC. Ex. 1002, 627.

To the extent the preamble is found limiting, *Rector* discloses it for the same reasons discussed above. Ex. 1005, ¶¶ 269-270, 177-179; *see supra*, VI.A.11 (discussing identical element 17[preamble]).

21[a]: “receiving, by one of the servers, a request from a vehicle to access a profile for a user account associated with a user, the request identifies user information related to a user;”

Rector discloses this limitation for the same reasons discussed above. Ex. 1005, ¶¶ 271-272, 180-183; *see supra*, VI.A.11 (discussing identical element 17[a]).

21[b]: “processing, by one of the servers, at least part of the user information to verify the access for the user, the profile having a plurality of settings of the user for the vehicle, wherein at least part of the plurality of settings of the profile being stored on storage accessible to said one or more servers; and”

Rector/Kleve renders this limitation obvious for the same reasons discussed above. Ex. 1005, ¶¶ 273-274, 184-187; *see supra*, VI.A.10 (discussing nearly identical element 17[b]).

21[c]: “transferring, by one of the servers, upon verification of the user information, one or more settings of the plurality of settings to storage of the vehicle, the transferring is configured to instruct software and hardware associated [with] the vehicle to enable said one or more settings for use on the vehicle to customize said vehicle for the user, the request and the transferring being via wireless communication of said vehicle;”

Rector/Kleve renders this limitation obvious for the same reasons discussed above. Ex. 1005, ¶¶ 275-276, 188-189; *see supra*, VI.A.11 (discussing nearly identical elements 17[c]-[e]).

21[d]: “wherein a learning engine executed by a server of at least one data center is configured to process inputs made to one or more settings of the vehicle by the user to generate a recommended setting to add to the plurality of settings of the profile;”

Rector/Kleve/Faenger renders obvious this limitation for at least similar reasons as those discussed above. Ex. 1005, ¶¶ 277-279, 258-268; *see supra*, VI.D.2 (discussing similar elements recited in claim 8). Claim 8 includes substantively the same language merely arranged differently. Such differences do not affect patentability. Ex. 1005, ¶¶ 277-278.

21[e]: “wherein **accepted recommendations are **saved** to the profile and added to the cloud storage that is accessible to said one or more servers.”**

Rector/Kleve/Faenger renders obvious this limitation. *Id.*, ¶¶ 280-281. A POSA would have been motivated and found it obvious to save accepted recommendations to the server, and would have a reasonable expectation of success, as demonstrated by *Faenger*. *Id.* For example, *Faenger* teaches that users may “**accept** the offer” of the **recommendation** “via voice command or by pressing a particular pushbutton” Ex. 1010, ¶ [0048]. *Faenger* discloses that accepted recommendations are **saved** to a server (e.g., “**stored** . . . on a remote server or other

external memory”) . *Id.*, ¶¶ [0028], [0045], [0071]. A POSA, seeking to improve the user experience of *Rector*, would have applied *Faenger*’s straightforward ways of incorporating user feedback by saving recommendations to the profile on the server so they can be used during later vehicle use. Ex. 1005, ¶ 280.

E. Ground 5: *Rector* in combination with *Kleve*, *Faenger*, and *Yassin* render claim 22 obvious

1. Claim 22¹¹

A POSA would have been motivated and found it obvious to combine *Rector*, *Kleve*, and *Yassin* as discussed above. *Supra*, VI.B.2. The same is true of *Faenger*. *Id.*, VI.D.2. The resulting combination would have met all elements of claim 22, which overlap with elements previously discussed, as shown below. Ex. 1005, ¶¶ 282-287.

22[a]: “The cloud-based system of claim 21, wherein the profile is transferrable to one or more other vehicles, and”

Rector/Kleve/Yassin renders obvious this limitation for the same reasons as claim 2. Ex. 1005, ¶¶ 283-284, 209-214; *see also supra* at VI.B.2 (discussing similar limitation in claim 2).

22[b]: “wherein being transferrable enables syncing of said profile by uploading and downloading the profile from the server and saving it to storage of the

¹¹ Claim 22 is shown in the requested COC. Ex. 1002, 627.

one or more other vehicles for use of said plurality of settings.”

Yassin discloses enabling syncing of profiles as claimed such that the same synced profile settings can be applied to other vehicles. Ex. 1008, 6:65-67; Ex. 1005, ¶ 285. *Yassin* states that a user’s settings are retrievable from a server “with any of a variety of vehicles in a variety of locations.” Ex. 1008, 6:65-67. A POSA would have been motivated and found it obvious to sync profiles between vehicle and server, and would have a reasonable expectation of success, as demonstrated by *Yassin*. Ex. 1005, ¶ 285. As *Yassin* explains, a driver’s profile “can be used to determine the appropriate customizable settings for all other vehicles” Ex. 1008, 6:67-7:4. Accordingly, to improve the user experience of *Rector* a POSA would have applied *Yassin*’s storage of settings to unify the user experience across different vehicles. Ex. 1005, ¶ 285.

VII. The Board Should Not Exercise Discretion to Deny Institution

A. The *Fintiv* Factors Favor Institution

Patent Owner has asserted the ’244 patent against Petitioner in the Eastern District of Texas (“the related litigation”). *Infra*, IX.B. The most relevant *Fintiv* factors demonstrate that the Board should not deny institution. *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 (PTAB Mar. 20, 2020) (precedential).

Regarding Factor 1, a stay has been neither requested nor granted. Thus, Factor 1 is neutral.

Regarding Factor 2, trial is set for July 21, 2025, before the final written decision. In light of the Board’s holistic analysis, however, the litigation trial date is not determinative. *See, e.g., NetNut Ltd. v. Bright Data Ltd.*, IPR2021-01492, Paper 12 at 9-16 (PTAB Mar. 21, 2022) (instituting review with related litigation trial date six months before FWD; no stipulation regarding district court arguments made). Thus, in view of the other factors, Factor 2 does not warrant denial.

Under Factor 3, the Board considers Petitioner’s timing in filing the petition. *Fintiv*, Paper 11 at 11. Here, Petitioner moved with speed and diligence in bringing this challenge—within approximately three months after Patent Owner served infringement contentions—mitigating against the parties’ investment. *CoolIT*, Paper 10 at 11-12 (finding petitioner acted diligently where it filed petition five months after patent owner identified asserted claims); *Fintiv*, Paper 11 at 11. The Board also considers, under Factor 3, “the amount and type of work already completed in the parallel litigation[.]” *Fintiv*, Paper 11 at 9. Here, by institution, the district court’s investment regarding the ’244 patent will be minimal. In the related litigation, claim construction briefing and the Markman hearing will occur after institution, as will the completion of fact discovery, expert discovery, and dispositive motions. Ex. 1011; *see also Protect Animals with Satellites LLC, v. OnPoint Sys., LLC*, IPR2021-01483, Paper 11 at 14-15 (PTAB Mar. 4, 2022); *Fintiv*, Paper 11 at 9-10; *NetNut*, Paper 12 at 11. Thus, Factor 3 favors institution.

Factor 4 does not warrant denial. *See NetNut*, Paper 12 at 8-16 (instituting review with no stipulation regarding district court arguments made). Also, this Petition challenges additional claims (claims 12, 13) not asserted in the related litigation (Ex. 1012), creating additional nonoverlapping issues. *3Shape A/S v. Align Tech., Inc.*, IPR2020-00223, Paper 12 at 34 (PTAB May 26, 2020) (finding that the related litigation “will not resolve all claims at issue in [the PTAB] proceeding”); *Apple Inc. v. Neodron, Ltd.*, IPR2020-00778, Paper 10 at 19 (PTAB Sept. 14, 2020) (nonoverlap of two claims supports institution). Thus, Factor 4 supports institution.

Regarding Factor 5 although Petitioner is a defendant in the related litigation, this does not warrant denial. *See, e.g., 3Shape*, Paper 12 at 32-34 (institution despite Petitioner being defendant in district court); *Neodron*, Paper 10 at 19-20 (same).

Factor 6 favors institution because the merits of this Petition are strong. The Petition relies upon materially different and non-cumulative references not applied during prosecution of the ’244 patent, which teach the very features Applicant argued during prosecution to be lacking from the prior art. *See supra*, VI.

Accordingly, the *Fintiv* factors favor instituting IPR.

B. The *Becton, Dickinson* Factors Do Not Warrant Denial

The factors in *Becton, Dickinson & Co. v. B. Braun Melsungen AG* also do not warrant denial. IPR2017-01586, Paper 8 at 17-18 (PTAB Dec. 15, 2017); *see also Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH*, IPR2019-01469, Paper 6 (PTAB Feb. 13, 2020) (precedential).

None of the references relied on in the grounds of this Petition were applied during prosecution of the '244 patent or any '244 patent family member. Moreover, Petitioner's references and combination rationales are not cumulative to those used during prosecution of the '244 patent, or any '244 patent family member. Indeed, Patent Owner attempted to distinguish the prior art cited during prosecution by arguing that the prior art lacked certain features. The references in this Petition contain those very features.

Accordingly, the *Becton, Dickinson* factors favor institution.

VIII. Grounds for Standing

Petitioner certifies that the '244 patent is available for IPR and that Petitioner is not barred or estopped from requesting IPR on the grounds identified herein.

IX. Mandatory Notices

A. Real Party-in-Interest Under 37 C.F.R. § 42.8(b)(1)

The real parties-in-interest are Toyota Motor Corp., Toyota Motor North America, Inc., and Toyota Motor Sales, U.S.A., Inc.

B. Related Matters Under 37 C.F.R. § 42.8(b)(2)

To Petitioner's knowledge, the '244 patent is, or has been, involved in the following district court litigations and Board proceedings. The case below has been consolidated for pretrial issues with *Emerging Automotive LLC v. Kia Corp.*, No. 2:23-cv-00437-JRG (E.D. Tex.) although the '244 patent is not asserted against Kia in that litigation.

Name	Number	Court	Filed
<i>Emerging Automotive LLC v. Toyota Motor Corp. et al.</i>	2:23-cv-00434	EDTX	Sept. 20, 2023

To Petitioner's knowledge, the '244 patent is related to the following U.S. applications that had been pending as of the issuance of the '244 patent, and their corresponding issued patents (if applicable):

Application No.	Patent No.
61/745,729	(n/a)
61/478,436	(n/a)
13/452,881	10,217,160
13/452,882	9,123,035
13/784,823	9,285,944
13/797,974	9,180,783
13/797,982	(Abandoned)
13/842,158	9,229,905
13/906,335	9,104,537
13/911,072	9,809,196
13/934,215	9,581,997
13/937,202	9,346,365
14/050,314	9,171,268
14/063,638	9,189,900
14/063,837	9,139,091
14/145,693	9,372,607

Inter Partes Review
U.S. Patent No. 11,396,244

14/173,818	9,697,733
14/176,138	9,697,503
14/222,670	9,348,492
14/246,145	9,229,623
14/251,537	9,230,440
14/275,569	9,467,515
14/281,892	9,545,853
14/288,356	(Abandoned)
14/303,442	9,365,188
14/316,559	9,371,007
14/338,636	9,648,107
14/499,039	9,536,197
14/595,186	9,177,305
14/599,541	9,177,306
14/602,256	9,129,272
14/640,004	9,423,937
14/672,038	10,286,919
14/677,341	9,778,831
14/790,409	9,215,274
14/801,803	9,193,277
14/872,404	9,335,179
14/880,970	9,579,987
14/949,883	9,493,130
14/952,911	9,288,270
14/987,755	10,218,771
14/989,100	10,839,451
14/997,429	(Abandoned)
15/071,120	9,426,225
15/085,094	10,286,842
15/161,373	9,434,270
15/180,306	9,499,129
15/188,971	9,815,382
15/191,506	9,597,973
15/243,933	10,286,798
15/243,948	10,225,350
15/257,016	9,718,370
15/290,430	10,223,134
15/344,566	9,663,067
15/351,422	9,672,823

15/384,314	10,411,487
15/387,651	10,181,099
15/404,574	10,274,948
15/420,098	10,424,296
15/444,892	10,396,576
15/444,328	10,308,244
15/463,287	9,738,168
15/469,517	9,855,947
15/469,520	9,963,145
15/470,881	10,535,341
15/607,418	10,407,026
15/615,812	9,818,088
15/657,112	9,802,500
15/683,286	9,925,882
15/696,618	9,928,488
15/714,113	10,821,845
15/723,790	9,916,071
15/786,578	10,210,487
15/787,295	10,071,643
15/787,414	10,286,875
15/787,677	10,453,453
15/787,691	10,821,850

C. Lead and Back-Up Counsel Under 37 C.F.R. § 42.8(b)(3)

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D. Service Information Under 37 C.F.R. § 42.8(b)(4)

Please address all correspondence to counsel at the addresses above.

Petitioner consents to service by email.

X. Conclusion

Petitioner requests the Board institute IPR and cancel all challenged claims.

Respectfully submitted,

Dated: April 25, 2024

By: /Joshua L. Goldberg/
Joshua L. Goldberg, Reg. No. 59,369

CERTIFICATION UNDER 37 C.F.R. § 42.24(D)

Pursuant to 37 C.F.R. § 42.24(d), Petitioner hereby certifies that the foregoing Petition contains 13,966 words, excluding parts of this Petition exempted under § 42.24(a), as measured by the word-processing system used to prepare this paper.

Dated: April 25, 2024

By: /Joshua L. Goldberg/
Joshua L. Goldberg, Reg. No. 59,369

CERTIFICATE OF SERVICE

The undersigned certifies that the foregoing Petition for *Inter Partes* Review, the associated Powers of Attorney, and Exhibits 1001-1015 were served on April 25, 2024, on counsel of record for the subject patent by FedEx Priority Overnight at the addresses below.

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