

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TOYOTA MOTOR CORP.,
Petitioner.

v.

AUTOCONNECT HOLDINGS LLC,
Patent Owner.

Case No. PGR2025-00041
Patent No. 12,039,243

DECLARATION OF SCOTT DENNING

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I. Introduction

1. I have been asked by Toyota Motor Corp. (“Toyota” or “Petitioner”) to provide expert opinions in the above-captioned Post-Grant Review proceeding involving U.S. Patent No. 12,039,243 (“the ’243 patent”), which is entitled “Access and Portability of User Profiles Stored as Templates.” Ex. 1001 at Cover Page.

2. Specifically, I have been retained as a technical expert by Toyota to study and provide my opinions on the technology claimed in, and the patentability or unpatentability of, claims 1-20 of the ’243 patent (“the Challenged Claims”). For purposes of this declaration, I was not asked to provide any opinions that are not expressed herein.

3. This declaration is directed to the Challenged Claims of the ’243 patent, and sets forth the opinions I have formed, the conclusions I have reached, and the bases for each.

4. I am familiar with the technology described in the ’243 patent as of its earliest possible priority date of April 15, 2013. I have been asked to provide my technical review, analysis, insights, and opinions regarding the ’243 patent and the Challenged Claims. I have used this experience and insight along with the references identified herein as the basis for my opinions.

5. I am being compensated for my time in preparing this declaration at my standard hourly rate, and my compensation is not dependent upon my opinions or the outcome of the proceedings. I have no stake in the outcome of this proceeding. I am not an employee of Petitioner or any affiliate or subsidiary thereof.

II. Qualifications

6. I have summarized in this section and in my curriculum vitae my educational background, career, and other relevant qualifications. My full curriculum vitae is provided as Exhibit 1004, which I incorporate into my declaration by reference.

7. In formulating my opinions, I have relied upon my training, knowledge, and experience in the relevant art. I have 30 years of experience working with server software, embedded software, communication protocols, mobile devices, computer networks, and vehicle embedded systems. As detailed below, I have contributed architectural design, systems engineering, and millions of lines of functional program code on many projects that are highly relevant to the subject matter of the '243 patent.

8. I worked as a consulting engineer for Optical Robotics in 1995. In my official capacity, I designed and built many robotics components for pipeline inspection that included user and location profiles, user interfaces including remote displays and graphical user interfaces, infrared scanners, and wired and wireless

communication assemblies. For this project, data was collected from the user and numerous sensors around the robotic inspection devices as well as from devices within support trucks and stored within profiles by a data logging system. After the data collection process was complete the data was relayed back to servers located at the home office via a cellular connection or was loaded onto removeable media for manual transfer. These systems required user authentication and administrative permissions to manipulate collected data.

9. In 2000 I was employed by Navsys Corporation and was principal engineer for the Personal Guardian system, a system designed to get assistance for disabled American Veterans in the event that they needed help. This system included many handheld wireless emergency locators having a cellular connection, and a central dispatch center comprised of numerous servers in communication with the emergency locators. The handheld devices had a lcd graphical display, several buttons, a GPS receiver, and a cellular modem. This system required administration and dispatcher authentication, administrative permissions for configuration changes, and included numerous profiles for managing information related to the veterans, their family members, system options, and the dispatch operators. I designed the handheld device firmware, the device and network communications protocols, and many of the routines used by the servers including identifying the

veteran, identifying the location of the device, locating the nearest source of help, and notification of friends and family.

10. While at Navsys I also designed a fleet vehicle dispatch and tracking system for Coca Cola service trucks. This system included a large mapping display along with several servers installed at the dispatch center and GPS logging and user modules installed in the service trucks. The user modules were comprised of a Compaq Ipaq handheld computer connected to a satellite data receiver/transmitter. This system required admin and user authentication, administrative permissions for configuration changes, and included driver, truck, and client profiles, which were stored on the server and a copy of the client profile stored on the iPaq. I designed the system architecture, developed the communication protocols, and wrote the dispatch server and the iPaq Microsoft Pocket PC software applications.

11. In 2004 while at DRS Technologies I worked on the US Army IMPCS program for ITT developing a satellite bandwidth management system that utilized DRS proprietary high-speed signal processors. This system relied on operational profiles stored on the satellites for approving or denying service to users. Authentication was required for all users and special privileges were required and validated for any changes to the operational profiles. I wrote the control plane processor code for the signal processor, which signaled the satellite controller when a user's bandwidth utilization exceeded that permitted by their profile.

12. In 2005 I founded Purple Mountain Labs in Colorado Spring which focused on supercomputing and high-speed communications research and development. During this time, I was chief scientist and led product development for the client Lockheed, which included a new compact massively parallel multi-core supercomputing architecture for military vehicle applications. These included the Global Hawk and Predator reconnaissance aircraft and Aegis class naval destroyers. I ported standard communications and signal processing libraries to our platform and created a suite of administrative tools utilizing profiles for configuring users, jobs, and groups of computing resources. User and device authentication was required, and administrative permissions had to be validated for any system configuration change.

13. In 2008 I was the CTO of Allied Security Trust and designed the architecture of a patent asset tracking database. This system resided on a web server and comprised an online catalog of all known patents currently for sale. The system used predefined profiles to automatically notify members of patents which might be of interest. The profiles included the member point of contact, patent information, technology domain, and seller/broker. Authentication was required for all users and profile management required permission validation.

14. I received a Bachelor of Science degree in Computer Science from Southern College of Technology in 1993. I have a Master of Science in Economic

Analytics from Clemson University and with the exception of defending my dissertation, I have completed all requirements for my Ph.D. degree from University of Colorado with a focus on Machine Learning and Natural Language Processing.

15. A copy of my curriculum vitae is provided as Ex. 1004, which contains further details on my experience, technical expertise, and other qualifications.

III. Materials Considered

16. In formulating my opinions, I have relied upon my training, knowledge, and experience that are relevant to the '243 patent. Furthermore, I have considered specifically the following documents listed below (in addition to any other documents cited in this declaration):

Ex. No.	Description	Abbreviation
1001	U.S. Patent No. 12,039,243	'243 patent
1002	File History of U.S. Patent No. 12,039,243	
1005	U.S. Patent App. Pub. No. 2012/0303178 to Hendry	Hendry
1006	U.S. Patent App. Pub. No. 2007/0276795 to Poulsen	Poulsen
1007	U.S. Patent No. 8,918,231 to Rovik	Rovik
1008	U.S. Patent App. Pub. No. 2007/0255464 to Singh	Singh
1009	U.S. Patent No. 8,977,408 to Cazanias	Cazanias
1010	U.S. Patent App. Pub. No. 2009/0005070 to Forstall	Forstall
1011	U.S. Patent App. Pub. No. 2012/0254960 to Lortz	Lortz
1012	Excerpts from Microsoft Computer Dictionary, 5th Ed. (2002)	
1013	U.S. Patent App. Pub. No. 2009/0325491 to Bell	Bell
1014	Excerpts from Bluetooth Specification v2.1 (2007)	
1015	U.S. Patent No. 9,229,905 to Penilla	Penilla
1016	U.S. Patent App. Pub. No. 2008/0205655 to Wilkins	Wilkins
1017	U.S. Patent No. 8,863,256 to Addepalli	Addepalli
1018	U.S. Patent App. Pub. No. to Larsen	Larsen
1019	U.S. Patent App. Pub. No. to Martin	Martin

Ex. No.	Description	Abbreviation
1020	U.S. Patent App. Pub. No. to Protopapas	Protopapas
1021	U.S. Patent App. Pub. No. 2013/0030645 to Divine	Divine
1022	U.S. Patent App. Pub. No. 2004/0148526 to Sands	Sands
1023	Barth, Matthew, <i>et al.</i> , “Interoperability Options for Shared-Used Vehicle Systems,” <i>Transportation Research Record: Journal of the Transportation Research Board</i> , No. 1887, TRB, National Research Council, Washington, D.C., 2004, pp. 137-144	Barth
1024	U.S. Patent App. Pub. No. 2011/0195699 to Tadayon	Tadayon
1025	Exhibit K2 to AutoConnect’s Disclosure of Asserted Claims and Infringement Contentions, served Jan. 21, 2025, in <i>AutoConnect Holdings, LLC v. Toyota Motor Corp.</i> , No. 2:24-cv-00802 (E.D. Tex.)	
1026	AutoConnect’s Disclosure of Asserted Claims and Infringement Contentions, served Jan. 21, 2025, in <i>AutoConnect Holdings, LLC v. Toyota Motor Corp.</i> , No. 2:24-cv-00802 (E.D. Tex.)	

17. I have also relied upon various legal principles (as explained to me by Toyota’s counsel) in formulating my opinions. My understanding of these principles is summarized below.

IV. Legal Standards

A. Patent Eligibility

18. I have been informed and understand that whether a claim is patent-eligible under 35 U.S.C. § 101 is a matter of law. However, an ineligibility determination may depend on whether certain claim elements were well-known, routine and conventional at the time of filing, a subject on which expert testimony is appropriate.

19. I have been informed and understand that the Supreme Court articulated a two-part subject matter eligibility test, known as the *Alice/Mayo* test (often times, referred to as the *Alice* test), which includes two steps. At the first step, the test asks whether a claim is directed to a judicial exception to patentability (laws of nature, physical phenomena, and abstract ideas). If the claims are so directed, the analysis moves to the second step: determining whether the claims contain “an ‘inventive concept’ sufficient to ‘transform’ the claimed abstract idea into a patent-eligible application.”

20. I have been informed and understand that the United States Patent and Trademark Office has issued Guidance regarding subject matter eligibility and the *Alice* test. Step 1 of the Guidance examines whether the claimed subject matter falls within one of the four statutory categories of invention (processes, machines, manufactures and compositions of matter). Here, the Challenged Claims on their face recite a system and method (namely, machines and processes).

21. I have been informed and understand that, if the claim is so directed, the analysis moves to Step 2A, Prong 1 to determine if the claim recites an abstract idea that falls within the subject matter groups of abstract ideas: (a) mathematical concepts; (b) certain methods of organizing human activity such as a fundamental economic practice; and (c) mental processes. If the claim recites such an abstract idea, the analysis moves to Step 2A, Prong 2 (which I understand corresponds to

first part of the *Alice* test), which asks whether the recited abstract idea is integrated into a practical application. Finally, Step 2B of the Guidance (which I understand corresponds to second part of the *Alice* test) requires evaluating whether the claim recites additional elements that provide an “inventive concept” that amounts to significantly more than the abstract idea itself.

22. I have been informed and understand that the analysis at *Alice* step one considers “whether the claims focus on a specific means or method that improves the relevant technology or are directed to a result or effect that itself is the abstract idea and merely invoke generic processes and machinery.” In cases involving software inventions, I understand that the inquiry may turn on whether the claims focus on the specific asserted improvement in computer capabilities or, instead, on a process that qualifies as an “abstract idea” for which computers are invoked merely as a tool. Further, claim steps that can be performed by a human, mentally or with pen and paper, are non-statutory.

23. I have been informed and understand that a claim can pass *Alice* Step 1 if the abstract idea is integrated into a practical application. However, where, a claim that is nothing more than “a drafting effort designed to monopolize the judicial exception,” fails *Alice* step one.

24. I have been informed and understand that *Alice* step two requires looking at what the claim elements add, in order to determine whether they identify

an inventive concept, which is an element or combination of elements sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the ineligible concept itself.

25. I have been informed and understand that claims lack an inventive concept if they recite no more than well-understood, routine and conventional activities previously known in the industry, and merely require generic computer implementation (*e.g.*, “perform this known process on a computer”) fails to transform an abstract idea into a patent eligible invention.

26. I have been informed and understand that a claim’s underlying idea does not become non-abstract by limiting the invention to a particular field of use or technological environment, such as the Internet.

B. Obviousness

27. I have been informed and understand that a patent claim is unpatentable and invalid if the subject matter of the claim as a whole would have been obvious to a person of ordinary skill in the art in the field of the patent as of the time of the invention at issue.¹ I have been informed and understand that the following factors must be evaluated to determine whether the claimed subject

¹ As I discuss in Section V, below, I use the shorthand “POSITA” to describe this person.

matter is obvious: (i) the scope and content of the prior art; (ii) the difference or differences, if any, between each claim of the patent and the prior art; (iii) the level of ordinary skill in the art at the time the patent was filed; and (iv) any objective indicia of non-obviousness.

28. I have been informed and understand that the objective indicia of non-obviousness (or “secondary considerations”) that should be considered include, for example, the following: (i) commercial success; (ii) long-felt but unresolved needs; (iii) copying of the invention by others in the field; (iv) initial expressions of disbelief by experts in the field; (v) failure of others to solve the problem that the inventor solved; and (vi) unexpected results. I have been informed and understand that evidence of these objective indicia must be commensurate in scope with the claimed subject matter. I am not aware of any objective indicia of non-obviousness relevant to the claims of the '243 patent.

29. I have been informed and understand that independently made, simultaneous inventions, made within a comparatively short space of time, are evidence that the claimed apparatus was the product only of ordinary mechanical or engineering skill.

30. In determining whether the subject matter as a whole would have been obvious at the time that the invention was made to a person having ordinary skill in the art, I have been informed of and understand certain principles regarding the

combination of elements of the prior art. A combination of familiar elements according to known methods is likely to be obvious when it yields predictable results. Also, if a person of ordinary skill in the art can implement a predictable variation in a prior art device, and would see the benefit from doing so, this variation would be obvious. In particular, when there is pressure to solve a problem and there are a finite number of identifiable, predictable solutions, it would be reasonable for a person of ordinary skill to pursue those options that fall within his or her technical grasp. If this process leads to the claimed invention, then the latter is not a patentable invention, but the result of ordinary skill and common sense.

31. I have also been informed and understand that a teaching, suggestion, or motivation is a useful guide in establishing a rationale for combining elements of the prior art. The test poses the question as to whether there is an explicit teaching, suggestion, or motivation in the prior art to combine prior art elements in a way that realizes the claimed invention. Though useful to the obviousness inquiry, I understand that this test should not be treated as a rigid rule. It is not necessary to seek out precise teachings; it is permissible to consider the inferences and creative steps that a person of ordinary skill in the art (who is considered to have an ordinary level of creativity and is not an automaton) would employ.

C. Claim Construction

32. I have been informed and understand that the United States Patent and Trademark Office interprets claim terms in a post-grant review proceeding under the same claim construction standard that is used in a United States federal court. I have been informed and understand that under this standard, the meaning of claim terms is considered from the viewpoint of one of ordinary skill in the art at the time of the invention.

33. I have been informed and understand that claim terms are generally given their plain and ordinary meaning as understood by one of ordinary skill in the art in light of the specification and the prosecution history pertaining to the patent. I have been informed and understand, however, that claim terms are generally not limited by the embodiments described in the specification.

34. I have been informed and understand that in addition to the claims, specification, and prosecution history, other evidence may be considered to ascertain the meaning of claim terms, including textbooks, encyclopedias, articles, and dictionaries. I have been informed and understand that this other evidence is often less significant and less reliable than the claims, specification, and prosecution history.

V. Level of Ordinary Skill in the Art

35. I have been informed and understand that the disclosure of patents and prior art references are to be viewed from the perspective of a person having ordinary skill in the art at the time of the alleged invention. I use the shorthand “POSITA” to describe this person. I have provided my opinions from this perspective. I understand that the relevant time period is around April 2013, the filing date of the earliest provisional application to which the ’243 patent claims priority:

Related U.S. Application Data

- (63) Continuation of application No. 17/233,412, filed on Apr. 16, 2021, now Pat. No. 11,163,931, which is a continuation of application No. 16/247,128, filed on Jan. 14, 2019, now abandoned, which is a continuation of application No. 15/288,244, filed on Oct. 7, 2016, now abandoned, which is a continuation
(Continued)

Related U.S. Application Data

- of application No. 15/099,413, filed on Apr. 14, 2016, now abandoned, and a continuation of application No. 14/831,696, filed on Aug. 20, 2015, now Pat. No. 9,545,930, which is a continuation of application No. 14/252,871, filed on Apr. 15, 2014, now abandoned, which is a continuation of application No. 14/252,865, filed on Apr. 15, 2014, now abandoned, and a continuation of application No. 14/252,868, filed on Apr. 15, 2014, now abandoned, and a continuation of application No. 14/252,863, filed on Apr. 15, 2014, now abandoned, which is a continuation of application No. 14/252,876, filed on Apr. 15, 2014, now abandoned.
- (60) Provisional application No. 61/926,749, filed on Jan. 13, 2014, provisional application No. 61/924,572, filed on Jan. 7, 2014, provisional application No. 61/904,205, filed on Nov. 14, 2013, provisional application No. 61/891,217, filed on Oct. 15, 2013, provisional application No. 61/870,698, filed on Aug. 27, 2013, provisional application No. 61/865,954, filed on Aug. 14, 2013, provisional application No. 61/811,981, filed on Apr. 15, 2013.

Ex. 1001 at pages 1-2 (*i.e.*, Cover Page and second page) (red coloring added).

36. I have been informed and understand that prior art references can provide evidence of the level of ordinary skill in the art, and that factors that may be considered in determining this level of skill can include the educational level of the inventors and active workers in the field, the types of problems encountered in the art, the prior art solutions to those problems, the rapidity with which innovations are made, and the sophistication of the technology.

37. Based on my education and experience, as described above and in my CV, as well as consistent with the '243 patent and the prior art described below, it is my opinion that those of ordinary skill in the art during the relevant period would have had at least a bachelor's degree in bachelor's degree in electrical engineering, computers science, or a related field, and two years' experience in data management or client-server systems and communications. However, I note that this description is approximate, and a higher level of education or skill might make up for less experience, and additional experience could make up for a lower education level.

38. Given my experience in the field, I am familiar with the knowledge that a POSITA would have had at the time and how they would have viewed the available information at the time. My testimony is offered from this perspective, even if it does not specifically refer to the perspective of a person of ordinary skill in the art in every instance. I am well qualified to determine the level of ordinary

skill in the art. First, I am very familiar with the technology of the '243 patent during the April 2013 timeframe. As summarized above, by that time, among other relevant experience, I had acquired extensive experience relating to the design of client-server software for setting user permissions, authenticating users, and updating profiles between a vehicle installed system and a server that also involved a network connected hand-held mobile device.

39. Regardless of whether I use “I” or a “POSITA” during my technical analysis below, all of my statements and opinions are always to be understood to be based on how a POSITA would have understood or read a document at the time of the invention.

VI. Overview of the '243 Patent Specification, Prosecution History and Claims

A. The '243 Patent

40. The '243 patent discloses “[a] system to access one or more user profiles that govern one or more vehicle functions.” Ex. 1001 at Abstract. In the Abstract, the patent states that the “system cooperates with a processor and verification module which are adapted to verify, using one or more of biometric information, gesture recognition, facial recognition and device identification information, that a user has authority to access the one or more user profiles, where

the one or more profiles are stored in one or more of a vehicle, a cloud and a communications device.” Ex. 1001 at Abstract.

41. The '243 patent provides a “Background” section. Ex. 1001 at 3:20-

51. According to the “Background” of the '243 patent:

Whether using private, commercial, or public transport, the movement of people and/or cargo has become a major industry. In today's interconnected world, daily travel is essential to engaging in commerce. Commuting to and from work can account for a significant portion of a traveler's day. As a result, vehicle manufacturers have begun to focus on making this commute, and other journeys, more enjoyable.

Currently, vehicle manufacturers attempt to entice travelers to use a specific conveyance based on any number of features. Most of these features focus on vehicle safety or efficiency. From the addition of safety-restraints, air-bags, and warning systems to more efficient engines, motors, and designs, the vehicle industry has worked to appease the supposed needs of the traveler. Recently, however, vehicle manufacture[r]s have shifted their focus to user and passenger comfort as a primary concern. Making an individual more comfortable while traveling instills confidence and pleasure in using a given vehicle, increasing an individual's preference for a given manufacturer and/or vehicle type.

One way to instill comfort in a vehicle is to create an environment within the vehicle similar to that of an individual's home. Integrating features in a vehicle that are associated with comfort found in an individual's home can ease a traveler's transition from home to vehicle. Several manufacturers have added comfort features in vehicles such as the following: leather seats, adaptive and/or personal climate control systems, music and media players, ergonomic controls, and, in some cases, Internet connectivity. However, because these manufacturers

have added features to a conveyance, they have built comfort around a vehicle and failed to build a vehicle around comfort.

Ex. 1001 at 3:20-51.

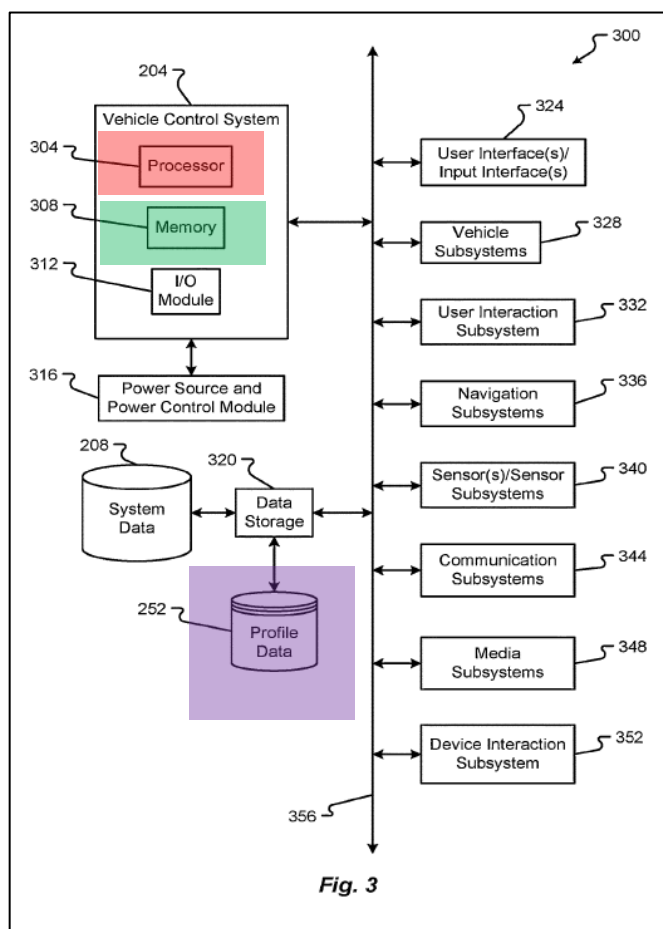
42. Thus, according to the '243 patent, “[t]here is a need for a vehicle ecosystem, which can integrate both physical and mental comforts, while seamlessly communicating with current electronic devices to result in a totally intuitive and immersive user experience.” Ex. 1001 at 3:55-58.

43. The '243 patent includes 29 figures, Figures 1-29.

44. In my declaration, for ease of reference, coloring has been added to certain figures to highlight certain elements. For example, the figures in the '243 patent are all black-and-white, and so any coloring in the figures in my declaration has been added to the figures from the patent. I have also added coloring to certain text for emphasis, which text appears in black-and-white in the original document.

45. Figure 3, reproduced below, “is a block diagram of an embodiment of a vehicle control system environment.” Ex. 1001 at 15:15-16. As depicted in Figure 3, vehicle control system 204 includes **processor 304** and **memory 308** (both of which are depicted as black boxes and as I discuss below, the components are disclosed to be conventional, off-the-shelf processors and memory). The '243 patent discloses that “processor 304 may comprise a general purpose programmable processor or controller for executing application programming or instructions,”

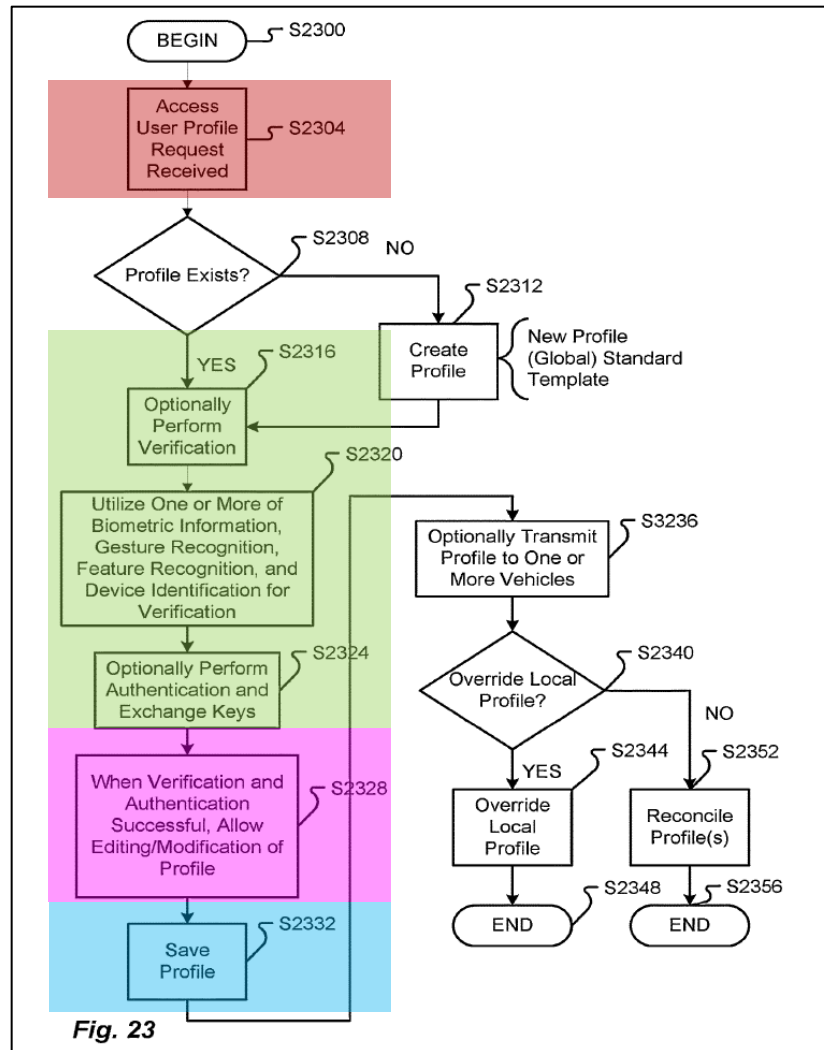
“may, optionally, include multiple processor cores, and/or implement multiple virtual processors,” and “generally functions to run programming code or instructions implementing various functions of the vehicle control system 204.” Ex. 1001 at 21:64-22:10. As to memory 308 (which the ’243 patent also refers to as storage devices 308), memory 308 may be “disk drives, optical storage devices, solid-state storage devices such as a random access memory (‘RAM’) and/or a read-only memory (‘ROM’), which can be programmable, flash-updateable and/or the like.” Ex. 1001 at 22:19-23.



Ex. 1001 at FIG. 3.

46. As shown above in Figure 3, the system also includes **profile data 252**. The '243 patent describes profile data 252 in various ways, such as “profile data store 252,” “profile data storage 252,” and “profile database 252.” Ex. 1001 at 23:26-33, 46:51-52, 71:26-44. As discussed further below, “profile data 252 can be any type of data associated with at least one user 216 including, but in no way limited to, bioinformatics, medical information, driving history, personal information (e.g., home physical address, business physical address, contact addresses, likes, dislikes, hobbies, size, weight, occupation, business contacts—including physical and/or electronic addresses, personal contacts—including physical and/or electronic addresses, family members, and personal information related thereto, etc.), other user characteristics, advertising information, user settings and feature preferences, travel information, associated vehicle preferences, communication preferences, historical information (e.g., including historical, current, and/or future travel destinations), Internet browsing history, or other types of data.” Ex. 1001 at 18:22-36.

47. Figure 23, reproduced below, “outlines an exemplary method of profile editing/modification.” Ex. 1001 at 87:44-45.



Ex. 1001 at FIG. 23.

48. The '243 patent describes the steps in Figure 23 to access and update a user profile using the conventional order of steps, namely, **(1) requesting access to a profile**, **(2) determining whether the access is allowed using conventional verification and/or authentication techniques**, **(3) allowing access and updates to the profile**, and **(4) saving the updated profile**. This order is simply the way it was conventionally done, consistent with both the '243 patent and the state of the

art (which I discuss below). The '243 patent describes this process in Figure 23 as follows:

In particular, control begins in step S2300 and continues to step S2304. **In step S2304, the user profile access request is received.** Next, in step S2308, a determination is made if a profile already exists. If a profile does not exist, control continues to step S2312, where a new profile can be created. As discussed, this new profile can be created from scratch, or can be based on a global standard template, or based on some other template, for example, which can be that of another user. Control then continues to step S2316.

In step S2316, a verification could optionally be performed to ensure the user is authorized to access the profile. Similarly, in step S2320, one or more of biometric information, gesture recognition, feature recognition, device identification, password recognition, or the like, can be used for verification of the user before access to the requested profile is granted. Next, in step S2324, the authentication and exchanging of one or more keys can optionally be performed, such as the exchange of a public and/or private key, as discussed above. Then, in step S2328, if one or more of verification or authentication are successful, the user can be allowed to edit/modify the accessed profile. Upon completion of any edit/modifications, the profile can be saved in step S2332, with control continuing to step S2336.

In step S2336, the saved profile can optionally be transmitted to one or more other vehicles, or one or more other devices or locations on a communications network as discussed. Next, in step S2340, a determination is made as to whether the transmission of the profile to one or more other destinations provides a conflict, and whether or not the transferred profile should overwrite the local profile at the destination. If the local profile is to be overwritten, control continues to step S2444, where the local profile is overwritten by settings in the

transmitted profile. Control then continues to step S2348, where the control sequence ends.

Ex. 1001 at 87:44-88:21.

49. The '243 patent explains the meaning of several terms as used in the patent (including terms that appear in the claims, such as “**determine**,” “**vehicle**,” and “**profile**”). Ex. 1001 at 10:5-14:61.

50. For example, according to the '243 patent, “**determine**” and variations “include any type of methodology, process, mathematical operation, or technique”:

The terms “**determine**,” “calculate,” and “compute,” and variations thereof, as used herein, are used interchangeably and include **any type of methodology, process, mathematical operation, or technique**.

Ex. 1001 at 14:22-25 (emphasis added). The '243 patent does not provide any particular details about how to determine particular events or things, other than the functions simply occurring.

51. Also according to the '243 patent, a “**vehicle**” and variations can refer to a variety of devices and structures:

The terms “vehicle,” “car,” “automobile,” and variations thereof may be used interchangeably herein and can refer to a device or structure for transporting animate and/or inanimate or tangible objects (e.g., persons and/or things), such as a self-propelled conveyance. A vehicle as used herein can include any conveyance or model of a conveyance, where the conveyance was originally designed for the purpose of moving one or more tangible objects, such as people, animals, cargo, and the like. The term “vehicle” does not require that a conveyance

moves or is capable of movement. Typical vehicles may include but are in no way limited to cars, trucks, motorcycles, busses, automobiles, trains, railed conveyances, boats, ships, marine conveyances, submarine conveyances, airplanes, space craft, flying machines, human-powered conveyances, and the like.

Ex. 1001 at 14:36-50 (emphasis added).

52. Also according to the '243 patent, the “term ‘**profile**,’ as used herein, can refer to **any data structure, data store, and/or database that includes one or more items of information** associated with a vehicle, a vehicle system, a device (e.g., a mobile device, laptop, mobile phone, etc.), or a person.” Ex. 1001 at 14:51-55 (emphasis added). In other words, according to the '243 patent, a profile is broadly described as being basically any data structure or the like with information.

53. The '243 patent provides further disclosure that the user profile and data can be any type of data, for example:

The profile data 252 can be any type of data associated with at least one user 216 including, but in no way limited to, bioinformatics, medical information, driving history, personal information (e.g., home physical address, business physical address, contact addresses, likes, dislikes, hobbies, size, weight, occupation, business contacts—including physical and/or electronic addresses, personal contacts—including physical and/or electronic addresses, family members, and personal information related thereto, etc.), other user characteristics, advertising information, user settings and feature preferences, travel information, associated vehicle preferences, communication preferences, historical information (e.g., including historical, current, and/or future travel destinations), Internet browsing history, **or other types of data.**

Ex. 1001 at 18:22-36 (emphasis added).

54. The '243 patent also discloses that its system and method rely on known, conventional computing components, such **processors** and **memory**, and provides several examples (including off-the-shelf components) that may be used with its system and method. I agree with the '243 patent that such memory and processors were well-known by April 2013 (and earlier). I also agree with the '243 patent that it was known and typical to program processors in conventional, known ways to perform various functions. This is further evidenced by the state of the art that I discuss below in my declaration.

55. As to **processors**, the '243 patent—consistent with the state of the art and the knowledge of a POSITA—discloses that conventional, off-the-shelf processors can be used to implement the system and method. In effect, any known processor can be used, and programmed to perform various functions using known, conventional methods. For example, according to the '243 patent:

- **“The processor 304 may comprise a general purpose programmable processor or controller for executing application programming or instructions.** The processor 304 may, optionally, include multiple processor cores, and/or implement multiple virtual processors. Additionally or alternatively, the processor 304 may include multiple physical processors. As a particular example, the processor 304 may comprise a specially configured application specific integrated circuit (ASIC) or other integrated circuit, a digital signal processor, a controller, a hardwired electronic or logic circuit, a programmable logic device or gate array, a special purpose computer, or the like. **The processor 304 generally functions to run**

programming code or instructions implementing various functions of the vehicle control system 204.” Ex. 1001 at 21:64-22:10 (emphasis added).

- **“Optionally, the systems and methods of this disclosure can be implemented in conjunction with a special purpose computer, a programmed microprocessor or microcontroller and peripheral integrated circuit element(s), an ASIC or other integrated circuit, a digital signal processor, a hard-wired electronic or logic circuit such as discrete element circuit, a programmable logic device or gate array such as PLD, PLA, FPGA, PAL, special purpose computer, any comparable means, or the like.** In general, any device(s) or means capable of implementing the methodology illustrated herein can be used to implement the various aspects of this disclosure. Exemplary hardware that can be used for the disclosed embodiments, configurations and aspects includes computers, handheld devices, telephones (e.g., cellular, Internet enabled, digital, analog, hybrids, and others), and other hardware known in the art. Some of these devices include processors (e.g., a single or multiple microprocessors), memory, nonvolatile storage, input devices, and output devices. Furthermore, alternative software implementations including, but not limited to, distributed processing or component/object distributed processing, parallel processing, or virtual machine processing can also be constructed to implement the methods described herein.” Ex. 1001 at 92:66-93:21 (emphasis added).
- **“In yet another embodiment, the disclosed methods may be partially implemented in software that can be stored on a storage medium, executed on programmed general-purpose computer with the cooperation of a controller and memory, a special purpose computer, a microprocessor, or the like.** In these instances, the systems and methods of this disclosure can be **implemented as program embedded on personal computer such as an applet, JAVA® or CGI script,** as a resource residing on a server or computer workstation, as a routine embedded in a dedicated measurement system, system component, or the like. The system can also be implemented by physically incorporating the system and/or method into a software and/or hardware system.” Ex. 1001 at 93:35-47 (emphasis added).

- **“Examples of the processors as described herein may include, but are not limited to, at least one of Qualcomm® Snapdragon® 800 and 801, Qualcomm® R Snapdragon® 610 and 615 with 4G LTE Integration and 64-bit computing, Apple® A7 processor with 64-bit architecture, Apple® M7 motion coprocessors, Samsung® Exynos® R series, the Intel® Core™ family of processors, the Intel® Xeon® family of processors, the Intel® Atom™ family of processors, the Intel Itanium® R family of processors, Intel® Core® i5-4670K and i7-4770K 22 nm Haswell, Intel® Core® i5-3570K 22 nm Ivy Bridge, the AMD® FX™ family of processors, AMD® FX-4300, FX-6300, and FX-8350 32 nm Vishera, AMD® Kaveri processors, Texas Instruments® Jacinto C6000™ automotive infotainment processors, Texas Instruments® OMAP™ automotive-grade mobile processors, ARM® Cortex™-M processors, ARM® Cortex-A and ARM926EJ-S™ processors, other industry-equivalent processors, and may perform computational functions using any known or future-developed standard, instruction set, libraries, and/or architecture.”** Ex. 1001 at 93:48-67 (emphasis added).

56. As can be seen from the above examples regarding the '243 patent's disclosure for processors, the '243 patent simply uses known, conventional processors, programmed in known, conventional ways to execute instructions or code to perform various known functions, consistent with the understanding of a POSITA and the state of the art. That is, as known to a POSITA and consistent with the state of the art, the '243 patent discloses to use conventional, off-the-shelf processors and the programming thereof, in their conventional way. I also note that the '243 patent does not provide any particular algorithms or program code; rather, consistent with the state of the art and knowledge of a POSITA, the '243 patent

simply identifies commonly used functions to be performed and states that a processor can be programmed to perform those functions.

57. As to **memory**, the '243 patent likewise discloses to use well-known data storage systems and devices. For example:

- “The vehicle control system 204 may interact with **a memory or storage system 208 that stores system data**. System data 208 may be any type of data needed for the vehicle control system 204 to control effectively the vehicle 104. The system data 208 can represent any type of database or other storage system. Thus, the system data 208 can be a flat file data system, an object-oriented data system, or some other data system that may interface with the vehicle control system 204.” Ex. 1001 at 16:66-17:11 (emphasis added).
- “The vehicle control system 204 may also include one or more storage devices 308. **By way of example, storage devices 308 may be disk drives, optical storage devices, solid-state storage devices such as a random access memory (‘RAM’) and/or a read-only memory (‘ROM’), which can be programmable, flash-updateable and/or the like**. The vehicle control system 204 may additionally include a computer-readable storage media reader; a communications system (e.g., a modem, a network card (wireless or wired), an infra-red communication device, etc.); and working memory 308, which may include RAM and ROM devices as described above. The vehicle control system 204 may also include a processing acceleration unit, which can include a digital signal processor (DSP), a special-purpose processor, and/or the like.” Ex. 1001 at 22:18-32 (emphasis added).
- “The computer-readable storage media reader can further be connected to a computer-readable storage medium, together (and, optionally, in combination with storage device(s)) comprehensively representing remote, local, fixed, and/or removable storage devices plus storage media for temporarily and/or more permanently containing computer-readable information. The communications system may permit data to be exchanged with an external or internal network and/or any other computer or device described herein. **Moreover, as disclosed herein,**

the term ‘storage medium’ may represent one or more devices for storing data, including read only memory (ROM), random access memory (RAM), magnetic RAM, core memory, magnetic disk storage mediums, optical storage mediums, flash memory devices, and/or other machine readable mediums for storing information.’
Ex. 1001 at 22:33-48 (emphasis added).

58. Further confirming to a POSITA that the ’243 patent is simply relying upon conventional, known data processing and communications components, rather than some improvement to those components, the ’243 patent states that future standards and protocols could likewise be used:

Although the present disclosure describes components and functions implemented in the aspects, embodiments, and/or configurations with reference to particular standards and protocols, the aspects, embodiments, and/or configurations **are not limited** to such standards and protocols. **Other similar standards and protocols not mentioned herein are in existence and are considered to be included in the present disclosure.** Moreover, the standards and protocols mentioned herein and other similar standards and protocols not mentioned herein are periodically superseded by faster or more effective equivalents having essentially the same functions. **Such replacement standards and protocols having the same functions are considered equivalents included in the present disclosure.**

Ex. 1001 at 94:1-15 (emphasis added).

59. The ’243 patent, consistent with the knowledge of a POSITA and the state of the art, also discloses to use known, conventional **authentication and verification techniques**, including to provide access to user profiles. As evidenced by the disclosure in the ’243 patent, the patent simply relies on known, conventional

techniques—such as biometrics, passwords, and public/private key exchange—rather than any improvements to them. For example:

- “In step S2316, a verification could optionally be performed to ensure the user is authorized to access the profile. Similarly, in step S2320, **one or more of biometric information, gesture recognition, feature recognition, device identification, password recognition, or the like, can be used for verification of the user before access to the requested profile is granted.** Next, in step S2324, the authentication and exchanging of one or more keys can optionally be performed, such as the **exchange of a public and/or private key**, as discussed above. Then, in step S2328, if one or more of verification or authentication are successful, the user can be allowed to edit/modify the accessed profile. Upon completion of any edit/modifications, the profile can be saved in step S2332, with control continuing to step S2336.” Ex. 1001 at 97:54-67 (emphasis added).
- “The authentication performed by the verification module 2012 can be based on the exchange of the security keys between the user, the vehicle, and/or even a server(s). This **type of encryption may be cryptographically asymmetric in nature, such as private and public keys.** In one example, a user may maintain a private key on a mobile device, and a public key may be provided by a vehicle, such a rental vehicle. In another example, the user may maintain the private key on the mobile device, and the private key may be provided by the vehicle, such as a rental vehicle. Other embodiments may use a private key on the communication device and a private key provided by the vehicle and/or a public key on the phone and a public key provided by the vehicle. In yet another embodiment, the exchange of keys may be facilitated via a certified trusted authority, similar to a certificate of authority (CA). In another optional embodiment, a **biometric verification**, or confirmation, of the user may be required prior to initiating the authentication process performed by the verification module 2012. For example, the first step of authentication may include identifying one or more biometric features of a user using any one or more of the sensors disclosed herein. Once the user is confirmed, the authentication may proceed to **exchange security keys.**” Ex. 1001 at 73:24-47 (emphasis added).

- “Biometric sensors 756 may be employed to identify and/or record characteristics associated with a user 216. It is anticipated that biometric sensors 756 can include at least one of image sensors, IR sensors, **fingerprint readers**, weight sensors, load cells, force transducers, heart rate monitors, blood pressure monitors, and the like as provided herein.” Ex. 1001 at 39:15-20 (emphasis added).
- “In accordance with another exemplary operational scenario, the camera application module 2224, in cooperation with the expression/facial ID/gesture database 2228, and the context module 2216, can determine the emotional state of one or more occupants in the vehicle. Information from the camera application module 2224 can be correlated with profile data and through use of the user identification data module 822 determine which captured image(s) belongs to which vehicle occupant. For example, the profile data 252 may include **biometric information, such as facial information, for the user associated with that profile**. A controller or processor could then map the obtained one or more images to information in the profile data utilizing **known facial recognition techniques**, and in cooperation with the context module 2216, determine an emotional state associated with one or more of the users in the vehicle. These various emotional states could then be reported, for example, using the vehicle reporting module 2208, to one or more other destinations, such as to the occupants' parents via a communication to their smart phone or other electronic device.” Ex. 1001 at 83:35-54 (emphasis added).

B. The File History of the '243 Patent

60. I have also reviewed the file history (Ex. 1002) for the application leading to the '243 patent.

61. The applicant filed the application leading to the '243 patent on November 11, 2021. Ex. 1001 at Cover Page; Ex. 1002 at 2-3.

62. The application, as filed, included 20 claims, application claims 1-20.

Ex. 1002 at 106-108 (original application claims 1-20).

63. Application claim 1, for example, recited:

1. A system to access one or more user profiles that govern one or more vehicle functions comprising:
a processor and verification module adapted to verify, using one or more of biometric information, gesture recognition, facial recognition and device identification information, that a user has authority to access the one or more user profiles, the one or more profiles being stored in one or more of a vehicle, a cloud and a communications device; and
an edit module adapted to allow the user to make one or more edits to the one or more user profiles.

Ex. 1002 at 106.

64. On February 8, 2023, the Examiner rejected original application claims 1-20. Ex. 1002 at 203-211. In particular, the Examiner rejected claims 1-3, 5, 7-13, and 17-20 as being anticipated by U.S. Patent App. Pub. No. 2013/0030645 to Divine (Ex. 1021) and claims 4, 6, 14, and 16 as being obvious over Divine (Ex. 1021) in view of U.S. Patent App. Pub. No. 2004/0148526 to Sands (Ex. 1022). Ex. 1002 at 205-209. For example, as to the anticipation rejection, the Examiner stated:

1. A system to access one or more user profiles that govern one or more vehicle functions comprising:
a processor [fig. 1, element 4] and verification module adapted to verify, using one or more of biometric information, gesture recognition, facial recognition and device identification information, that a user has authority to access the one or more user profiles [paragraphs 0029-0034],
the one or more profiles being stored in one or more of a vehicle, a cloud and a communications device; and an edit module adapted to allow the user to make one or more edits to the one or more user profiles.
2. The system of claim 1, further comprising one or more templates on which the one or more user profiles are based [paragraph 0029-0034, 0038, 0054].
3. The system of claim 1, wherein the verification module further receives a request to access a specific user profile, the user profile storing preferences for the user that govern one or more of vehicle functions, vehicle preferences and vehicle infotainment settings [paragraphs 0041-0042].
5. The system of claim 1, further comprising a profile subsystem adapted to resolve conflicts between the one or more edits and the one or more user profiles [paragraph 0061].
7. The system of claim 1, wherein the one or more user profiles include one or more of: vehicle preferences, seat settings, HVAC settings, recorded settings, geographic location information, mobile device information, mobile device electronic addresses, Internet browsing history and content, application store selections, user settings, enabled features, disabled features, private information, social network information,

user presence information, user business account information, secure data, biometric information, audio information from on board microphones, video information from on board cameras, Internet browsing history and browsed content from using an on board computer, local area network settings, electronic map information, user purchasing preferences, user driving behavior and preferences, user behavior with respect to a selected object, user socioeconomic status, user residence and business addresses, user communication devices and electronic addresses therefor, user biometric information and other user identification information, user family members and, for each family member, the foregoing information [paragraphs 0026-0027, 0029-0034, 0045, 0050, 0053].

8. The system of claim 1, wherein in at least one of the one or more user templates is based on a global standard template, wherein the global standard template is common among one or more of vehicle manufacturers, company vehicles and a geographic area [paragraphs 0005, 0034, 0061, 0064].

9. The system of claim 1, wherein the one or more user profiles can be transferred from one or more of car-to-car, device-to-car, car-to-device, car-to-cloud, and cloud-to-car [paragraphs 0027, 0053].

10. The system of claim 9, wherein the device is a mobile communications device [paragraphs 0005, 0033].

4. Claims 11-13, 15, and 17-20 are directed to a method with substantially equivalent claim limitations as claims 1-3, 5, and 10, and are rejected for the same reasons as set forth supra.

Ex. 1002 at 205-206.

65. In response, the applicant cancelled original application claims 1-20 and added new application claims 21-40. Ex. 1002 at 285-303.

66. The applicant asserted that the prior art (in particular, Divine and Sands) failed to disclose certain claim limitations, for example:

Independent Claim 21

New independent claim 21 is allowable. Claim 21 sets forth a system comprising memory, machine-readable instructions, and one or more processors. Claim 21 sets forth that the one or more processors are to execute the machine-readable instructions to receive a request to access a user profile stored at a vehicle, the user profile including one or more preferences associated with functions or settings of the vehicle. Claim 21 further sets forth that the one or more processors are to execute the machine-readable instructions to determine, by performing at least one of a verification process or an authentication process in response to the request, whether the request is authorized to access the user profile. Claim 21 further sets forth that the one or more processors are to execute the machine-readable instructions, in response to determining that the request is authorized to access the user profile, to determine one or more requested modifications to at least one of the one or more preferences. Claim 21 further sets forth that the one or more processors are to execute the machine-readable instructions, in response to the one or more requested modifications, to create an updated user profile at the vehicle, the updated user profile including one or more updated preferences based on the one or more requested modifications. Divine, whether taken alone or in combination with Sands, is missing at least the elements of claim 21 emphasized above.

Ex. 1002 at 297-298.

67. The Examiner then allowed application claims 21-40. Ex. 1002 at 370-376. I note that application claims 21-40 issued as claims 1-20 of the '243 patent.

68. In the reasons for allowance, the Examiner found that the prior art did not disclose certain limitations, in particular, “receive a request to access a user profile stored at a vehicle, the user profile including one or more preferences associated with functions or settings of the vehicle” and “in response to the one or more requested modifications, create an updated user profile at the vehicle, the updated user profile including one or more updated preferences based on the one or more requested modifications.” Ex. 1002 at 370-376.

69. After prosecution, the '243 patent issued with twenty claims, independent claim 1 and dependent claims 2-10, and independent claim 11 and dependent claims 12-20.

C. The Claims of the '243 Patent

70. As I stated above, the '243 patent has twenty claims: independent claim 1 and dependent claims 2-10, and independent claim 11 and dependent claims 12-20. As the below tables illustrate, method claims 11-20 correspond to system claims 1-10, except the method claims are slightly broader as they do not claim “memory”, or “machine-readable instructions” and only certain steps of the method claims are required to be performed by “one or more processors.” I have added coloring for independent claims 1 and 11 to illustrate common claim elements.

Claim 1	Claim 11
1[pre] A system, comprising:	11[pre] A method, comprising:
1[a] memory;	
1-[b] machine-readable instructions; and	
1-[c] one or more processors to execute the machine-readable instructions to:	
1[c-1] receive a request to access a user profile stored at a vehicle, the user profile including one or more preferences associated with functions or settings of the vehicle;	11[a] receiving a request to access a user profile stored at a vehicle, the user profile including one or more preferences associated with functions or settings of the vehicle;
1[c-2] determine, by performing at least one of a verification process or an authentication process in response to the request, whether the request is authorized to access the user profile;	[11-b] determining, by performing at least one of a verification process or an authentication process via one or more processors in response to the request, whether the request is authorized to access the user profile;
1[c-3] in response to determining that the request is authorized to access the user profile, determine one or more requested modifications to at least one of the one or more preferences; and	[11-c] in response to determining that the request is authorized to access the user profile, determining, via the one or more processors , one or more requested modifications to at least one of the one or more preferences; and
1[c-4] in response to the one or more requested modifications, create an updated user profile at the vehicle, the updated user profile including one or more updated preferences based on the one or more requested modifications.	[11-d] in response to the one or more requested modifications, creating, via the one or more processors , an updated user profile at the vehicle, the updated user profile including one or more updated preferences based on the one or more requested modifications.

Dependent Claims 2-10	Dependent Claims 12-20
<p>2. The system of claim 1, wherein the one or more processors are to execute the machine-readable instructions to</p> <p>transmit the updated user profile from the vehicle to at least one of a mobile device, a cloud server, a remote server, or another vehicle, wherein a local user profile including one or more local preferences is stored at the at least one of the mobile device, the cloud server, the remote server, or the other vehicle prior to transmission of the updated user profile to the at least one of the mobile device, the cloud server, the remote server, or the other vehicle.</p>	<p>12. The method of claim 11, further comprising</p> <p>transmitting the updated user profile from the vehicle to at least one of a mobile device, a cloud server, a remote server, or another vehicle, wherein a local user profile including one or more local preferences is stored at the at least one of the mobile device, the cloud server, the remote server, or the other vehicle prior to transmission of the updated user profile to the at least one of the mobile device, the cloud server, the remote server, or the other vehicle.</p>
<p>3. The system of claim 2, wherein the one or more processors are to execute the machine-readable instructions to</p> <p>determine whether any conflicts exist between the updated preferences of the updated user profile and the local preferences of the local user profile.</p>	<p>13. The method of claim 12, further comprising</p> <p>determining whether any conflicts exist between the updated preferences of the updated user profile and the local preferences of the local user profile.</p>

Dependent Claims 2-10	Dependent Claims 12-20
<p>4. The system of claim 3, wherein, in response to determining that one or more conflicts exist between the updated preferences and the local preferences,</p> <p>the one or more processors are to execute the machine-readable instructions to</p> <p>overwrite conflicted ones of the local preferences with corresponding conflicting ones of the updated preferences.</p>	<p>14. The method of claim 13, wherein, in response to determining that one or more conflicts exist between the updated preferences and the local preferences,</p> <p>the method further comprises</p> <p>overwriting conflicted ones of the local preferences with corresponding conflicting ones of the updated preferences.</p>
<p>5. The system of claim 3, wherein, in response to determining that one or more conflicts exist between the updated preferences and the local preferences,</p> <p>the one or more processors are to execute the machine-readable instructions to</p> <p>perform a reconciliation process that allows selective determination of which conflicted ones of the local preferences should be overwritten by corresponding conflicting ones of the updated preferences.</p>	<p>15. The method of claim 13, wherein, in response to determining that one or more conflicts exist between the updated preferences and the local preferences,</p> <p>the method further comprises</p> <p>performing a reconciliation process that allows selective determination of which conflicted ones of the local preferences should be overwritten by corresponding conflicting ones of the updated preferences.</p>

Dependent Claims 2-10	Dependent Claims 12-20
<p>6. The system of claim 1, wherein the one or more processors are to</p> <p>perform both the verification process and the authentication process, and wherein</p> <p>the one or more processors are to</p> <p>determine that the request is authorized to access the user profile in response to successfully verifying the request via the verification process and successfully authenticating the request via the authentication process.</p>	<p>16. The method of claim 11, further comprising</p> <p>performing both the verification process and the authentication process, wherein</p> <p>determining that the request is authorized to access the user profile includes successfully verifying the request via the verification process and successfully authenticating the request via the authentication process.</p>
<p>7. The system of claim 1, wherein the verification process includes at least one of biometric recognition, gesture recognition, facial recognition, or identification of a mobile device.</p>	<p>17. The method of claim 11, wherein the verification process includes at least one of biometric recognition, gesture recognition, facial recognition, or identification of a mobile device.</p>
<p>8. The system of claim 1, wherein the authentication process includes an exchange of security keys between the vehicle and a mobile device.</p>	<p>18. The method of claim 11, wherein the authentication process includes an exchange of security keys between the vehicle and a mobile device.</p>
<p>9. The system of claim 1, wherein the user profile is based on a template for the one or more preferences, and the updated user profile is created relative to the template.</p>	<p>19. The method of claim 11, wherein the user profile is based on a template for the one or more preferences, and the updated user profile is created relative to the template.</p>
<p>10. The system of claim 9, wherein the template is a global standard template that is common among at least two vehicle manufacturers.</p>	<p>20. The method of claim 19, wherein the template is a global standard template that is common among at least two vehicle manufacturers.</p>

71. In other words, as can be seen in the tables above, if system claims 1-10 are unpatentable, corresponding methods claims 11-20 would be unpatentable for the same reasons. I have applied that principle in my declaration, consistent with my explanations in the following sections.

VII. Claim Construction

72. In comparing the claims of the '243 patent to the prior art, I have carefully considered the '243 patent and its file history based upon my experience and knowledge in the relevant field (discussed in Section **Error! Reference source not found.** above and in my CV (Ex. 1004)). As relevant to determining the patentability of the claims of the '243 patent in this proceeding, the proper interpretation of the claim terms of the '243 patent is consistent with the terms' plain and ordinary meaning in view of the evidence of record (including the intrinsic evidence of record, *i.e.*, the patent and file history, as well as any extrinsic evidence), as a POSITA would understand them, as of the time of the invention of the '243 patent.

73. However, in my analysis of the prior art in comparison to the claims, I have at times explained how the prior art would render obvious the relevant claims, regardless of the particular construction adopted (*e.g.*, using what I understand to be Patent Owner's view of certain claims as evidenced by its infringement contentions in district court (Ex. 1025)).

VIII. Summary of Opinions

74. In my opinion, a POSITA would have found the subject matter of claims 1-20 of the '243 patent (Ex. 1001), unpatentable based on the following:

- **Ground 1:** Claims 1-20 are patent ineligible because they are directed to an abstract idea and lack an inventive concept;
- **Ground 2:** Hendry (Ex. 1005) renders claims 1, 6-8, 11, and 16-18 obvious;
- **Ground 3:** Hendry (Ex. 1005) in view of Poulsen (Ex. 1006) renders claims 2-7 and 12-17 obvious;
- **Ground 4:** Hendry (Ex. 1005) in view of Rovik (Ex. 1007) renders claims 9, 10, 19, and 20 obvious;
- **Ground 5:** Singh (Ex. 1008) renders claims 1, 6, 7, 11, 16, and 17 obvious;
- **Ground 6:** Singh (Ex. 1008) in view of Cazanans (Ex. 1009) and Forstall (Ex. 1010) renders claims 2-8 and 12-18 obvious; and
- **Ground 7:** Singh (Ex. 1008) in view of Rovik (Ex. 1007) renders claims 9, 10, 19, and 20 obvious.

IX. Overview of the State of the Art

75. I have provided in this Section IX an overview of certain prior art references that I rely upon to form my opinions. I discuss and explain these and additional prior art references in my Analysis of the Grounds Section (Section X below).

A. General Knowledge of a POSITA Regarding Client-Server Systems and User Profiles in Vehicles and Other Objects

76. As evidenced by the state of the art in the field, and consistent with the disclosure of the '243 patent that I discussed above in Section VI.A, several aspects of client-server systems for providing access to and updating data (including in the context of user profiles and settings in vehicles and other objects) were well-known to a POSITA prior to the '243 patent:

- Various known processors programmed to perform various functions, including sending, receiving, updating, modifying and overwriting data (including vehicle settings for users). Ex. 1005 at [0036]-[0038]; Ex. 1007 at 4:8-19, FIG. 2; Ex. 1008 at [0004], [0022]-[0023], [0033]-[0034], [0039], [0041], [0049]-[0054].
- Various known memory to store data such as in datastores, databases, and the like (including vehicle settings for users stored in various locations such as vehicles, servers, and mobile devices). Ex. 1005 at [0005], [0020]-[0021], [0033], [0036], [0038]; Ex. 1006 at [0085]-[0087]; Ex. 1007 at 4:8-19, 9:3-53; Ex. 1008 at [0004], [0033], [0041], [0058], [0063]-[0064], claim 1; Ex. 1016 at [0005].
- Various authentication and verification techniques and processes—including multi-factor processes incorporating various methods such as passwords, security key exchange (including using Bluetooth v2.1 secure simple pairing), biometrics such as fingerprints or facial recognition, and device identifiers—to authenticate and verify a user and/or device before providing access to data (including a vehicle profile stored in a vehicle). Ex. 1005 at [0017]-[0019]; Ex. 1006 at [0045]; Ex. 1007 at 9:27-64, 10:35-57; Ex. 1008 at [0002]-[0003], [0022]-[0023], [0038]-[0039], [0066]-[0067]; Ex. 1011 at [0024]-[0025], [0035], [0042], [0050]-[0051]; Ex. 1017 at 14:48-15:3, 17:57-18:8; Ex. 1024 at [0122]-[0123].

- Requesting access to a user profile, determining whether to allow access, allowing access and updating of the profile, and saving the updated profile was the conventional ordering of steps to access and update user profile data at a vehicle; and was the same concept as applied generally to any stored information or data. Ex. 1005 at [0005], FIGs. 3A, 3B, 4B; Ex. 1006 at Abstract, [0085]-[0087]; Ex. 1007 at Abstract, 1:11-47; Ex. 1008 at [0003], [0041], [0062].
- Transferring and sharing of user profiles across various vehicles, including using a server or other remote device as an intermediary in the transfer and sharing, such that a user does not need to manually reprogram his or her settings when using a different or new vehicle. Ex. 1007 at 1:11-2:5, 3:18-31, 9:14-53, FIG. 5; Ex. 1009 at 1:15-40, 6:13-34, 7:45-67, 12:13-30, 13:15-31; Ex. 1006 at [0037]-[0038], [0042], [0086]-[0087]; Ex. 1015 at Abstract, 1:24-2:19, 2:52.

77. I provide further explanation and evidence of these and other known concepts in the field below in Sections IX.B and X, below.

B. Exemplary State of the Art

78. I discuss in this section six exemplary state of the art references that all disclose and teach user profile settings in vehicles: Hendry, Poulsen, Rovik, Singh, Cazanias, and Forstall. I discuss additional state of the art in the following Section X below.

1. Hendry (Exhibit 1005)

79. U.S. Patent App. Pub. No. 2012/0303178 to Hendry (Exhibit 1005) is a United States patent application publication that was filed May 26, 2011 and published November 29, 2012. Ex. 1005 at Cover Page. Hendry was both filed and

published before the earliest possible priority date of the '243 patent (April 15, 2013), and thus, I understand it is prior art to the '243 patent.

80. Hendry is titled “Method and system for establishing user settings of vehicle components.” Ex. 1005 at Cover Page.

81. Hendry discloses that its “disclosure relates generally to a method and system for establishing user settings of vehicle components of a vehicle.” Ex. 1005 at [0001]. “In particular, the system retrieves the user settings from at least one data store associated with the vehicle based on a request from an external device to establish a communications link with a communications module of the vehicle.” Ex. 1005 at [0001].

82. In its “Background” section, Hendry explains that vehicle settings can be set and saved for a user in the vehicle, but there are certain “drawbacks”:

Many vehicles today allow a user to change the settings of various vehicle components. For instance, a user can adjust various settings, including settings of the seat, settings of the heating, ventilation, and air conditioning system (“HVAC system”), settings of the audio/visual system, settings of the lighting system, settings of the sounds that the vehicle makes, and various other settings.

Furthermore, **some vehicles may allow a user to save settings personal to the user.** In these vehicles, the user can push a button, e.g. a mechanical switch on the console of the vehicle, and the vehicle settings will be restored to the saved settings personal to the user. **One draw back of the foregoing is that the amount of users that can save settings is limited to the amount of buttons in the console.** Other vehicles are configured

to sense a particular key fob in the vicinity of the vehicle. Upon detecting the key fob, the saved settings personal to the user are restored. **One drawback of using the key fob is that a key fob may be used by multiple users, thereby mitigating the convenience of having personal user settings.**

Ex. 1005 at [0002]-[0003] (emphasis added).

83. Against this Background, Hendry provides a “Summary.” Ex. 1005 at [0004]-[0006]. For example, Hendry explains that one aspect of its disclosure is to reinstate user settings by retrieving settings stored in a datastore in the vehicle for a particular user and various vehicle components:

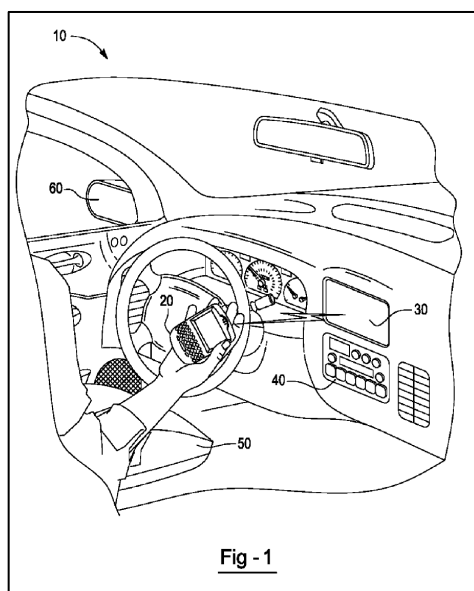
In another aspect of the disclosure, **a system for reinstating settings of at least one vehicle component of a vehicle is disclosed.** The system comprises a communications module that receives a request to establish a communications link between the communications module and an external device associated with a user of the vehicle from the external device, and that establishes the communications link between the communications module and the external link. **The system further comprises at least one component module that retrieves settings of the at least one vehicle component of the vehicle from a data store** associated with the at least one component module based on the request to establish the communications link and that adjusts the settings of the at least one vehicle component based on the retrieved settings. **The data store resides in the vehicle[.]**

Ex. 1005 at [0005] (emphasis added).

84. As discussed in Hendry and further detailed below, a POSITA would have readily understood that the various figures (Figures 1-5) are complementary and that the disclosed processes apply equally to the configuration depicted in

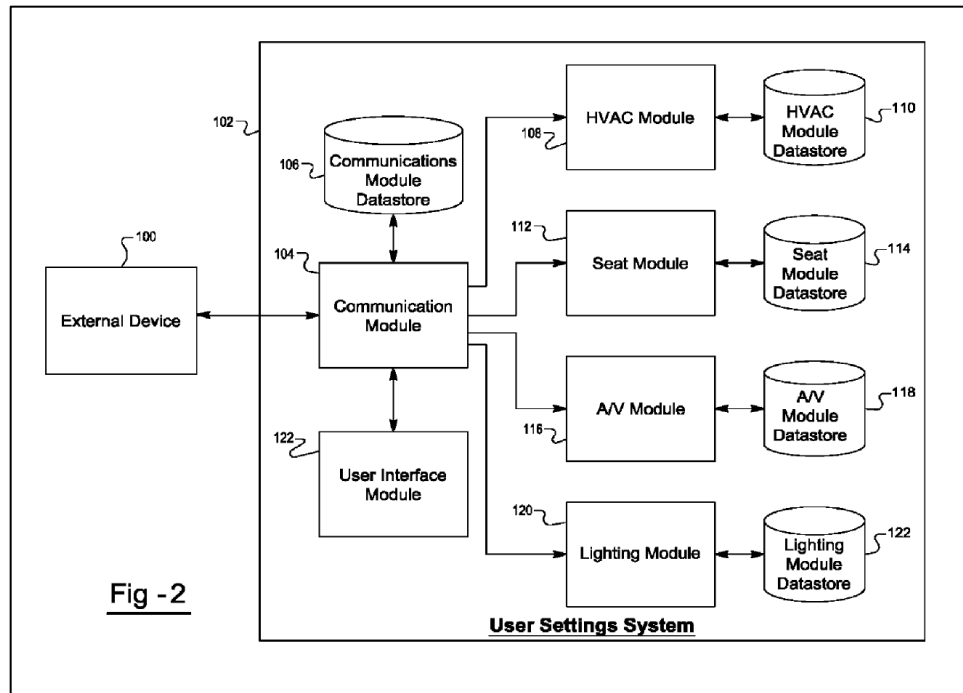
Figure 2 and the alternative configuration shown in Figure 5. The primary distinction between these two configurations lies in the centralized datastore illustrated in Figure 5, in contrast to the multiple distributed datastores shown in Figure 2.

85. In Figure 1, reproduced below, Hendry “illustrates an interior cabin of a vehicle 10 having a user settings system.” Ex. 1005 at [0012]. “The user settings system is configured to reinstate settings of at least one vehicle component of a vehicle 10, wherein the settings are saved by a user of the vehicle 10” such as for audio/visual system 30, HVAC system 40, seats 50 , the lighting system (not shown), and mirrors 60. Ex. 1005 at [0012]. “The user settings system reinstates a user’s personal settings when an external device 20 associated with the user is detected in the vicinity of the vehicle.” Ex. 1005 at [0012].



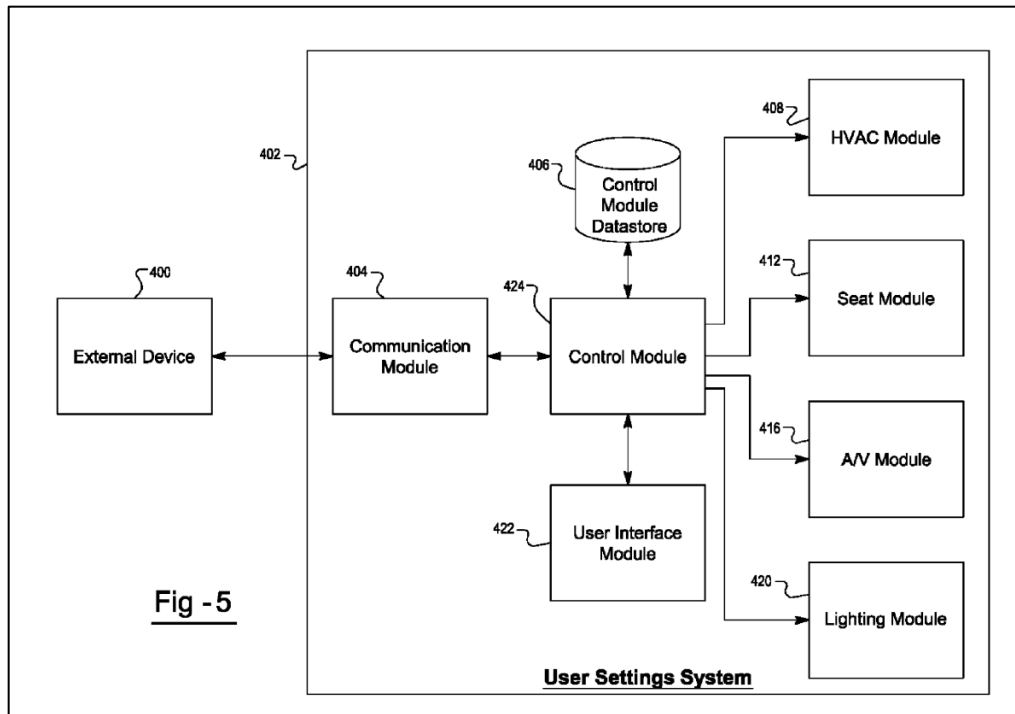
Ex. 1005 at FIG. 1.

86. In Figure 2, reproduced below, Hendry discloses “an exemplary user settings system 102” which includes “communications module 104 which establishes communication with the external device 100.” Ex. 1005 at [0013]. “To establish a communications link with the communications module 104, the external device 100 transmits a request to the communications module 104 that identifies the external device 100 to the communications module 104.” Ex. 1005 at [0013]. “The communications module 104 uses the request from the external device 102 to determine that a user associated with the external device 100 is in the vehicle 10” and “[b]ased on this determination, on this determination, the communications module 104 notifies various vehicle component modules, which adjust user settings of the vehicle components, that the user is in the vehicle 10.” Ex. 1005 at [0013]. “Upon receiving notification of the user or the external device 100, each of the modules 104, 112, 116, and 120, will retrieve user settings corresponding to the user or external device 100 from a respective datastore” in the vehicle. Ex. 1005 at [0014]. According to Hendry, external device 100 may be, for example, a Bluetooth enabled mobile phone, laptop computer, PDA, MP3 player, “or any other Bluetooth enabled device.” Ex. 1005 at [0015].



Ex. 1005 at FIG. 2.

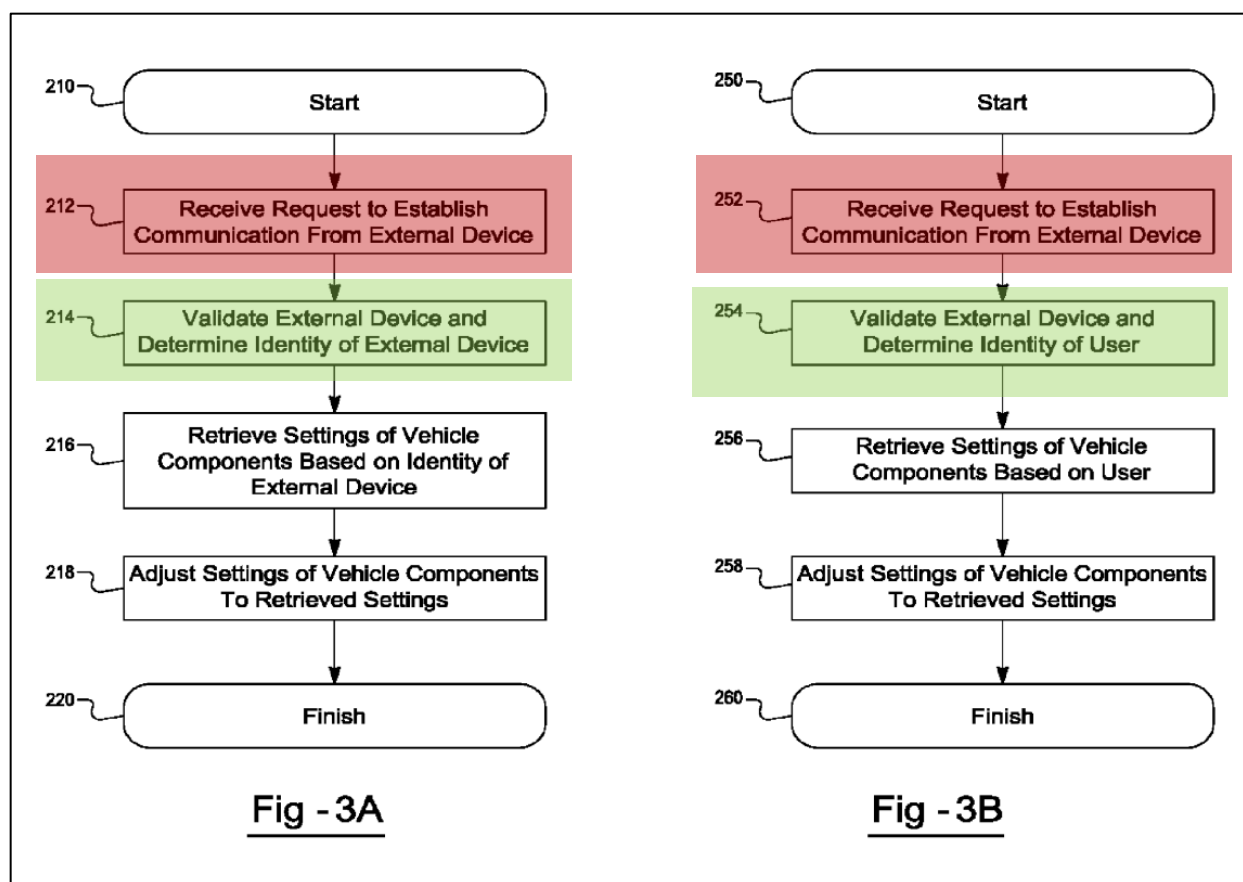
87. In Figure 5, reproduced below, Hendry “illustrates an alternative configuration of a user settings system 402.” Ex. 1005 at [0033]. It is similar to the Figure 2 configuration, except in Figure 5, there is a central data store for storing the user settings: “the communications module 404 communicates with a control module 424, which is coupled to a central data store 406. The central data store stores data for validating and/or authenticating a device, the value parameters associated with the various devices or users having preferred settings stored, and any other data used by the user settings system 402.” Ex. 1005 at [0033].



Ex. 1005 at FIG. 5.

88. Figure 3A, reproduced below, “illustrates an exemplary method for restoring a user’s personal settings, which is executed by the user settings system 102” of Figure 2. Ex. 1005 at [0027]. Figure 3B, also reproduced below, “illustrates a variation of the method shown in FIG. 2A [sic: FIG. 3A]” and “[a]ccording to the method illustrated in FIG. 2B [sic: FIG. 3B], a user identifier is used to retrieve the settings rather than a device identifier.” Ex. 1005 at [0028].²

² I note that there are apparent typos in paragraph [0028] of Hendry. In context, a POSITA would have understood that Hendry was referring to Figures 3A and 3B, which it is discussing in this section. I also note that there is only a “Figure 2” and no Figure 2A or 2B in Hendry, which further confirms the typos.



Ex. 1005 at FIGS. 3A, 3B.

89. Hendry explains its Figure 3A process, whereby the external device

100 “**will transmit a request to establish a communications link between the communications module 104 of the vehicle 10 and the external device 100 associated with a user of the vehicle 10 from the external device 100, as shown at step 212.**” Ex. 1005 at [0027]. “**The request will include a key and a device identifier. Once the communications module 104 receives the request to establish a communications link, the communications module 104 will verify/authenticate the external device 100 by checking the**

communications module datastore 106, as shown at step 214.” Ex. 1005 at [0027]. “The communications module 104 will verify that a device having the received device identifier and key is represented in the communications module datastore 106.” Ex. 1005 at [0027]. “If so, the communications module 104 will establish a communications link with the external device 100” and “will communicate the device identifier or an indicator thereof to the various vehicle components.” Ex. 1005 at [0027]. “Based on the device identifier, the vehicle components will retrieve the personal settings associated with the device identifier from an associated datastore, as shown at step 216” and adjust the vehicle settings at step 218. Ex. 1005 at [0027].

90. Figure 3B is similar to Figure 3A, except that “a user identifier is used to retrieve the settings rather than a device identifier” where “a user can be associated one or more devices.” Ex. 1005 at [0028] and FIG. 3B (discussing and depicting steps 252, 254, 256, and 258).

91. Hendry also notes that Figure 3A applies to both the Figure 2 and Figure 5 configurations: “FIG. 3A illustrates an exemplary method for restoring a user’s personal settings, which is executed by the user settings system 102” of Figure 2, and “[a]lternatively and as will be discussed with respect to FIG. 5, the device identifier can be communicated to a control module 424, which retrieves the settings for the various components from a control module datastore 426 and will

communicate the personal settings associated with the device identifier to the corresponding vehicle components.” Ex. 1005 at [0027].

92. Similarly, Hendry explains that Figure 3B applies to both the Figure 2 and Figure 5 configurations: “The user identity can be communicated to the various vehicle components (FIG. 2) or a control module (FIG. 5). Based on the user identity, the preferred user settings are retrieved from the data stores of the vehicle components (FIG. 2) or from a control module datastore (FIG. 5), as shown at step 256. The various vehicle components will then adjust the respective settings in accordance with the stored personal settings associated with the user, as shown at step 258. It is appreciated that in some embodiments, the user interface 122 may prompt the user to verify that the user desires to have the settings restored by the various vehicle components.” Ex. 1005 at [0028].

93. In Figure 4B, Hendry “illustrates an exemplary method that is executed by the user settings system after a device has been learned by the user settings system.” Ex. 1005 at [0031]. Hendry explains that, referencing back to the discussion regarding Figures 3A and 3B of requesting access to, accessing, and reinstating user settings for a particular user of a vehicle, that the user may then update or change his or her personal settings:

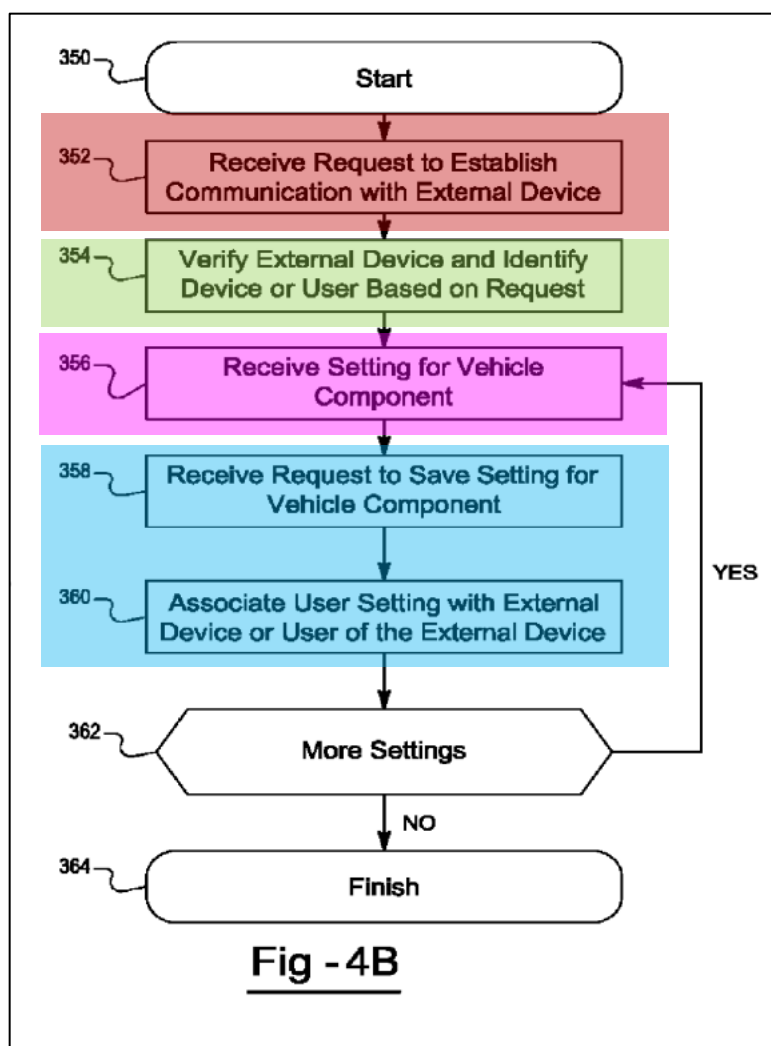
As can be appreciated, a user may opt to change or add his or her personal settings after some time. As discussed above, the external device 100 will request to establish a

communications link, and the communications module 104 will receive the request and verify and/or authenticate the external device 100, as shown at steps 352 and 354. The user at any given time may opt to change the settings of one or more of the vehicle components, as shown at step 356. If the user does so, the user may be prompted by the user interface 122 to indicate if the adjusted settings of the one or more vehicle components are to be saved. If the user responds affirmatively, the adjusted settings are saved in a datastore associated with the vehicle component, as shown at step 358. Further, the new settings are associated with the device identifier or the user identifier in the datastore for later retrieval, as shown at step 358 [sic: 360].³ If the user has changed more than one setting, the method continues to reiterate, as shown at step 362, until no more settings are to be saved. Once there are no more settings to be saved, the method will stop executing, as shown at step 364.

Ex. 1005 at [0031] (emphasis added).

94. Figure 4B is reproduced below (with coloring corresponding to the description in paragraph [0031] of Hendry, immediately above):

³ I note that there is an apparent typo in paragraph [0031] of Hendry. In context, a POSITA would have understood that Hendry was referring to step 360, which occurs after step 358 and before step 362, as described in paragraph [0031] and consistent with the depiction and language in Figure 4B when discussing step 360.



Ex. 1005 at FIG. 4B.

95. As can be seen in the above disclosure, Hendry teaches that Figure 4B applies to, and results from, the same initiation process of Figures 3A and 3B (with step 352 corresponding to steps 212/252 and step 354 corresponding to steps 214/254). This is further confirmed by the matching descriptions of the steps as reflected in the Figures, and Hendry's explanation in paragraph [0031] discussing

Figure 4B that refers back to the earlier discussion in its disclosure, including that which would encompass Figures 3B:

FIG. 4B illustrates an exemplary method that is executed by the user settings system after a device has been learned by the user settings system. As can be appreciated, a user may opt to change or add his or her personal settings after some time. **As discussed above**, the external device 100 will request to establish a communications link, and the communications module 104 will receive the request and verify and/or authenticate the external device 100, as shown at steps 352 and 354. The user at any given time may opt to change the settings of one or more of the vehicle components, as shown at step 356.

Ex. 1005 at [0031] (emphasis added).

2. Poulsen (Exhibit 1006)

96. U.S. Patent App. Pub. No. 2007/0276795 to Poulsen (Exhibit 1006) is a United States patent application publication that was filed May 24, 2007 and published November 29, 2007. Ex. 1006 at Cover Page. Poulsen was both filed and published before the earliest possible priority date of the '243 patent (April 15, 2013), and thus, I understand it is prior art to the '243 patent.

97. Poulsen is titled "Meta-configuration of profiles." Ex. 1006 at Cover Page.

98. Poulsen discloses, in its Abstract:

Disclosed are methods for creating, applying, using and retrieving profile information that includes attributes that may be stored separately from, or with, the content to which the profiles are being applied. In this manner, profiles can be

shared in various environments and across various applications. Attributes that have corresponding attributes in other content can be applied to the other content, as long as each of the attributes is valid. In computer aided design applications, the profile can be stored in a profile repository embedded within the CAD model. In addition, profile controllers are disclosed which control the attributes of a profile that can be used with selected content and other content and send a notification that a profile is available for use by other content.

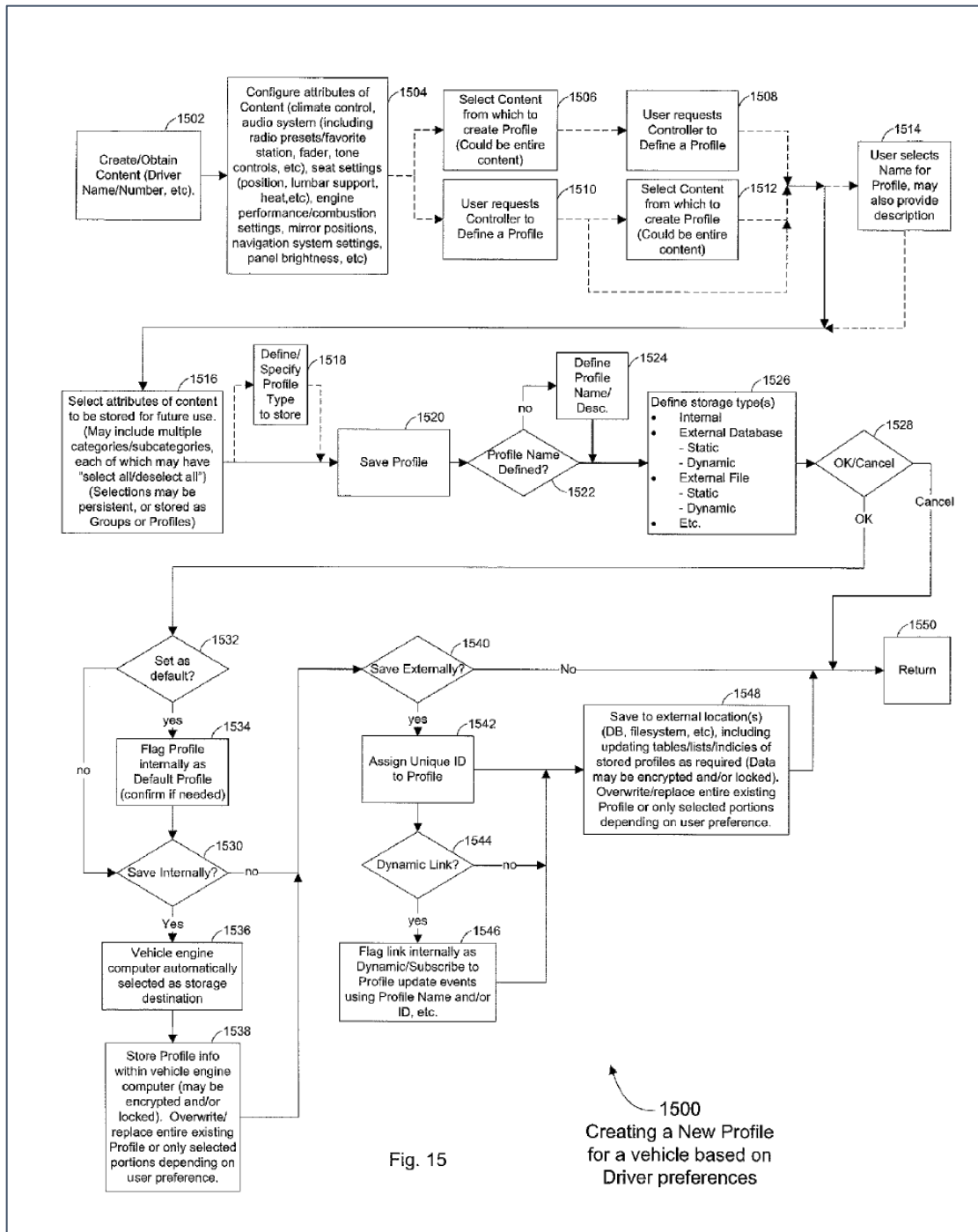
Ex. 1006 at Abstract (emphasis added).

99. Poulsen provides several examples of the “various environments” and “various applications” that its disclosure is applicable to, including user profiles in vehicles, documents settings and preferences, and computer aided design and explains the benefits of using profiles for performing various tasks:

The use of profiles is a convenient way to save time in performing various types of tasks. Default profiles provide desired preferences in advance for many different types of activities. For example, **Microsoft Word may store a default profile such that when a new document is opened, the document uses 12 point type of a particular font such as Times Roman. As another example, profile buttons may be provided in an automobile that set the height, position and attitude of a car seat for several different drivers.** Further, the default display in a computer aided design drawing application illustrates the devices being displayed in accordance with a default view. Each of these examples, as well as many other examples, constitutes profiles that can conform to a user's preferences or a default profile.

Ex. 1006 at [0002] (emphasis added).

100. Figure 15, reproduced below, “illustrates an embodiment of a process 1500 for creating a new profile for a vehicle based on driver preferences.” Ex. 1006 at [0085]. “This type of profile can apply to any vehicle, including automobiles, trucks, buses, motorcycles, airplanes, etc.” and “can store the entire environment, including (if applicable) climate control, seat positions and settings, audio system settings and presets, engine performance settings, navigation system settings, mirror settings, etc. This will allow the user to re-create the desired environment very quickly and easily.” Ex. 1006 at [0085]. As shown in Figure 15, and described in Poulsen, Poulsen discloses creating, storing, transmitting, and reconciling a user profile for vehicle settings (including at an “external location” such as a database, file system, etc.). Ex. 1006 at [0085]-[0087].



Ex. 1006 at FIG. 15.

3. Rovik (Exhibit 1007)

101. U.S. Patent No. 8,918,231 to Rovik (Exhibit 1007) is a United States patent that was filed May 2, 2012 and issued December 23, 2014. Ex. 1007 at Cover Page. Rovik was filed before the earliest possible priority date of the '243 patent (April 15, 2013), and issued into a United States patent, and thus, I understand it is prior art to the '243 patent.

102. Rovik is titled “Dynamic geometry support for vehicle components.” Ex. 1007 at Cover Page.

103. Rovik discloses, in its Abstract:

Apparatuses and methods for adjusting a position of at least one component of a vehicle for a user of the vehicle. A user is identified with a user key associated with the user. The user key and a vehicle identifier associated with the vehicle are transmitted to a server remote from the vehicle. At least one user setting for the vehicle is received from the remote server, with the at least one user setting relating to the user key, the vehicle identifier, and the position of the at least one component. A vehicle system setting is updated with the at least one user setting so as to adjust the position of the at least one component based on the at least one user setting when the vehicle system setting does not correspond with the at least one user setting

Ex. 1007 at Abstract.

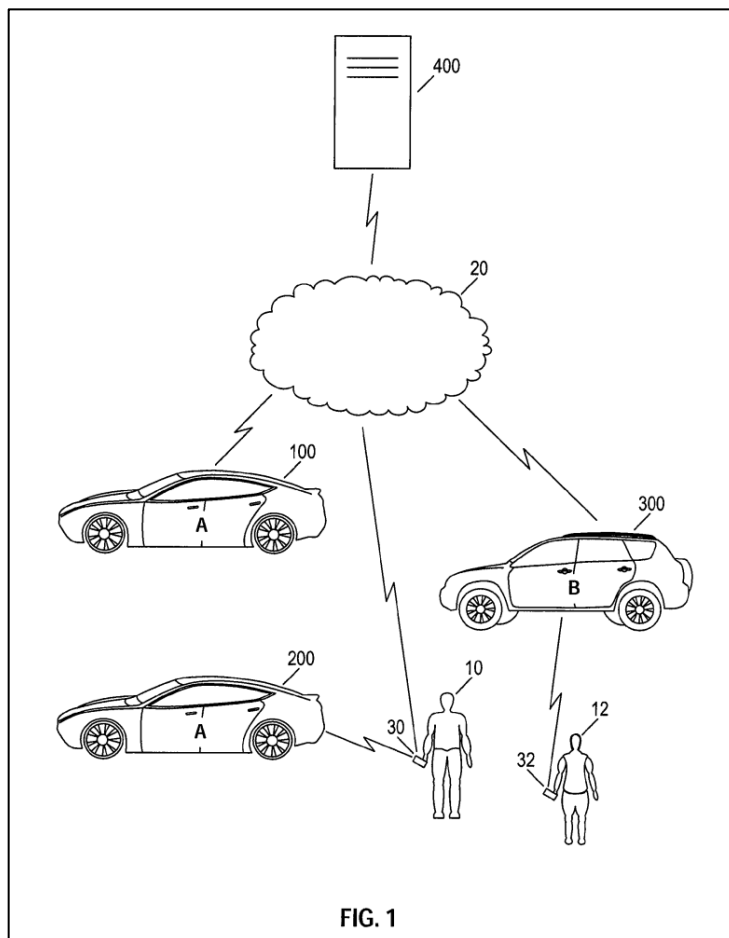
104. Rovik explains in its “Background” that vehicles include adjustable settings: “Vehicles often include components which can be adjusted by a user of the vehicle. Such adjustable components can include adjustable seats and mirrors.

In addition, some vehicles can store position settings for such adjustable components as a group of position settings for a particular user of the vehicle. In such vehicles, the user can automatically adjust the adjustable components in accordance with their position settings by selecting the group of position settings.” Ex. 1007 at 1:9-18.

105. However, according to Rovik, “[o]ne limitation of the foregoing automatic adjustment is that the settings are only available in one vehicle.” Ex. 1007 at 1:22-23. For example, “[i]f a user drives a different vehicle, they must adjust the settings for many of the adjustable components.” Ex. 1007 at 1:23-25. “In addition, if the different vehicle is unfamiliar to the driver, such as a rental car that is a different make or model from the user’s usual vehicle, the user will likely spend more time searching for their preferred settings.” Ex. 1007 at 1:25-29. Accordingly, Rovik discloses that, “[i]n view of these problems, one aspect of the present disclosure involves storing user settings at a server remote from a vehicle so that the user settings can be transmitted to different vehicles for the user.” Ex. 1007 at 1:29-32.

106. Figure 1, reproduced below, “is a representative view including vehicles and users for an example embodiment of the present disclosure” where vehicles 100 and 200 have the same model and type (A), and vehicle 300 has as different model or type (B), and users 10 and 12 interact with the vehicles using

mobile devices 30 and 32 and with server 400 via network 20. Ex. 1007 at 2:46-47, 3:18-4:7.



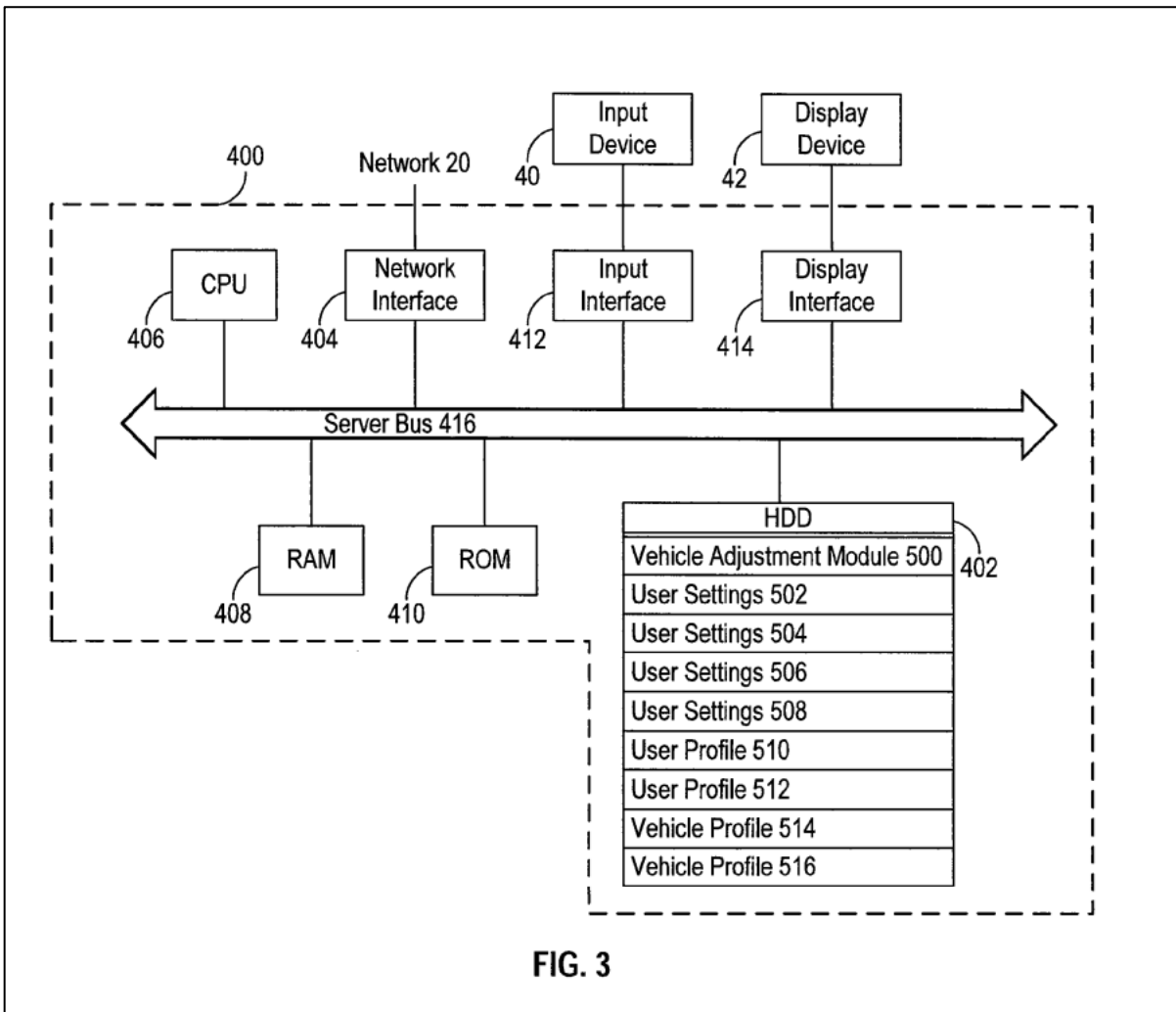
Ex. 1007 at FIG. 1.

107. Figure 2, reproduced below, “depicts a schematic for the vehicle 100 according to one embodiment” with “a telematics unit 101, which includes a processor 102, a memory 103, and a modem 104” and “processor 102 can be implemented using one or more processors for executing instructions and can include a microcontroller, a Digital Signal Processor (DSP), an

Ex. 1007 at FIG. 2.



108. Figure 3, reproduced below, “is a block diagram depicting the internal architecture of a server according to an embodiment of the present disclosure.” Ex. 1007 at 2:50-53.



Ex. 1007 at FIG. 3.

109. Figure 5, reproduced below, “illustrates example user profiles 510 and 512 stored in the HDD 402 of FIG. 3.” Ex. 1007 at 9:3-4. “As shown in FIG. 5, each of the user profiles includes a user key associated with a

user.” Ex. 1007 at 9:4-5. Rovik further discloses that “[a]s noted above with respect to FIG. 4, a user key can alternatively be associated with a user by identifying the user as a member of a class of users sharing a common attribute or attributes.” Ex. 1007 at 9:10-12. “The user profiles 510 and 512 include several physical attributes of the users 10 and 12, respectively, which can be used to generate new user settings for vehicles or vehicle types that the users have not driven before.” Ex. 1007 at 9:14-16. Rovik further discloses that common “user preferences [that] represent settings made by the user that have been standardized by the server 400 so as to apply to a standard vehicle,” such that “the user preferences can also be used to generate new user settings for vehicles or vehicle types not driven before by the user.” Ex. 1007 at 9:27-43. “The user profiles 510 and 512 also include various user settings that can also form part of a user setting, such as some of the user settings of FIG. 4” for example, “Preferred Music Genre”, “Scheduled Location”, “Background Image”, “Language”, “Units”, “Location 1”, “Location 2”, “Mobile Device 1”, “Mobile Device 2”, and “Temperature Setpoint” that “can be directly transferred to a user setting when generating a new user setting for a vehicle.” Ex. 1007 at 9:44-53.

User Profile 510	
User Key	CB1906X
User Eye Point	1.1
User Hip Point	2.4
Recline Value	3.6
Lumbar Value	5.0
Mirror 1 Value	0.82
Mirror 2 Value	0.71
Arm Length	2.1
Preferred Music Genre	Classic Rock
Default Volume Level	4.2
Scheduled Location	L1:0800 M-F
Background Image	—
Language	English
Units	English
Location 1	Home: 1060 W. Addison
Location 2	Work: 600 Anton
Mobile Device 1	John's Phone
Temperature Setpoint	73° F

User Profile 512	
User Key	WS2005Y
User Eye Point	-0.8
User Hip Point	-0.9
Recline Value	4.1
Lumbar Value	0.0
Mirror 1 Value	0.74
Mirror 2 Value	0.76
Arm Length	1.2
Preferred Music Genre	Hip Hop
Default Volume Level	4.9
Scheduled Location	—
Background Image	sox.jpg
Language	English
Units	English
Location 1	Home: 333 W. 35 th St.
Mobile Device 1	Bob's Phone
Mobile Device 2	Bob's Laptop
Temperature Setpoint	71° F

FIG. 5

Ex. 1007 at FIG. 5.

4. Singh (Exhibit 1008)

110. U.S. Patent App. Pub. No. 2007/0255464 to Singh (Exhibit 1008) is a United States patent application publication that was filed April 26, 2006 and published November 1, 2007. Ex. 1008 at Cover Page. Singh was both filed and published before the earliest possible priority date of the '243 patent (April 15, 2013), and thus, I understand it is prior art to the '243 patent.

111. Singh is titled "Car intelligence." Ex. 1008 at Cover Page.

112. Singh discloses, in its Abstract, an intelligent vehicle that allows multiple drivers to customize settings and services:

The purpose of the current is to develop an intelligent vehicle that allows multiple drivers to drive the vehicle and provides customized settings and services for each of them. This is done by making the user profiles for multiple drivers in the vehicle and each driver will be recognized with their finger impression scan. Each driver will scan their finger impression to gain access to the vehicle. When the vehicle will identify the driver from the finger impression, it will load the settings like seat arrangement, mirror position, temperature of the vehicle and the steering wheel of the vehicle according to the settings required by the particular driver. It will also load the personal address list for the driver for use by GPS, personal telephone list for the driver, personal music list for the driver and personalized electronic mail application for the driver. Each driver of the same vehicle will be able to maintain their personal settings of the vehicle and will maintain personal lists of various functions. In this manner each driver will be able to use the vehicle as a distinguished user by loading their personal settings right before entering the vehicle.

Ex. 1008 at Abstract.

113. Singh discloses certain concerns, such as security and user convenience for operating vehicles. Ex. 1008 at [0001]-[0002]. Singh then discloses in its Summary:

The current invention is the vehicle with the operating system that allows multiple drivers to use the vehicle by authenticating them with their finger impressions which are saved by means of databases installed in the operating system. The vehicle consists of an operating system which saves information of up to five drivers. The vehicle authenticates the drivers by means of finger impression which is a unique parameter for each driver. **Upon authentication the driver can**

utilize the vehicle in an individualized manner. The complete process for the working and features of vehicle is described below.

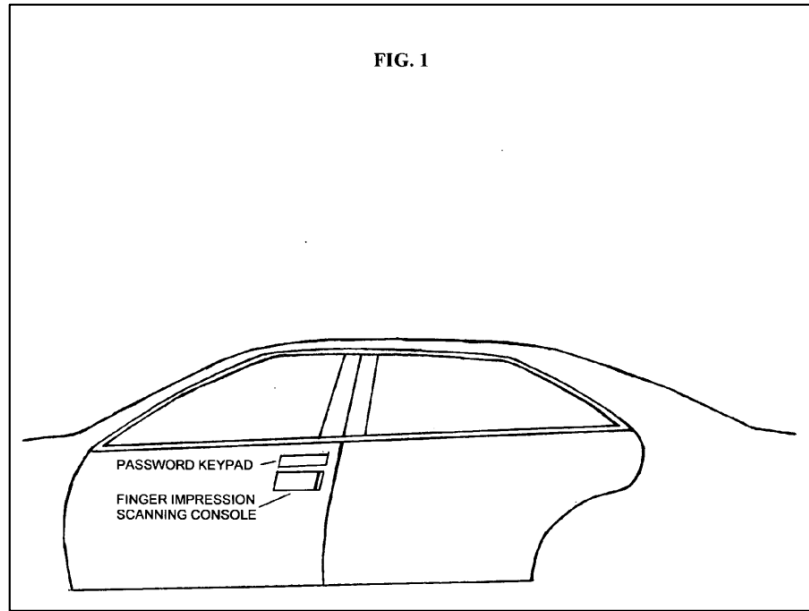
Ex. 1008 at [0003] (emphasis added).

114. In addition to fingerprint recognition, Singh discloses the use of passwords as part of a multi-factor authentication/verification system that enhances vehicle security, particularly due to fingerprints being inherently unique to each user:

Moreover the security of the vehicle against theft will be improved remarkably. The finger impressions will be saved in the vehicle database and **only** people with registered finger impressions will be able to access and drive it. The finger impression scanning console will open only if the password provided by the driver is matched in the vehicle database. Even if somebody gets access to the driver's password, **the finger impression has still to be provided to get access to the vehicle and the finger impression is unique for each person.** Thus the current invention will drastically reduce the occurrence of vehicle theft. As such the security measures will considerably improve and different users will also be able to restore their settings and preferences when they use the vehicle.

Ex. 1008 at [0002] (emphasis added).

115. “FIG. 1 overall diagram of the vehicle with a password console and finger impression scanning console locked with a shutter.” Ex. 1008 at [0005].

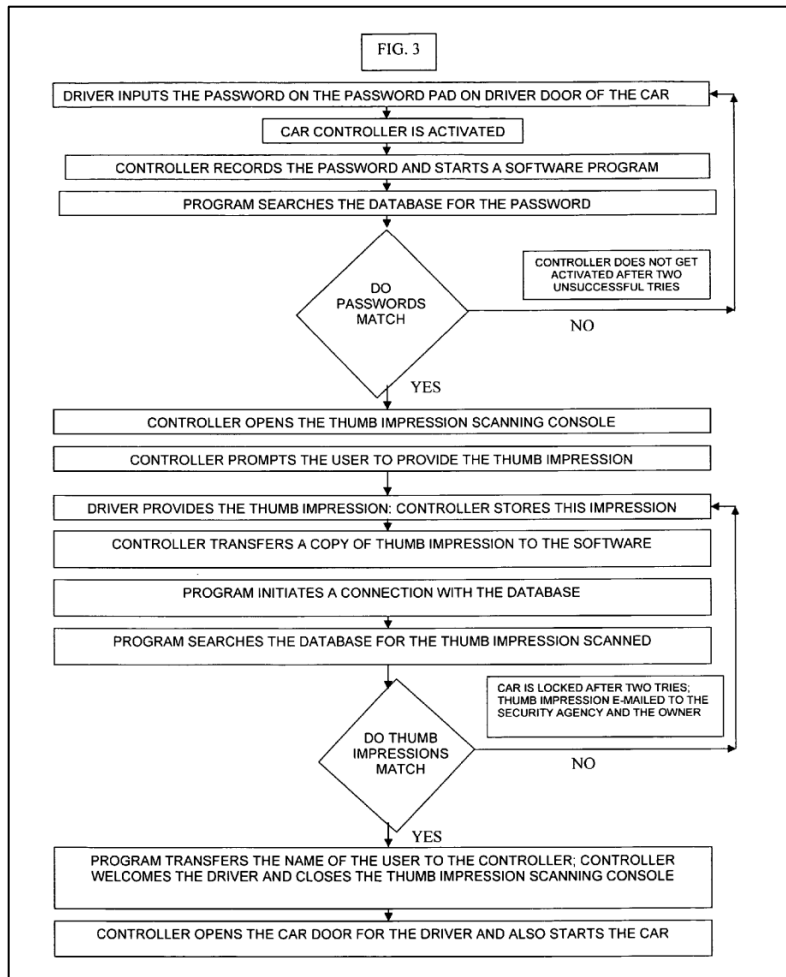


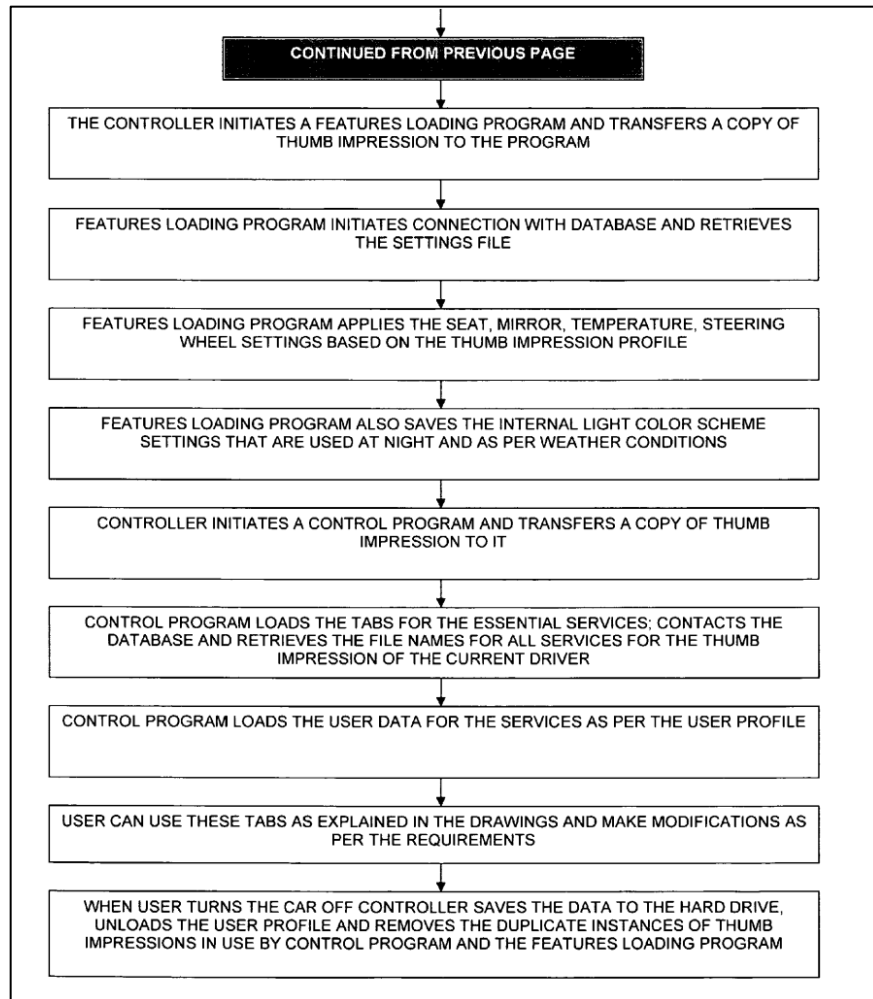
Ex. 1008 at FIG. 1.

116. Singh explains that its system includes a password window, a fingerprint scanner, an operator database, user profiles, a controller unit and a graphical user interface. Ex. 1008 at [0014]-[0035]. According to Singh, “[t]he Controller Unit will act like a central unit which will control the entire process from validating the finger impression of the driver to setting the attributes or preferences of the driver who will be driving the vehicle” and “will control the validation of the driver by verifying his password, finger impression recording and matching process, accessing the operator database to locate the user files based on the User Profile and then applying the settings according to the preferences of the driver.” Ex. 1008 at [0034]. “When the driver will reach his or her destination and will turn the vehicle off, the Controller Unit will also save the changes made by the driver

and then unload the user profile of the current driver and will bring the vehicle attributes to default setting.” Ex. 1008 at [0034].

117. In Figure 3, reproduced below, Singh “shows the flow chart of the process involved in the invention,” including requesting access via password and fingerprint processes and determining whether the user is allowed access, loading the user settings, and updating and saving the user settings. Ex. 1008 at [0007], [0036]-[0055], [0062].





Ex. 1008 at FIG. 3.

5. Cazanias (Exhibit 1009)

118. U.S. Patent No. 8,977,408 to Cazanias (Exhibit 1009) is a United States patent that was filed September 23, 2011 and issued March 10, 2015. Ex. 1009 at Cover Page. Cazanias was filed before the earliest possible priority date of the '243 patent (April 15, 2013), and issued into a United States patent, and thus, I understand it is prior art to the '243 patent.

119. Cazanias is titled “Vehicle settings profile system.” Ex. 1009 at Cover Page.

120. In its Background, Cazanias explains certain drawbacks, such as when a user uses a new vehicle with new settings:

In recent years, many vehicles have utilized a driver’s profile in order for a user to quickly recall settings for a number of user configurable features, such as, seat position, positions of mirrors, one or more pedal positions, radio stations presets, HVAC settings, navigation screen configuration, and the like. A user profile is stored in a memory on the vehicle, such as in an electronic control unit (“ECU”) of the vehicle, or other controller or computer on the vehicle. Many such vehicles today can store profiles for a number of different users. Each user can adjust any or all of the user configurable features of the particular vehicle to the user's desired settings, and save these setting to the memory of the vehicle as the user's own user profile. Therefore, if multiple users regularly operate the vehicle, such as a husband and wife, each user may store a user profile on the vehicle, and quickly restore all of their settings when they get in the vehicle by recalling their own user profile. However, if a user gets into a different vehicle, such as a rental car, they have to again adjust every user configurable feature to a desired position. This can be a time consuming exercise, and may be further complicated in a vehicle the user is not accustomed to driving, such as a rental car.

Ex. 1009 at 1:15-36.

121. Thus, Cazanias discloses that “a need exists for a system to allow a user profile to be recalled in multiple vehicles, even a vehicle the user does not typically operate, or a different type of vehicle from what the user typically operates.” Ex. 1009 at 1:37-40. Cazanias similarly discloses that “[t]o improve over the art and

address one or more of the problems outlined above, the examples herein provide technologies to allow transfer of a driver's profile with one or more settings for user configurable features of a vehicle to and/or from a server via network communications” and “[f]or example, settings input and stored for one vehicle may be uploaded to the server and later transferred to a different vehicle. If the vehicles are of different types, the technology may also transcode the preference setting(s) to provide the user preferred configuration from one type of vehicle on a different type of vehicle.” Ex. 1009 at 1:44-54.

122. As part of its disclosure, Cazanias discloses, in its Abstract, a system to transfer user profiles across vehicles:

A system for transferring driver profile settings has a communication interface, processor, storage device, and program in the storage device. The communication interface allows for network communications. The processor couples to the interface. Execution of the program from storage by the processor configures the system to perform functions. **The system allows for transfer of a driver profile from the storage device to a vehicle for application on the vehicle. The driver profile specifies one or more preference settings for one or more configurable components of a vehicle.**

Ex. 1009 at Abstract (emphasis added).

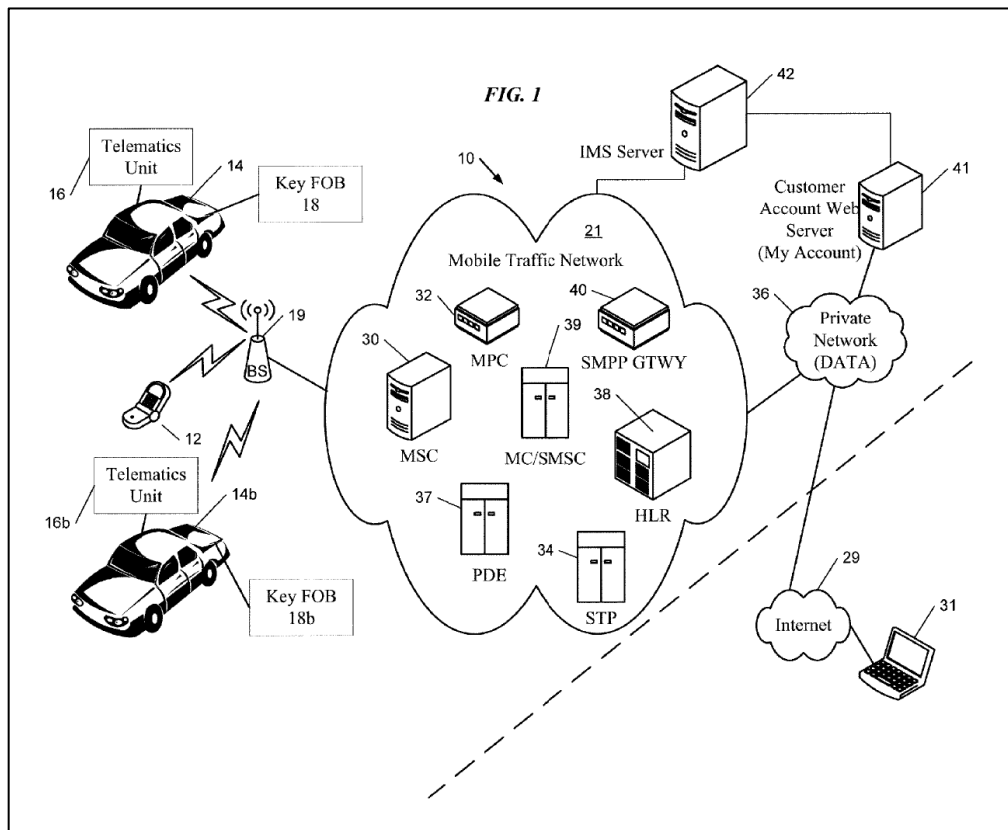
123. As was common in the art and similar to the '243 patent, Cazanias discloses that a user profile is as follows:

As used herein, a “user profile” includes stored settings for one or more user configurable vehicle features, such as, but not

limited to, seat position, mirror position, one or more pedal positions, radio station presets, vehicle audio settings, navigation system settings, and vehicle HVAC settings. A profile created for or on one vehicle, for example, is uploaded via a network and stored in a server in association with a user's account (based on a user identification or "ID").

Ex. 1009 at 3:49-56.

124. Figure 1, reproduced below, "is a functional block diagram that depicts various components of an exemplary mobile communications network" where profile data is transmitted between vehicles and servers to allow for the transfer of profiles among vehicles that a user may operate. Ex. 1009 at 3:3-5, 12:13-30.



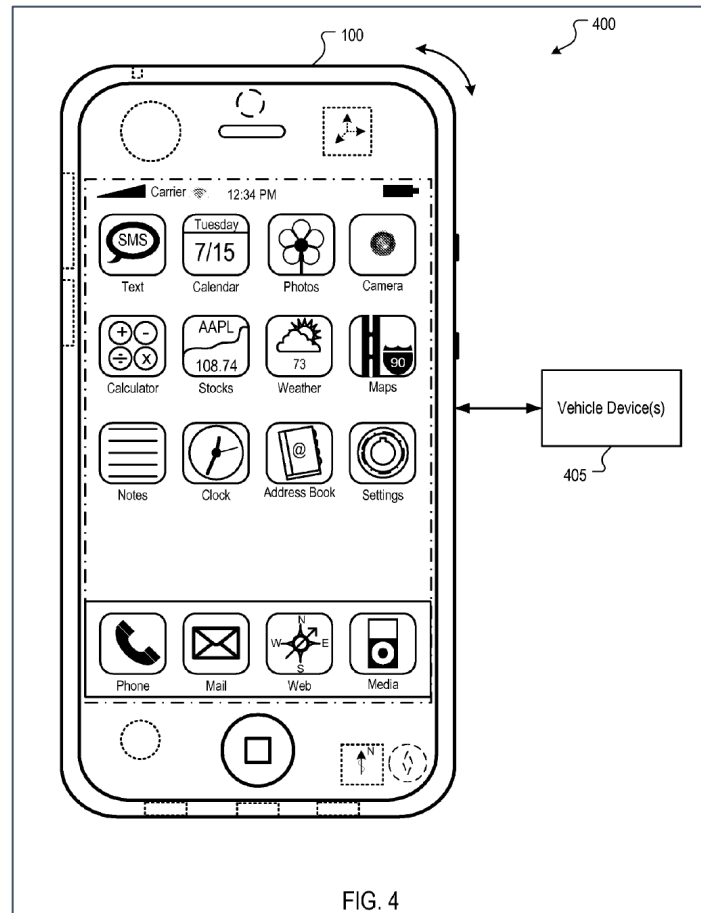
Ex. 1009 at FIG. 1.

6. Forstall (Exhibit 1010)

125. U.S. Patent App. Pub. No. 2009/0005070 to Forstall (Exhibit 1010) is a United States patent application publication that was filed February 22, 2008 and published January 1, 2009. Ex. 1010 at Cover Page. Forstall was both filed and published before the earliest possible priority date of the '243 patent (April 15, 2013), and thus, I understand it is prior art to the '243 patent.

126. Forstall is titled "Synchronizing mobile and vehicle devices." Ex. 1010 at Cover Page.

127. Figure 4, reproduced below, "is a block diagram of an example system 400 including an example implementation of the mobile device 100 of FIG. 1." Ex. 1010 at [0071]. "The example system 400 includes one or more vehicle devices 405 in communication with the mobile device 100." Ex. 1010 at [0072]. Forstall discloses that "mobile device 100 is operable to update the vehicle device(s) with any information identified and/or stored by the device 100." Ex. 1010 at [0079]. Among the information is configuration settings and navigation information. Ex. 1010 at [0079].



Ex. 1010 at FIG. 4.

128. Forstall discloses updating and synchronizing settings when new information is found on a mobile or vehicle device and resolving conflicts between device settings:

The “auto-update device or vehicle with new information” button 614 is shown as enabled. In an implementation, when this button is active new information stored in the mobile device 100 and/or vehicle device(s) 405 will automatically be provided to the other device. **According to an implementation, new information is information stored in the mobile device 100 and/or vehicle device(s) 405 since the last synchronization of the mobile device 100 and vehicle device(s) 405.** New information can include location

information or any other information stored in the devices, such as contact information. **A “resolve conflict in favor of” selection 616 is shown.** When the “auto-update device or vehicle with new information” button 614 is enabled at least one of the “device” button 618 and “vehicle” button 620 are toggled to an active state. FIG. 6 shows the “device” button 618 as active. In an implementation, when conflicts occur between information stored in the mobile device 100 and vehicle device(s) 405, **the “resolve conflict in favor of” selection 616 determines which device’s information is copied onto the other device.**

According to an implementation, when conflicts between data on the vehicle device(s) 405 and mobile device 100 occur, the user may be alerted. **The user may be able to resolve the conflict in favor of either the vehicle device(s) 405 or mobile device 100 on an item by item basis, or based on a category of information (e.g., telephone numbers, calendar entries, etc.).** This may be a hot sync feature of the device.

A “view advanced synchronization settings” button 622 is shown. **According to an implementation, selection of this button 622 permits a user to configure advanced synchronization settings, including reconciliation settings when conflicts occur. For instance, a user may select, on an item by item basis, whether the mobile device 100 or vehicle device(s) 405 should govern in the event of a conflict.** Items may be individually toggled, such as contacts, calendar entries, telephone numbers, destinations, points of interest, and the like. According to an implementation, selection of this button 622 permits a user to configure whether synchronization occurs on an item by item basis. Other advanced settings, such as a schedule or time for synchronization to occur (if not in real-time or in near real-time) may be established by a user.

Ex. 1010 at [0090]-[0092] (emphasis added).

X. Analysis of the Grounds

A. Ground 1: Claims 1-20 are patent ineligible because they are directed to an abstract idea and lack an inventive concept.

129. The claims of the '243 patent claim accessing and updating information (in the form of a basic “user profile” for a “vehicle,” using admittedly conventional computing components (processor and memory)). The claims are written in functional form, describing the result without explaining how to achieve the result.

130. This is consistent with the disclosure in the '243 patent, which I described in Section VI.A above, including that the '243 patent discloses use of conventional, off-the-shelf processors programmed to perform functions in known ways, along with conventional off-the-shelf memory to store information, and known verification and authentication techniques.

131. As I explained in Section VI.A above, the '243 patent makes several statements that confirm it is simply invoking computers as a tool, not a technological improvement to any computer functionality. For example, as I explained in Section VI.A above, the claimed components and functions were well-known and conventionally used according to the '243 patent:

- The '243 patent relies upon admittedly known, off-the-shelf, and conventional computing components (*e.g.*, **processor** and **memory**) performing their conventional functions (*e.g.*, processing and storing

data), Ex. 1001 at 16:66-17:11, 21:64-22:10, 22:18-48, 92:66-93:21, 93:35-47, 93:48-67; *see also* my paragraphs 45, 48, 54-58 above.

- The '243 patent explains that a “**profile**” can be any data structure or the like that includes information. Ex. 1001 at 14:51-55, 18:22-36, 23:26-33, 46:51-52, 71:26-44; *see also* my paragraphs 46, 52-53 above.
- The '243 patent discloses that “**determine**” can be basically any function: “The terms ‘determine,’ ‘calculate,’ and ‘compute,’ and variations thereof, as used herein, are used interchangeably and include any type of methodology, process, mathematical operation, or technique.” Ex. 1001 at 14:22-25; *see also* my paragraph 50 above.
- The '243 patent broadly describes a “**vehicle**”: “The terms ‘vehicle,’ ‘car,’ ‘automobile,’ and variations thereof may be used interchangeably herein and can refer to a device or structure for transporting animate and/or inanimate or tangible objects (e.g., persons and/or things), such as a self-propelled conveyance.... The term ‘vehicle’ does not require that a conveyance moves or is capable of movement. Typical vehicles may include but are in no way limited to cars, trucks, motorcycles, busses, automobiles, trains, railed conveyances, boats, ships, marine conveyances, submarine conveyances, airplanes, space craft, flying machines, human-powered conveyances, and the like.” Ex. 1001 at 14:36-50; *see also* my paragraph 51 above.
- The '243 patent relies upon admittedly known “**authentication**” and “**verification**” techniques; it does not purport to invent any new technique or an improvement thereto. Ex. 1001 at 39:15-20, 73:24-47, 83:35-54, 97:54-67; *see also* my paragraph 59 above.

132. The following table illustrates the generic and conventional nature of claim 1. As shown in the table, claim 1 simply receives a request to access stored data, authorizes the request, determines a request to update the data, and updates

the data. The data is in the form of a “user profile” including “one or more preferences associated with functions or settings of the vehicle.”

Claim 1	Description
1[pre] A system, comprising:	Admittedly generic and conventional computer components
1[a] memory;	
1[b] machine-readable instructions; and	
1[c] one or more processors to execute the machine-readable instructions to:	
1[c-1] receive a request to access a user profile stored at a vehicle, the user profile including one or more preferences associated with functions or settings of the vehicle;	Receiving a request to access stored data
1[c-2] determine, by performing at least one of a verification process or an authentication process in response to the request, whether the request is authorized to access the user profile;	Determining whether to allow access to the data
1[c-3] in response to determining that the request is authorized to access the user profile, determine one or more requested modifications to at least one of the one or more preferences; and	Determining a request to update the data
1[c-4] in response to the one or more requested modifications, create an updated user profile at the vehicle, the updated user profile including one or more updated preferences based on the one or more requested modifications.	Updating the data

133. As reflected above, the claim does not specify how to actually perform any of its functions, including how to “receive a request,” how to “determine ... whether the request is authorized,” how to “perform” the “verification process” or “authentication process” or what those processes are, how to “determine ... modifications” or how to “create an updated profile.” Rather, the claim simply states the results of the functions.

134. I note that the ordering of steps is entirely conventional. In order to make a determination in response to something, that something first needs to occur. In order to update information, you first need to have the updated information. Similarly, it is entirely conventional to receive a request to access data, determine whether to allow access, determine a request to update the data, and update the data. This is simply how data processing works: a request followed by a response.

135. I further note, as I described in Section VI.A above, that the '243 patent describes the steps in Figure 23 to access and update a user profile using the conventional order of steps, namely, (1) requesting access to a profile, (2) determining whether the access is allowed using conventional verification and/or authentication techniques, (3) allowing access and updates to the profile, and (4) saving the updated profile. Ex. 1001 at 87:44-88:21; *see also* my paragraphs 47-48 above. This order is simply the way it was conventionally done, consistent with both the '243 patent and the state of the art (for example, as in Hendry and Singh, discussed above in Sections IX.B.1 and IX.B.4 and below in Sections X.B.1 and X.E.1).

136. While the claims include the admittedly generic, off-the-shelf computing components, but for these components, the claimed process could be performed entirely by a human or with pen and paper. For example, it could be as simple as a user unlocking a vehicle, setting or updating vehicle settings, and

remembering those settings (Example Process #1 below) or a car dealer confirming a driver's license followed by setting or updating vehicle settings and remembering those settings (Example Process #2 below).

Claim 1	Example Process #1	Example Process #2
1[c-1] receive a request to access a user profile stored at a vehicle, the user profile including one or more preferences associated with functions or settings of the vehicle;	Approach a vehicle with a key or key fob to unlock the vehicle	Show a dealer a driver's license
1[c-2] determine, by performing at least one of a verification process or an authentication process in response to the request, whether the request is authorized to access the user profile;	Determine whether the key fits into the key slot or the key fob matches the vehicle	Determine whether the driver's license matches the person and/or is valid
1[c-3] in response to determining that the request is authorized to access the user profile, determine one or more requested modifications to at least one of the one or more preferences; and	Determine if the vehicle occupant wants to change a vehicle setting	Determine if the vehicle occupant wants to change a vehicle setting
1[c-4] in response to the one or more requested modifications, create an updated user profile at the vehicle, the updated user profile including one or more updated preferences based on the one or more requested modifications.	Update the vehicle setting and remember it for future use	Update the vehicle setting and remember it for future use

137. The state of the art further confirms the generic nature of this process to access and update user settings (whether manually or using stored vehicle system settings), for example, as I explained in Section IX above. *See also* Ex. 1005 at [0002]-[0003]; Ex. 1007 at 1:11-47; Ex. 1009 at 1:5-27; Ex. 1021 at [0002]. It likewise confirms the generic nature of authenticating and verifying before allowing access to the data, including in the vehicle user profile context to allow access to a user profile for vehicles, as I also explained in Section IX above. *See also* Ex. 1005 at [0017]-[0019]; Ex. 1006 at [0045]; Ex. 1007 at 9:27-64, 10:35-57; Ex. 1008 at [0002]-[0003], [0022]-[0023], [0038]-[0039], [0066]-[0067]; Ex. 1011 at [0024]-[0025], [0035], [0042], [0050]-[0051]; Ex. 1017 at 14:48-15:3, 17:57-18:8; Ex. 1024 at [0122]-[0123].

138. The above is also consistent with additional portions of the '243 patent. For example, I note that the '243 patent is not seeking to solve a technical problem, but rather enhancing a user's experience by addressing "a need for a vehicle ecosystem, which can integrate both physical and mental comforts, while seamlessly communicating with current electronics devices to result in a totally intuitive and immersive experience" through "user profile" access and updating. Ex. 1001 at 3:55-4:8, Abstract, 16:66-17:11. I also note that the '243 patent confirms that its system and method do not actually need any particular computer

or computer component, but rather they are broadly applicable to “any device(s) or means capable of implementing the methodology illustrated herein [that] can be used to implement the various aspects of this disclosure.” Ex. 1001 at 92:66-93:10. I further note that the ’243 patent explains that its system and method are not limited to any particular standard or protocol, and instead are designed to use current or replacement standards or protocols “having the same functions.” Ex. 1001 at 94:1-15. In other words, the ’243 patent confirms that it is functionally oriented using computers as a tool, not as any improvement to the computer or component operation.

139. As confirmed by the above, claim 1 does not recite, require, or even hint at any advancement in computer technology. Rather, it simply uses a generic processor and memory to perform generic functions of “request,” “determine” and “create.”

140. The same analysis and result hold for dependent claims 2-10. They similarly claim accessing and updating information (in the form of a basic “user profile” for a “vehicle,” using admittedly conventional computing components).

141. Claims 2-5 specify transmitting the updated profile, and determining and resolving conflicts between two versions of a profile, using the same admittedly conventional, generic “one or more processors.” As reflected in the below table, this is no different than updating and storing data when a change is made to the data.

Dependent Claims 2-5	Description
2. The system of claim 1, wherein the one or more processors are to execute the machine-readable instructions to transmit the updated user profile from the vehicle to at least one of a mobile device, a cloud server, a remote server, or another vehicle, wherein a local user profile including one or more local preferences is stored at the at least one of the mobile device, the cloud server, the remote server, or the other vehicle prior to transmission of the updated user profile to the at least one of the mobile device, the cloud server, the remote server, or the other vehicle.	Sending data and storing data
3. The system of claim 2, wherein the one or more processors are to execute the machine-readable instructions to determine whether any conflicts exist between the updated preferences of the updated user profile and the local preferences of the local user profile.	Determining differences between data
4. The system of claim 3, wherein, in response to determining that one or more conflicts exist between the updated preferences and the local preferences, the one or more processors are to execute the machine-readable instructions to overwrite conflicted ones of the local preferences with corresponding conflicting ones of the updated preferences.	Updating the stored data
5. The system of claim 3, wherein, in response to determining that one or more conflicts exist between the updated preferences and the local preferences, the one or more processors are to execute the machine-readable instructions to perform a reconciliation process that allows selective determination of which conflicted ones of the local preferences should be overwritten by corresponding conflicting ones of the updated preferences.	Determining which data to use

142. I further note that neither the claims, nor the '243 patent, provide details concerning overwriting, reconciling, and updating profiles—treating them as functional black boxes that simply happen. Ex. 1001 at 87:44-88:20, FIG. 23; *see*

also Ex. 1001 at 21:64-22:10, 92:66-93:67. This black-box functional nature treatment is consistent with the state of the art that such functions were conventionally used—indeed, they are nothing more than saving updated files. And, as with claim 1, the functions in claims 2-5 could be performed by pen and paper, for example, comparing two documents and deciding which portions to erase or update.

143. Claims 6-8 relate to and provide further details about the authentication and verification processes of claim 1.

144. Claim 6 requires performing both the unspecified “authentication process” and “verification process.” Requiring both processes does nothing to change the nature of the claim, especially when claim 6 does not explain what those processes are or how they are implemented, and the ’243 patent relies on known verification/authentication techniques. This is the same for unspecified “at least one of a verification process or an authentication process” (*i.e.*, one or more of these processes) in claim 1.

145. Claims 7-8 provide examples of the “authentication process” and “verification process,” such as admittedly known and conventional “biometric recognition,” “facial recognition,” “identification of a mobile device,” and “exchange of security keys.” These are simply conventional techniques, as admitted

by the '243 patent and confirmed by the state of the art (for example, as I discussed above in this section, as well as in Section IX above).

146. The following table illustrates the generic and conventional nature of claim 6-8. As shown in the table, these claims simply provide certain details about the authentication and verification process to determine whether to allow access to the data, using conventional techniques.

Dependent Claims 6-8	Description
6. The system of claim 1, wherein the one or more processors are to perform both the verification process and the authentication process, and wherein the one or more processors are to determine that the request is authorized to access the user profile in response to successfully verifying the request via the verification process and successfully authenticating the request via the authentication process.	Determining whether to allow access to the data
7. The system of claim 1, wherein the verification process includes at least one of biometric recognition, gesture recognition, facial recognition, or identification of a mobile device.	Determining whether to allow access to the data
8. The system of claim 1, wherein the authentication process includes an exchange of security keys between the vehicle and a mobile device.	Determining whether to allow access to the data

147. Claims 9-10 require that the “user profile” is based on a “template” or a “global standard template.” The '243 patent provides no details about a template, other than it can be used “as a starting point,” and a “profile” can be effectively any known datastore. Ex. 1001 at 14:50-55, 17:54-62, 18:22-36, 72:35-45, 72:60-73:24. Moreover, as with the other claims, a person could create and update a template by

hand using pen and paper (for example, updating a written document that includes a table with columns and rows to fill in).

Dependent Claims 9-10	Description
9. The system of claim 1, wherein the user profile is based on a template for the one or more preferences, and the updated user profile is created relative to the template.	Unspecified format for data
10. The system of claim 9, wherein the template is a global standard template that is common among at least two vehicle manufacturers.	Unspecified format for data

148. As to method claims 11-20, as I explained in Section VI.C above, they correspond to system claims 1-10. Accordingly, claims 11-20 are patent ineligible for the same reasons I explained above in this section regarding claims 1-10.

B. Ground 2: Hendry (Ex. 1005) renders claims 1, 6-8, 11, and 16-18 obvious.

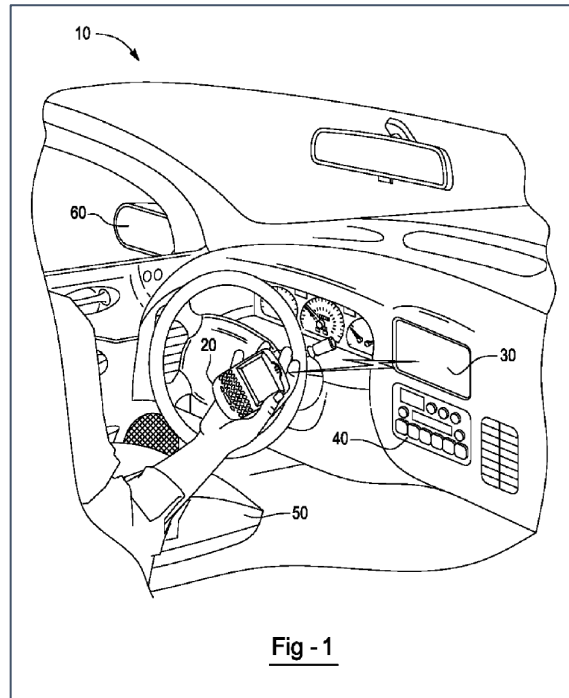
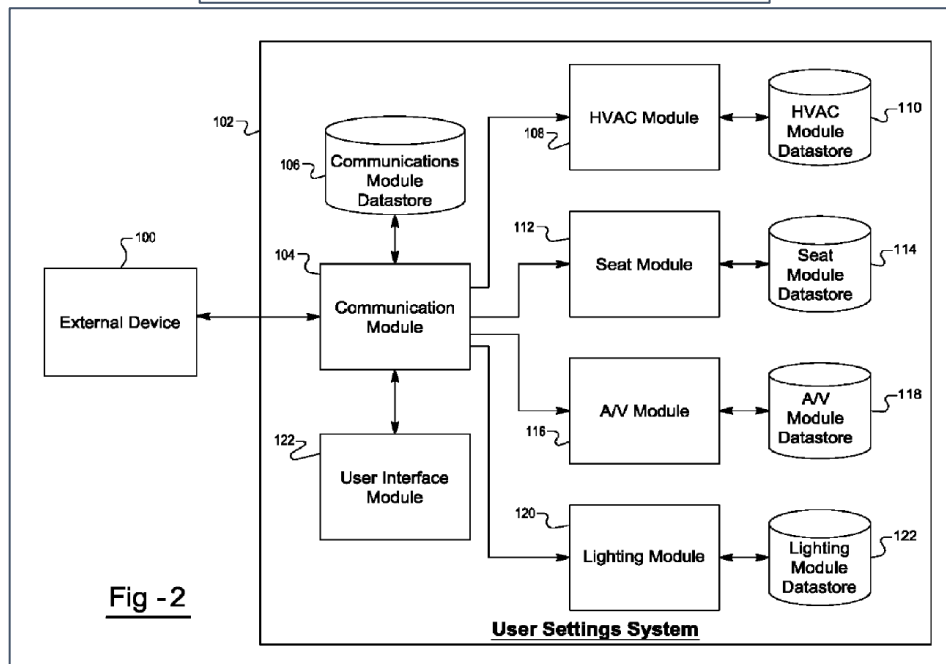
149. In my opinion, Hendry renders claims 1, 6-8, 11, and 16-18 obvious.

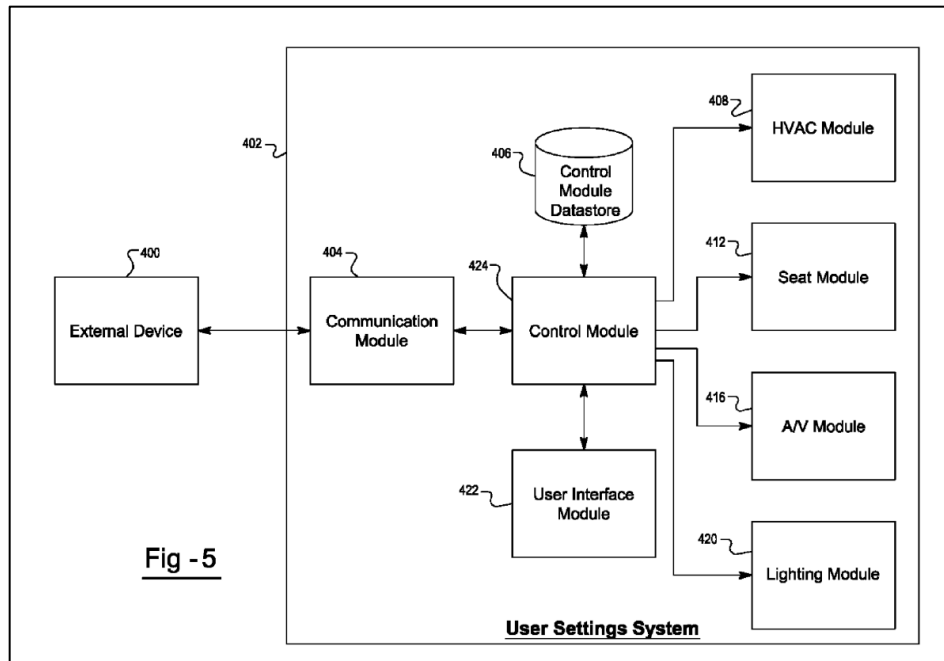
1. Claim 1

1[pre] “A system, comprising:”

150. Regardless of whether the preamble of claim 1, Hendry discloses “a system,” such as “user settings system” in Figures 1, 2, and 5 in a vehicle. Ex. 1005 at [0012]-[0013], [0005], [0033]. In Figure 1, the user settings system is not numbered; in Figure 2, it is numbered 102; and in Figure 5, it is numbered 402. As I explained above in Section IX.B.1, a POSITA would have found and understood that the configurations disclosed in Hendry are complementary and

interchangeable, consistent with the teachings in Hendry (for example, as I explained, Hendry explains that its processes in Figures 3 and 4 apply to both Figures 2 and 5).





Ex. 1005 at FIGs. 1, 2, 5.

151. I explain this system in Hendry further below.

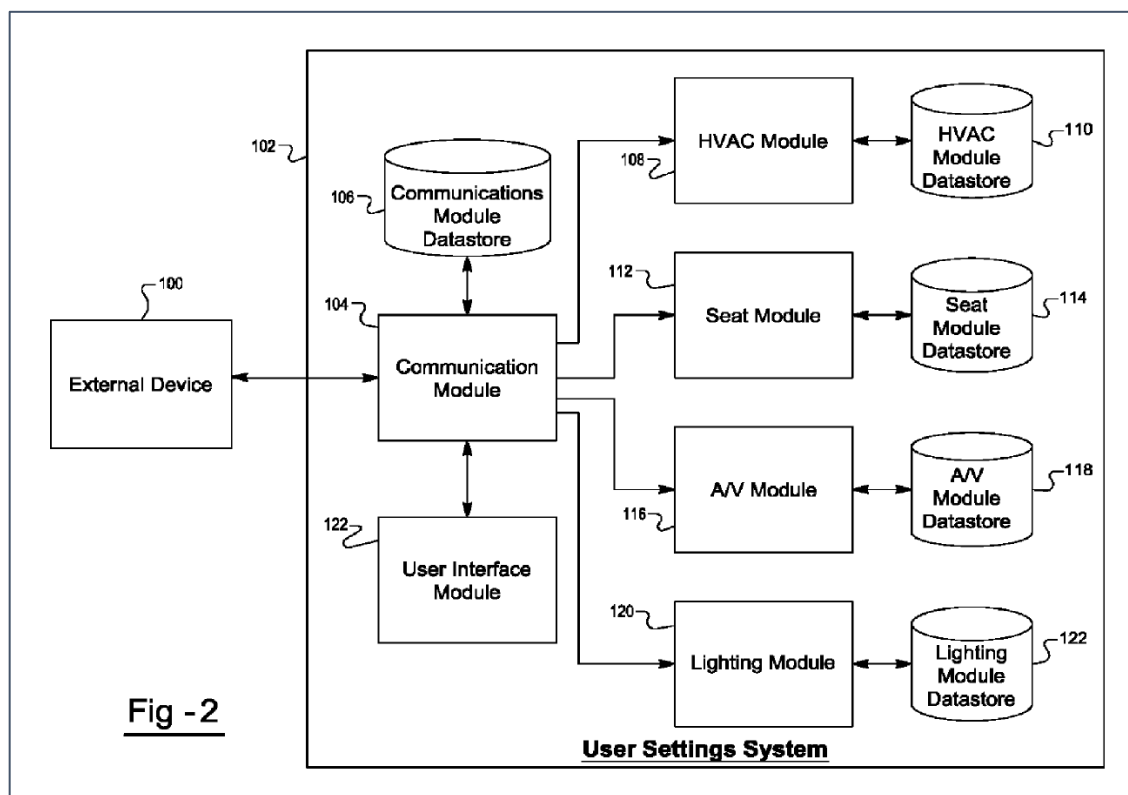
1[a] “memory;”

152. Hendry discloses the claimed “*memory*,” for example, vehicle “data stores” in Figure 2 and the centralized vehicle “datastore” in Figure 5 that store various data, including user settings for the vehicle. Ex. 1005 at [0005], [0020]-[0021], [0033], [0036], [0038].

153. In Figure 2, reproduced below, Hendry discloses that the various modules in the user settings system of the vehicle include a corresponding data store (e.g., “HVAC,” “A/V,” “lighting,” “seat”) and are “comprised of EEPROM which is accessible to the respective module.” Ex. 1005 at [0020]. According to Hendry, “[e]ach datastore stores parameter values relating to the user’s personal settings.”

Ex. 1005 at [0021]. Hendry further discloses that “[t]he term module may include **memory** (shared, dedicated, or group) that stores code executed by the processor.”

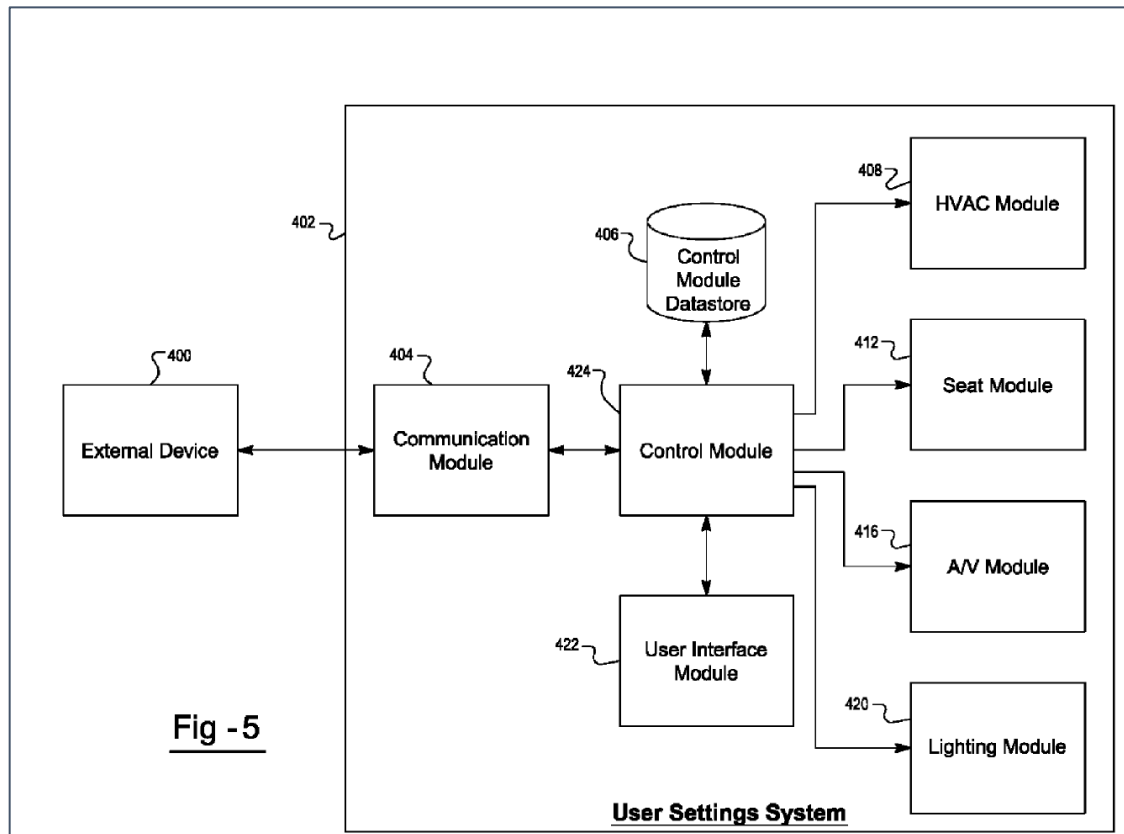
Ex. 1005 at [0036] (emphasis added). Hendry discloses that “[t]he applications [in the disclosed “apparatuses and methods”] may also include stored data,” where “[n]on-limiting examples of the non-transitory tangible computer readable medium are nonvolatile memory, magnetic storage, and optical storage.” Ex. 1005 at [0038].



Ex. 1005 at FIG. 2.

154. Figure 5, reproduced below, discloses a similar configuration to Figure 2, with the main difference that it includes “central data store 406” that “stores data for validating and/or authenticating a device, the value parameters associated with

the various devices or users having preferred settings stored, and any other data used by the user settings system 402.” Ex. 1005 at [0033].



Ex. 1005 at FIG. 5.

155. Hendry also discloses that “[b]ased on the user identity, the preferred user settings are retrieved from the data stores of the vehicle components (FIG. 2) or from a control module datastore (FIG. 5), as shown at step 256” of Figure 3B. Ex. 1005 at [0028].

156. Hendry provides further disclosure confirming that the data stores (memory) are in the vehicle, for example, explaining that “[t]he system further comprises at least one component module that retrieves settings of the at least one

vehicle component of the vehicle from a data store associated with the at least one component module based on the request to establish the communications link and that adjusts the settings of the at least one vehicle component based on the retrieved settings,” where “[t]he data store resides in the vehicle[.]” Ex. 1005 at [0005].

1[b] “machine-readable instructions; and”

157. Hendry discloses the claimed “*machine-readable instructions*,” for example, processor-executable instructions executed by one or more processors to perform various system functions. Ex. 1005 at [0036]-[0038].

158. Hendry discloses that its systems and methods “described herein” in Hendry (such as those in Figures 1-5) are implemented by processors performing processor-executable instructions:

The apparatuses and methods described herein may be implemented by one or more applications executed by one or more processors. The applications include processor-executable instructions that are stored on a non-transitory tangible computer readable medium. The applications may also include stored data. Non-limiting examples of the non-transitory tangible computer readable medium are nonvolatile memory, magnetic storage, and optical storage.

Ex. 1005 at [0038] (emphasis added).

159. Consistent with this disclosure and the understanding of a POSITA, Hendry explains the term “code” (namely, processor-executable instructions):

As used herein, the term module may refer to, be part of, or include an Application Specific Integrated Circuit (ASIC); an

electronic circuit; a combinational logic circuit; a field programmable gate array (FPGA); a processor (shared, dedicated, or group) that executes code; other suitable components that provide the described functionality; or a combination of some or all of the above, such as in a system-on-chip. The term module may include memory (shared, dedicated, or group) that stores code executed by the processor.

The term code, as used above, may include software, firmware, and/or microcode, and may refer to programs, routines, functions, classes, and/or objects. The term shared, as used above, means that some or all code from multiple modules may be executed using a single (shared) processor. In addition, some or all code from multiple modules may be stored by a single (shared) memory. The term group, as used above, means that some or all code from a single module may be executed using a group of processors. In addition, some or all code from a single module may be stored using a group of memories.

Ex. 1005 at [0036]-[0037] (emphasis added).

160. And, further confirming the understanding of a POSITA that Hendry discloses the claimed “*machine-readable instructions*” by its disclosure of “processor-executable instructions” and “code,” the Microsoft Computer Dictionary, Fifth Edition, explains “code” as follows (definition no. 1):

code¹ *n.* **1.** Program instructions. Source code consists of human-readable statements written by a programmer in a programming language. Machine code consists of numerical instructions that the computer can recognize and execute and that were converted from source code. *See also* data, program. **2.** A system of symbols used to convert information from one form to another. A code for converting information in order to conceal it is often called a *cipher*. **3.** One of a set of symbols used to represent information.

Ex. 1012 at 106.

1[c] “one or more processors to execute the machine-readable instructions to:”

161. Hendry discloses the claimed “*one or more processors to execute the machine-readable instructions to,*” for example, one or more processors to execute processor-executable instructions to perform various system functions, as I explained above regarding limitation 1[b]. *See also* Ex. 1005 at [0027]-[0028], [0033], [0036]-[0038].

162. Again, Hendry discloses that its systems and methods “described herein” in Hendry (such as those in Figures 1-5) are implemented by processors running processor-executable instructions:

The apparatuses and methods described herein may be implemented by one or more applications executed by one or more processors. The applications include processor-executable instructions that are stored on a non-transitory tangible computer readable medium. The applications may also include stored data. Non-limiting examples of the non-

transitory tangible computer readable medium are nonvolatile memory, magnetic storage, and optical storage.

Ex. 1005 at [0038] (emphasis added).

163. Consistent with this disclosure and the understanding of a POSITA, Hendry explains further that the modules (such as those in Figures 2 and 5) may include a processor that executes code:

As used herein, the term module may refer to, be part of, or include an Application Specific Integrated Circuit (ASIC); an electronic circuit; a combinational logic circuit; a field programmable gate array (FPGA); **a processor (shared, dedicated, or group) that executes code**; other suitable components that provide the described functionality; or a combination of some or all of the above, such as in a system-on-chip. The term module may include memory (shared, dedicated, or group) that stores code executed by the processor.

The term code, as used above, may include software, firmware, and/or microcode, and may refer to programs, routines, functions, classes, and/or objects. The term shared, as used above, means that some or all code from multiple modules may be executed using a single (shared) processor. In addition, some or all code from multiple modules may be stored by a single (shared) memory. The term group, as used above, means that some or all code from a single module may be executed using a group of processors. In addition, some or all code from a single module may be stored using a group of memories.

Ex. 1005 at [0036]-[0037] (emphasis added).

164. Based on Hendry's disclosure (including in paragraphs [0027]-[0028], [0033], and [0036]-[0038] discussed above regarding the limitations for claim 1 and

in Section IX.B.1), a POSITA would have understood that the disclosed processors executing machine-readable instructions would implement the various steps and functions disclosed in Hendry's system (including those in independent claim 1 and its dependents). Indeed, Hendry explicitly states so.

1[c-1] “receive a request to access a user profile stored at a vehicle, the user profile including one or more preferences associated with functions or settings of the vehicle;”

165. Hendry discloses the claimed “*one or more processors to execute the machine-readable instructions to: receive a request to access a user profile stored at a vehicle, the user profile including one or more preferences associated with functions or settings of the vehicle.*” For example, Hendry discloses receiving a request from an external device to establish a communications link to access a user profile stored in a vehicle including various vehicle settings and functions for the user. Ex. 1005 at [0004]-[0005], [0012]-[0014], [0005], [0019]-[0021], [0027]-[0028], [0031], [0033], FIGs. 1-2, 3A-3B, 4B, 5.

166. Initially, Hendry discloses that the user profiles are stored in a vehicle. For example, Hendry explains, in the context of Figure 1, that “vehicle 10 [has] a user settings system” that “is configured to reinstate settings of at least one vehicle component of a vehicle 10, wherein the settings are saved by a user of the vehicle 10” and communicates with external device 20. Ex. 1005 at [0012].

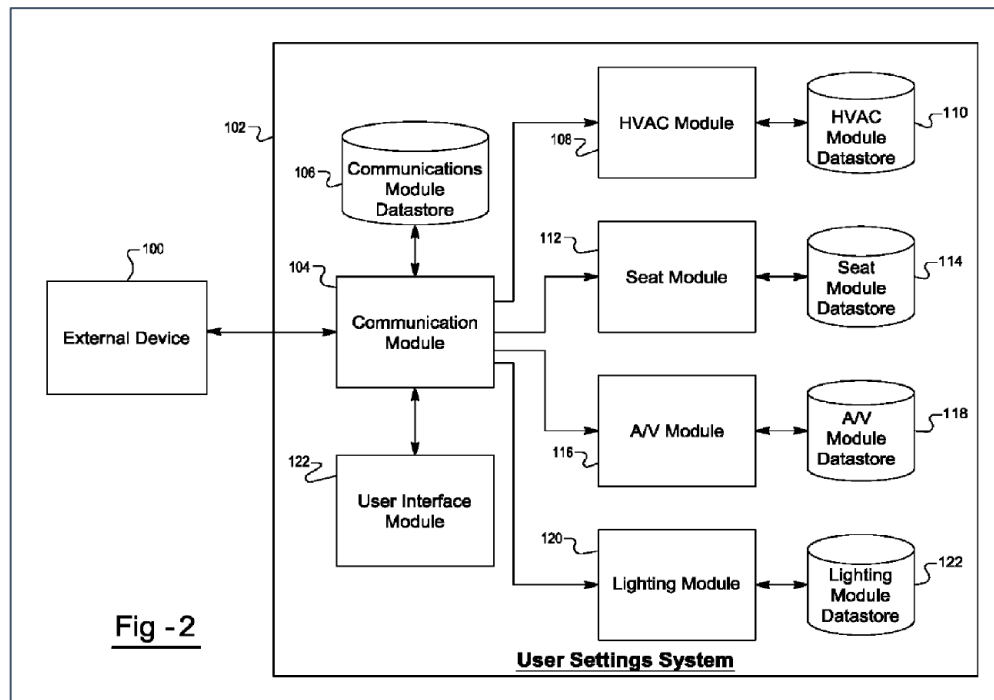
167. Hendry then discloses exemplary user settings systems, such as system 102 in Figure 2 and system 402 in Figure 5, that communicate with external devices 100 and 400, respectively, and store data in the datastores. Ex. 1005 at [0019]-[0021], [0028], [0033]. A POSITA would have likewise understood that these systems with their datastores are within the vehicle.

168. As further confirmation that the datastores are in the vehicle, Hendry discloses, in its Summary—which a POSITA would have understood to be generally applicable to the disclosure in Hendry—“that the system further comprises at least one component module that retrieves settings of the at least one vehicle component of the vehicle **from a data store associated with the at least one component module** based on the request to establish the communications link and that adjusts the settings of the at least one vehicle component based on the retrieved settings, where “[t]he **data store resides in the vehicle**[.]” Ex. 1005 at [0005].

169. Hendry discloses that, in Figure 2, “[e]ach datastore stores parameter values relating to the user’s personal settings.” Ex. 1005 at [0020]. Hendry discloses in Figure 5 a centralized datastore for storing the settings. Ex. 1005 at [0033].

170. Hendry discloses, in the context of Figure 2, reproduced below, that “[a]s will be described, the user settings system 102 uses a request from an external device 100 to establish the communications link to determine an identity of the user

or the device,” and “[i]n essence, the user settings system 102 piggybacks the request to establish a communications link into a request to reinstate the personal settings of the user associated with the external device 100.” Ex. 1005 at [0019].



Ex. 1005 at FIG. 2.

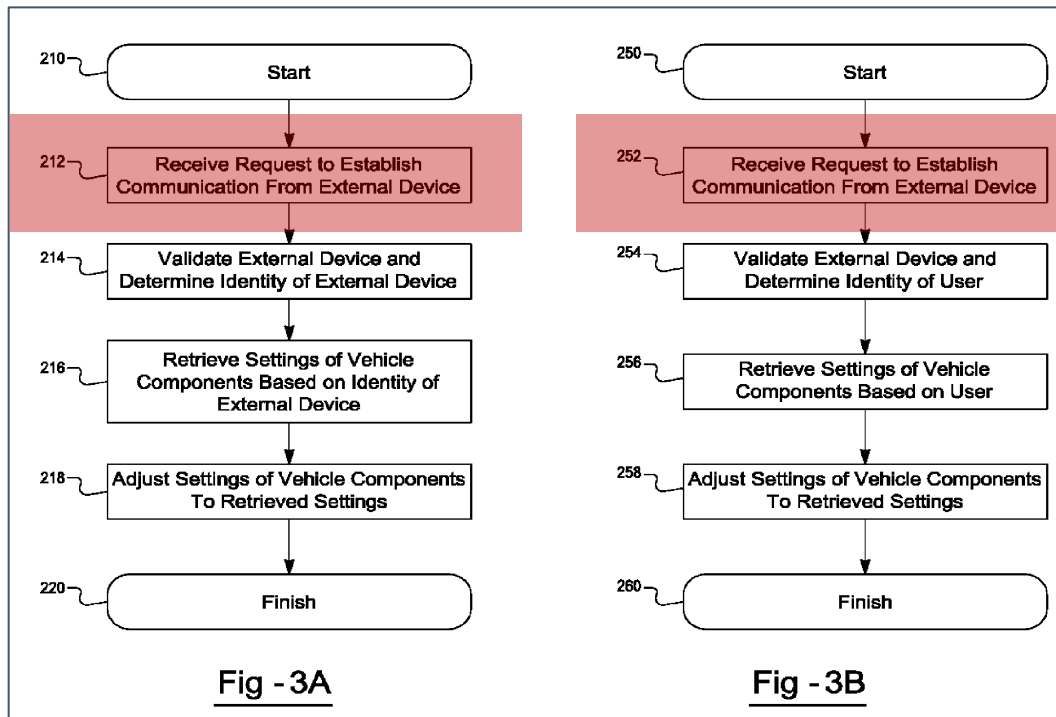
171. Hendry provides other similar disclosures for receiving a request from an external device to establish a communications link to access a user profile stored in a vehicle including various vehicle settings and functions for the user. For example, Hendry discloses “receiving a request to establish a communications link between a communications module of the vehicle and an external device associated with a user of the vehicle from the external device” and “retrieving settings of the

at least one vehicle component of the vehicle from a data store.” Ex. 1005 at [0004]. As another example, Hendry discloses that “[u]pon receiving notification of the user or external device 100, each of the modules 104, 112, 116, and 120, will retrieve user settings corresponding to the user or external device 100 from a respective datastore” in the vehicle, such as HVAC and other datastores for the other settings. Ex. 1005 at [0014]. As a further example, Hendry discloses that “[b]ased on the user identity, the preferred user settings are retrieved from the data stores of the vehicle components (FIG. 2) or from a control module datastore (FIG. 5).” Ex. 1005 at [0028].

172. Consistent with the above disclosure in Hendry, Hendry discloses various user settings stored in the vehicle datastores that are retrieved by the vehicle component modules—for various vehicle functions and settings including HVAC, seats, lighting, etc. Accordingly, a POSITA would have understood that Hendry discloses that the retrieved user settings, stored at the vehicle and making up a user profile, are associated with a particular user (and/or an external device of the user).

173. As further confirmation that Hendry discloses the claimed limitation in 1[c-1], Figures 3A and 3B, reproduced below, depict that a request is received to establish communication (**steps 212 and 252**, respectively, below) to access and restore “a user’s personal settings” stored in the vehicle datastore(s) for the

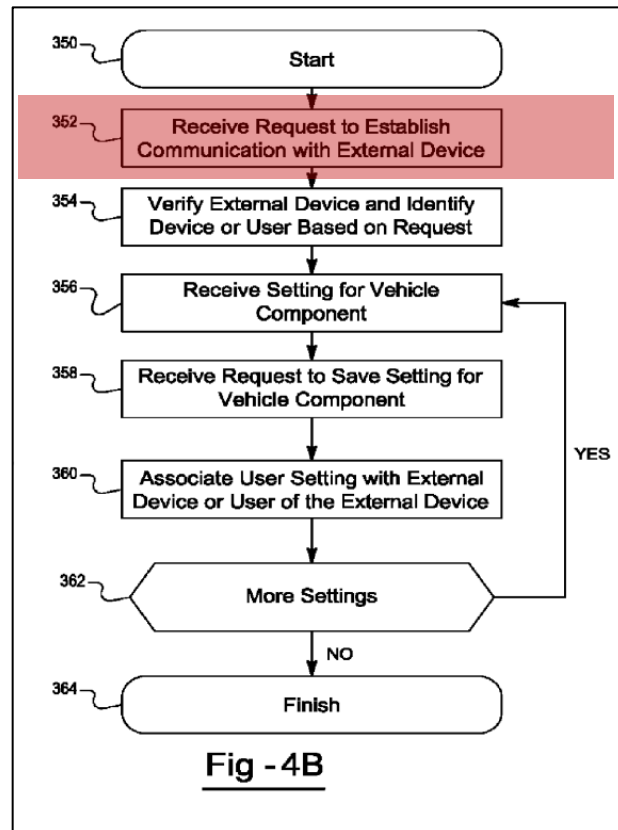
associated user (using “a device identifier” in Figure 3A and “user identifier” in Figure 3B). Ex. 1005 at [0027]-[0028], [0013]-[0014], [0019].



Ex. 1005 at FIGS. 3A, 3B.

174. Hendry discloses, in Figure 4B, reproduced below, “[a]s can be appreciated, a user may opt to change or add his or her personal settings after some time.” Ex. 1005 at [0031]. Hendry explains that “[a]s discussed above” (which would include discussion regarding Figures 3A and 3B) “the external device 100 will request to establish a communications link, and the communications module 104 will receive the request and verify and/or authenticate the external device 100, as shown at **steps 352** and 354.” As can be seen in Figure 4B and as explained in Hendry, this step 352 likewise corresponds

to a request to access and restore a user's personal settings stored in the vehicle datastore(s) for the associated user.



Ex. 1005 at FIG. 4B.

1[c-2] “determine, by performing at least one of a verification process or an authentication process in response to the request, whether the request is authorized to access the user profile;”

175. Hendry discloses the claimed “one or more processors to execute the machine-readable instructions to: ... determine, by performing at least one of a verification process or an authentication process in response to the request, whether the request is authorized to access the user profile.” For example, in

response to the request in limitation 1[c-1], Hendry discloses performing an authentication and/or verification process to authenticate and/or verify the external device (and/or user) to determine whether access to the user profile is authorized. Ex. 1005 at [0017]-[0021], [0027]-[0028], [0031], FIGs. 3A-3B, 4B.

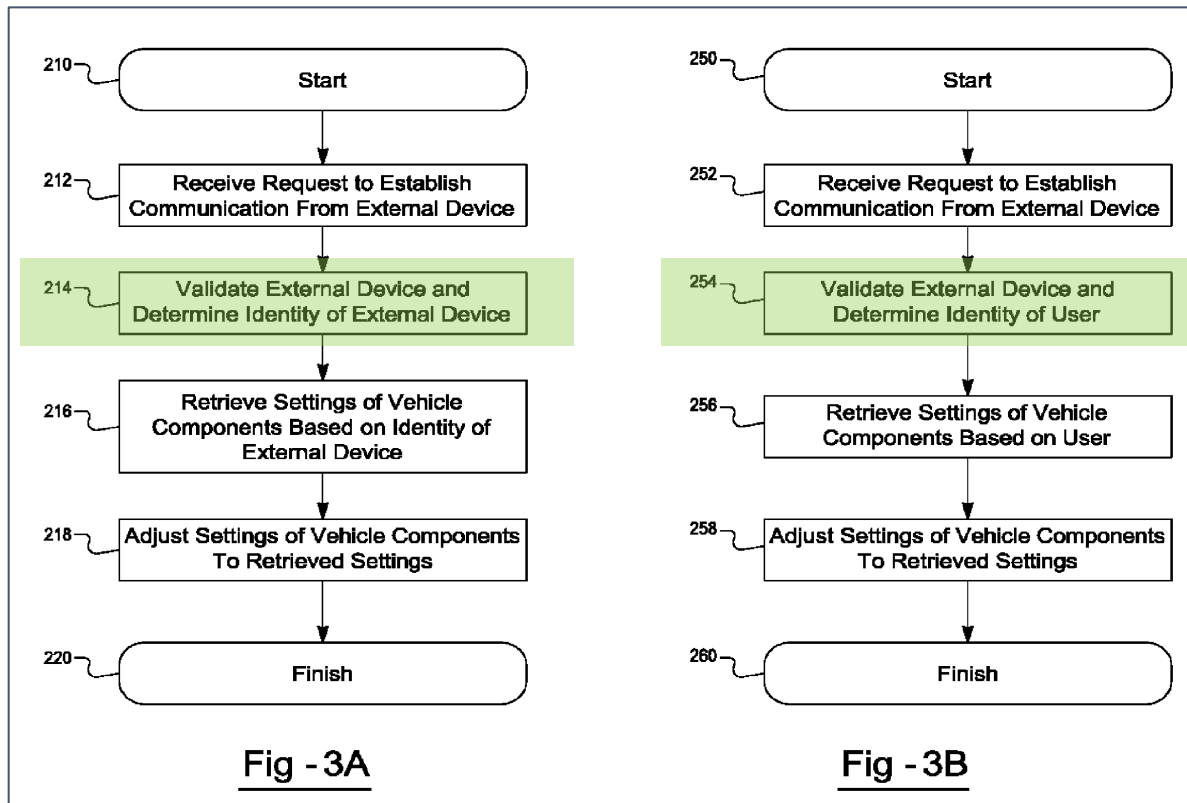
176. Hendry discloses similar flows in Figures 3A and 3B including a verification and/or authentication process to restore a user's personal settings, where the process determines the identity of the external device (in the Figure 3A flow) and/or user (in the Figure 3B flow). Ex. 1005 at [0027]-[0028].

177. In Figure 3A, reproduced below, Hendry “illustrates an exemplary method for restoring a user's personal settings, which is executed by the user settings system 102.” Ex. 1005 at [0027]. Hendry discloses, at step 212, receiving a request to establish a communication link (and thereby access the stored user settings as discussed above), where the request includes “a key and a device identifier.” Ex. 1005 at [0027]. “Once the communications module 104 receives the request to establish a communications link, the communications module 104 will **verify/authenticate** the external device 100 by checking the communications module datastore 106, as shown at **step 214**.” Ex. 1005 at [0027] (emphasis added). Hendry also discloses that “communications module 104 will **verify** that a device having the received device identifier and key is represented in the communications module datastore 106” and “[i]f so, the communications module 104 will establish

a communications link with the external device 100” and authorize access to the stored user profile. Ex. 1005 at [0027] (emphasis added). Once the verification and/or authentication occurs, “in the configuration shown in FIG. 2, the communications module 104 will communicate the device identifier or an indicator thereof to the various vehicle components,” and “[b]ased on the device identifier, the vehicle components will retrieve the personal settings associated with the device identifier from an associated datastore, as shown at step 216.” Ex. 1005 at [0027].

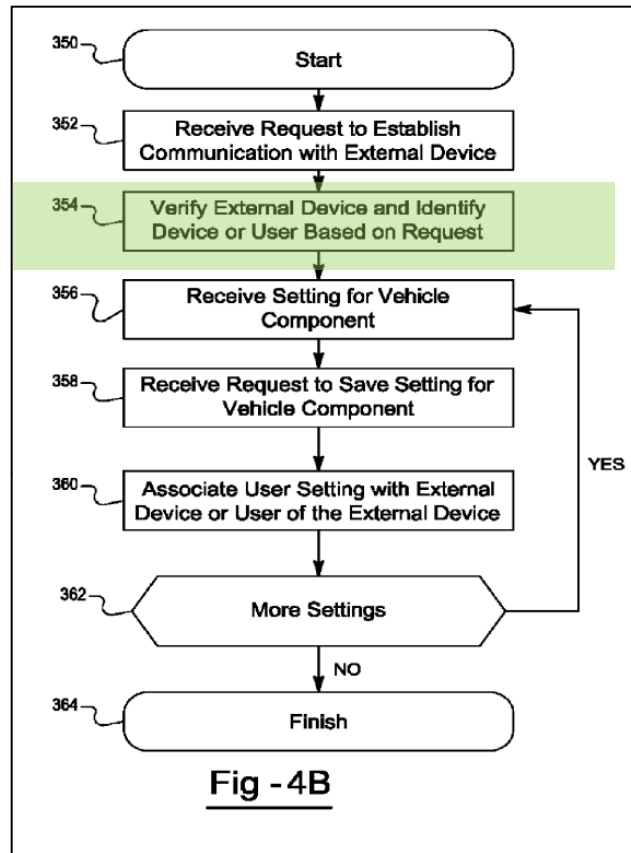
178. Figure 3B, reproduced below, is a “variation of the method” in Figure 3A in which a “user identifier is used to retrieve the settings rather than a device identifier.” Ex. 1005 at [0028]. Hendry discloses, at step 252, receiving a request to establish a communication link, and “[w]hen the communications module 104 receives a request to establish a communications link with one of the listed external devices 100, the communication module will retrieve a user identity associated with the device identifier of the external device 100... as shown at **step 254**.” Ex. 1005 at [0028]. “The user identity can be communicated to the various vehicle components (FIG. 2) or a control module (FIG. 5)” and “[b]ased on the user identity, the preferred user settings are retrieved from the data stores of the vehicle components (FIG. 2) or from a control module datastore (FIG. 5), as shown at step 256.” Ex. 1005 at [0028], FIG. 3B. In other words, Hendry discloses that the

verification/authentication occurs in response to the request (at steps 212 and 252) and if verified, the user is authorized to access the profile (steps 216 and 256).



Ex. 1005 at FIGS. 3A, 3B.

179. Hendry discloses a similar process in Figure 4B, where **step 354** includes to “verify and/or authenticate the external device” using the process “[a]s discussed above,” Ex. 1005 at [0031], and depicts in the Figure to “verify external device and identify device or use based on request” from step 352.



180. Although claim 1 does not specify the particular “verification process” or “authentication process,” Hendry not only discloses to use a “verify **and/or** authenticate” process (*i.e.*, to use one or both processes), it provides specific examples.

181. For example, Hendry discloses that “the Bluetooth® protocol” may be used, whereby “during pairing state, the communications module 104 will generate and assign a key to the external device 100 and the external device 100 will verify the key.” Ex. 1005 at [0017]. Hendry discloses that (i) “the term key refers to any suitable code, password, passcode, or string used to authenticate a device” and (ii)

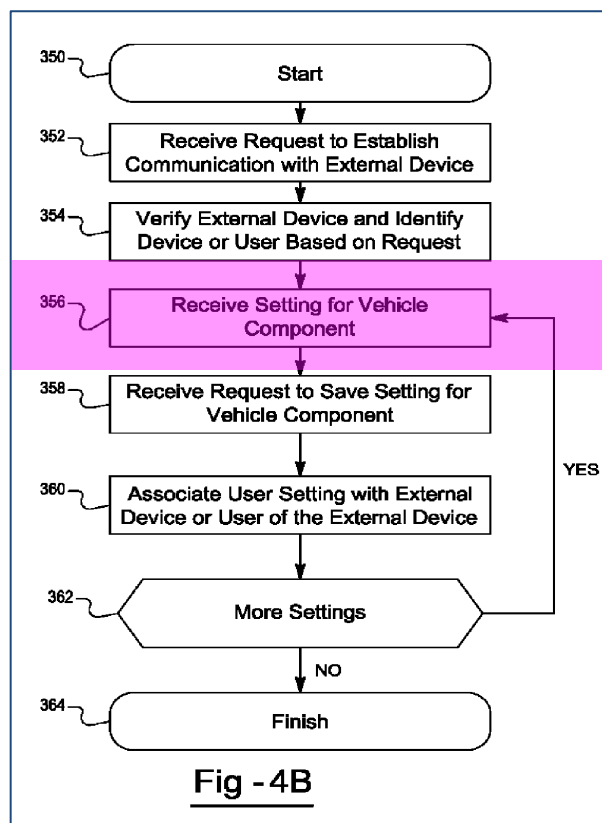
“any suitable means for generating a key can be used and the key can be formatted in any suitable fashion.” Ex. 1005 at [0017]. Hendry also discloses that “communications module datastore 106 can be further configured to associate a user identity with the device and/or key.” Ex. 1005 at [0018]. And, Hendry discloses checking a stored key against a transmitted key to determine a match. Ex. 1005 at [0019]. As Hendry explains, once verification and/or authentication occurs using the external device key and device identifier, the “store[d] parameter values relating to the user’s profile settings” are retrieved from the datastores. Ex. 1005 at [0018]-[0021].

1[c-3] “in response to determining that the request is authorized to access the user profile, determine one or more requested modifications to at least one of the one or more preferences; and”

182. Hendry discloses, or it would at least have been obvious to a POSITA to include as part of Hendry, the claimed “*one or more processors to execute the machine-readable instructions to: ... in response to determining that the request is authorized to access the user profile, determine one or more requested modifications to at least one of the one or more preferences.*” For example, in response to the determination in limitation 1[c-2], Hendry discloses that a user may

change one or more settings, which are then updated and stored in the vehicle datastore(s). Ex. 1005 at [0010], [0029]-[0031], FIGs. 4A-4B.

183. Figure 4B, reproduced below, “illustrates an exemplary method that is executed by the user settings system after a device has been learned by the user settings system.” Ex. 1005 at [0031], [0010]. In other words, a POSITA would have understood that Hendry discloses, in Figure 4B, updating settings for a previously saved user profile already associated with an external device or user (*e.g.*, those retrieved in the context of Figures 3A-3B). Ex. 1005 at [0031]. This is further disclosed in Hendry, for example, when discussing the initial set-up in Figure 4A. Ex. 1005 at [0029]-[0030]. I also explained this concept in Section IX.B.1 above.



Ex. 1005 at FIG. 4B.

184. Hendry discloses, in the context of Figure 4B, that (i) “[a]s discussed above, the external device 100 will request to establish a communications link, and the communications module 104 will receive the request and verify and/or authenticate the external device 100, as shown at steps 352 and 354” and (ii) then “[t]he user **at any given time** may opt to change the settings of one or more of the vehicle components, as shown at **step 356.**” Ex. 1005 at [0031] (emphasis added). Hendry discloses that “[i]f the user does so, the user may be prompted by the user interface 122 to indicate if the adjusted settings of the one or more vehicle components are to be saved,” and “the adjusted settings are saved in a datastore associated with the vehicle component, as shown at step 358.” Ex. 1005 at [0031]. “[T]he new settings are associated with the device identifier or the user identifier in the datastore for later retrieval, as shown at step 358” and “[i]f the user has changed more than one setting, the method continues to reiterate, as shown at step 362, until no more settings are to be saved.” Ex. 1005 at [0031].

185. A POSITA would have understood that changing settings “**at any given time**” would encompass doing so at varying times. For example, it would encompass doing so (i) directly in response to determining the request is authorized and (ii) a later time when the user later modifies a setting (such as moving a seat

forward, lowering the temperature, etc.). This is further confirmed by Hendry itself, which I note has step 356 directly after and in response to step 354. That is, Hendry discloses verifying the external device and identity based on the request (steps 352 and 354), followed directly by receiving a setting modification for a vehicle component (**step 356**). Ex. 1005 at [0031].

186. Lastly, I note that Patent Owner has asserted that this limitation is met “if the processor determines that the request to access the user profile is authorized, the processor receives input from the vehicle display, information associated with vehicle components and sensors, such as seat, steering wheel, and mirror positions, and/or buttons, to determine requested modifications to be made to one or more of the preferences saved to the user profile.” Ex. 1025 at 4 (Patent Owner infringement contentions in district court). In other words, Hendry also discloses this limitation under Patent Owner’s interpretation.

1[c-4] “in response to the one or more requested modifications, create an updated user profile at the vehicle, the updated user profile including one or more updated preferences based on the one or more requested modifications.”

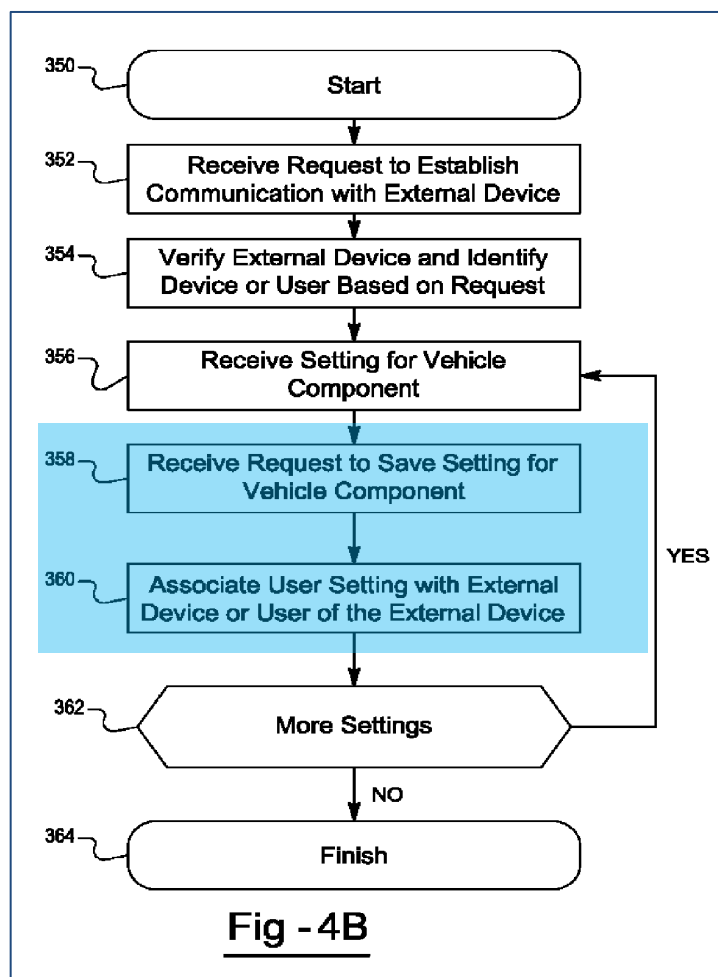
187. Hendry discloses the claimed “*one or more processors to execute the machine-readable instructions to: ... in response to the one or more requested modifications, create an updated user profile at the vehicle, the updated user profile including one or more updated preferences based on the one or more requested*

modifications.” For example, Hendry discloses updating and storing the settings of the user profile in the vehicle datastores in response to the user requesting setting modifications. Ex. 1005 at [0031], FIG. 4B.

188. I explained regarding limitation 1[c-3], above, that Hendry discloses, in the context of Figure 4B, that (i) “the user at any given time may opt to change the settings of one or more of the vehicle components, as shown at step 356,” (ii) “[i]f the user does so, **the user may be prompted by the user interface 122 to indicate if the adjusted settings of the one or more vehicle components are to be saved,**” (iii) “[i]f the user responds affirmatively, the **adjusted settings are saved in a datastore** associated with the vehicle component, as shown at **step 358,**” (iv) “the new settings are associated with the device identifier or the user identifier in the datastore for later retrieval, as shown at **step 358 [sic: 360],**”⁴ and (v) “[i]f the user has changed more than one setting, the method continues to reiterate, as shown at step 362, until no more settings are to be saved.” Ex. 1005 at [0031] (emphasis added).

⁴ I again note that there is an apparent typo in paragraph [0031] of Hendry. In context, a POSITA would have understood that Hendry was referring to step 360, which occurs after step 358 and before step 362, as described in paragraph [0031] and consistent with the depiction and language in Figure 4B when discussing step 360.

189. Consistent with the disclosure in Hendry, a POSITA would have understood that this process results in an updated user profile containing the changed settings for the associated vehicle components in Hendry (*e.g.*, the updated user profile including the modified/changed settings are stored in the datastore(s) in the vehicle).



Ex. 1005 at FIG. 4B.

2. **Claim 6**

“The system of claim 1, wherein the one or more processors are to perform both the verification process and the authentication process, and wherein the one or more processors are to determine that the request is authorized to access the user profile in response to successfully verifying the request via the verification process and successfully authenticating the request via the authentication process.”

190. As I explained above, Hendry renders claim 1 obvious. Hendry also renders claim 6 obvious for the same reasons. Like claim 1, claim 6 does not specify what the “verification process” or the “authentication process” are. It just requires “to perform both the verification process and the authentication process.”

191. Initially, as I explained above regarding limitation 1[c-2] for claim 1, Hendry discloses to “verify **and/or** authenticate” the external device and/or to allow access to the associated user profile (*i.e.*, it discloses to use one or both of a verification and authentication process). “And/or” indicates to use one or both, and thus, Hendry discloses to use both verification and authentication. I note the ’243 patent’s use of “and/or,” which similarly describes that and/or means one or both. Ex. 1001 at 10:5-12.

192. I further note, as I did in my discussion for limitation 1[c-2] in claim 1, that Hendry discloses to use “the Bluetooth® protocol” to establish communication between the communication module in the vehicle and the external

device, and “during the pairing state, the communications module 104 will generate and assign a key to the external device 100 and the external device 100 will verify the key.” Ex. 1005 at [0017].

193. Hendry also discloses—in the same paragraph [0017] that I discussed above regarding utilizing the Bluetooth protocol—to implement a device identifier and/or key and that “secure simple pairing” can be used:

As discussed, the external device 100 is initially paired to the communications module 104. In embodiments where the communications module 104 operates according to the **Bluetooth® protocol, during the pairing state, the communications module 104 will generate and assign a key to the external device 100 and the external device 100 will verify the key.** As used herein, the term key refers to any suitable code, password, passcode, or string used to authenticate a device. It is appreciated that any suitable means for generating a key can be used and the key can be formatted in any suitable fashion. The communications module 104 stores the key and a device identifier in a communications module datastore 106. The communications module datastore 106 stores the keys and device identifiers for all external devices 100 paired with the communications module 104. **In some instances, the communications module datastore 106 can be further configured to associate a user identity with the device and/or key.** Once the key is assigned to the external device 100 and agreed upon by the external device 100 and the communications module 104, the external device 100 and the communications module 104 are considered paired. It is envisioned that any suitable pairing means can be used. For instance, legacy pairing or **secure simple pairing** can be implemented on the communications module 104.

Ex. 1005 at [0017] (emphasis added).

194. In the context of Hendry, including in its paragraph [0017] discussing Bluetooth pairing, a POSITA would have understood Hendry's reference to "secure simple pairing" to (i) refer to Bluetooth protocol v2.1's secure simple pairing ("SSP"), and (ii) include the exchange of security keys between Bluetooth compliant devices (such as the communication module and external device in Hendry). Ex. 1013 at [0004], [0034]; Ex. 1014 at 57-61 (explaining Bluetooth SSP's security key exchange).⁵ For example, Bell (filed June 5, 2008 and published December 31, 2009) explains:

Version 2.1 of the Bluetooth specification introduced Secure Simple Pairing. Secure Simple Pairing is based on each of the two Bluetooth compliant devices having a public key and a private key. The private keys are generally not transmitted from either device and are used for encrypting data sent to the other device. **The public keys are transmitted during the pairing process. A public key may be used to authoritatively verify that a device transmitting the public key is a trusted device by decrypting the encrypted data sent by the device.** The encrypted data may only be decrypted using the public key of the device if the corresponding private key was used to encrypt the data.

Ex. 1013 at [0004] (emphasis added). The Bluetooth v2.1 specification (Exhibit 1024) similarly explains the SSP process, including the exchange of public keys, for example, as shown in Figure 5.1, reproduced below. Ex. 1014 at 61.

⁵ Pages 57-61 are found in Part A, Section 5 of the Bluetooth specification. They also correspond to the exhibit numbered pages 131-135 (in the lower right hand corner of Exhibit 1014).

5.4.5 Association Model Overview

The following diagram shows Secure Simple Pairing from the point of view of the technology used for discovery and then the different association possibilities.

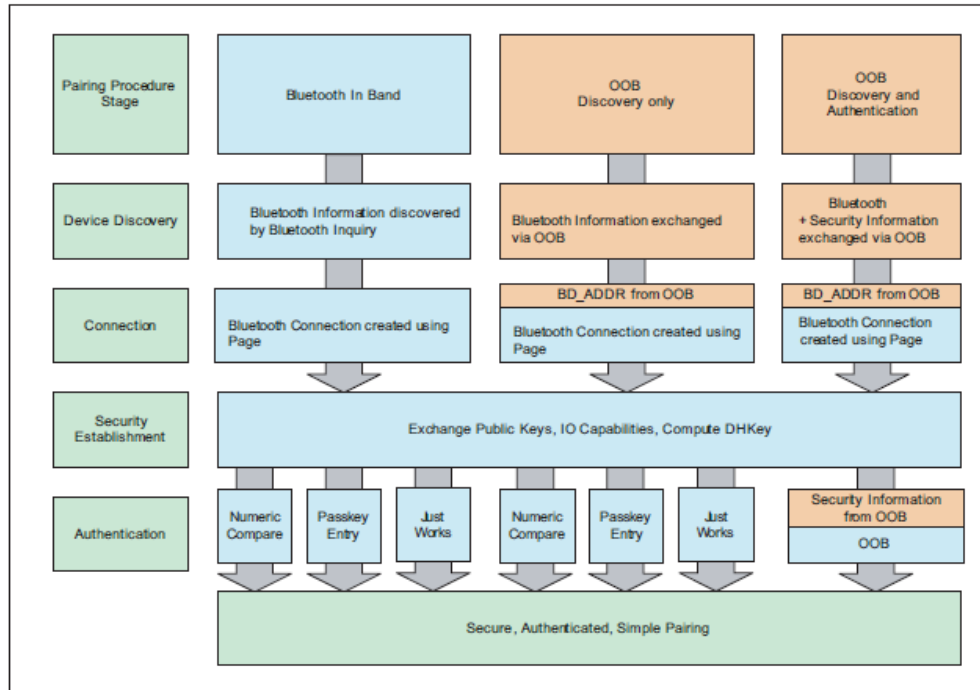


Figure 5.1: Secure Simple Pairing Association Models

Ex. 1014 at FIG. 5.1.

195. Hendry further explains the process in paragraph [0019] including a security key exchange:

As will be described, the user settings system 102 uses a request from an external device 100 to establish the communications link to determine an identity of the user or the device. In essence, the user settings system 102 piggybacks the request to establish a communications link into a request to reinstate the personal settings of the user associated with the external device 100. **In the embodiment depicted in FIG. 2, the communications link receives the request and queries the communications module data store 106 with the device identifier. The**

communications module data store 106 returns the key. The communications module 104 checks the stored key with the key transmitted by the external device 100 during the request to establish a communications link. If the communications module 104 determines that the keys match, the external device 100 is authenticated.

Ex. 1005 at [0019] (emphasis added).

196. As I explained above for limitation 1[c-2], Hendry also discloses that the authentication and verification processes that result in successful authentication and verification result in access to the corresponding stored user profile. For example, during the authentication and verification processes, Hendry discloses that (i) “[t]he request will include the key of the external device 100 and a device identifier,” (ii) “[t]he communications module 104 will receive the request and verify and/or authenticate the external device 100,” and (iii) “[o]nce verified and/or authenticated, the communications module 104 will establish a communications link between the external device 100 and the communications module 104.” Ex. 1005 at [0018]. And, as I explained above for limitation 1[c-2], successful authentication and verification results in access to the corresponding stored user profile. Ex. 1005 at [0017]-[0021], [0027]-[0028], [0031].

3. Claim 7

“The system of claim 1, wherein the verification process includes at least one of biometric recognition, gesture recognition, facial recognition, or identification of a mobile device.”

197. As I explained above, Hendry renders claim 1 obvious. Hendry also renders claim 7 obvious for the same reasons as claims 1 and 6 (*e.g.*, device identifier of a mobile device). For example, Hendry discloses “a device identifier” of an external device is used for a verification process, which device may be a “Bluetooth® enabled mobile telephone” (*i.e.*, the claimed “*identification of a mobile device*”). Ex. 1005 at [0015], [0017]-[0018].

4. Claim 8

“The system of claim 1, wherein the authentication process includes an exchange of security keys between the vehicle and a mobile device.”

198. As I explained above, Hendry renders claim 1 obvious. Hendry also renders claim 8 obvious for the same reasons as claims 1 and 6. For example, as I explained above regarding limitation 1[c-2] in claim 1 and in claim 6, Hendry discloses security key exchange between communication module 104 of the vehicle and external device 100 (*e.g.*, a “Bluetooth® enabled mobile telephone”) using Bluetooth v2.1’s SSP.

5. Claims 11 and 16-18

199. As to method claims 11 and 16-18, as I explained in Section VI.C above, they correspond to system claims 1 and 6-8. Accordingly, Hendry renders claims 11 and 16-18 obvious for the same reasons as it renders claims 1 and 6-8 obvious, as I discussed in the prior sections.

C. Ground 3: Hendry (Ex. 1005) in view of Poulsen (Ex. 1006) renders claims 2-7 and 12-17 obvious.

200. In my opinion, Hendry in view of Poulsen renders claims 2-7 and 12-17 obvious. I first provide an overview of a POSITA's motivation to combine the references, and why a POSITA would have had no technical difficulty and expected it to work. I then explain how the references render the claims obvious.

1. Motivation to Combine and Reasonable Expectation of Success

201. A POSITA would have been motivated to and had a reasonable expectation of success in combining the references—in fact, a high expectation—for example, in applying Poulsen's disclosure of creating, updating, sharing, and reconciling user profiles across multiple vehicles with Hendry's system and method for managing and reinstating user profiles in a vehicle.

202. As an initial matter, Hendry and Poulsen are in the same field as each other and the '243 patent and its claims (vehicular data management including, *e.g.*, user profile management including for vehicle settings). Ex. 1005 at Abstract,

[0001]-[0006]; Ex. 1006 at Abstract, [0002]-[0006]; Ex. 1001 at Abstract. This is further evidenced by my summary of these references in Sections VI.A, IX.B.1, and IX.B.2 above.

203. Consistent with my explanations in Sections IX.B.1 and IX.B.2 above, a POSITA would have known of, and naturally looked to, their complementary teachings when constructing a system and method for managing user profiles for vehicle settings (including, *e.g.*, creating, applying, retrieving, using and updating user profiles for vehicle settings and enabling the profiles to be shared across vehicles). Among other things, as I summarized in Sections IX.B.1 and IX.B.2 above, both Hendry and Poulsen disclose systems that update and store vehicle profile settings, where vehicles and external devices transmit data and communicate with one another. For example, in Hendry, its system updates and stores user profile settings within vehicle memory, and the vehicle system communicates with an external device (such as a mobile phone). Similarly, in Poulsen, its system likewise updates and stores user profile settings within memory (such as vehicle memory) and communicates with, and transmitting data (including the user profile settings) to an external location (such as a remote database, file system, etc.).

204. Hendry and Poulsen are also directed to the same problem: improved system and methods for increased user convenience and ease for creating, saving, updating, and restoring user preferences including for vehicle settings—like the

'243 patent. Ex. 1005 at Abstract, [0001]-[0006]; Ex. 1006 at Abstract, [0002]-[0006], [0086]-[0087]; Ex. 1001 at Abstract, 3:20-64. This is further evidenced by my summary of these references in Sections VI.A, IX.B.1, and IX.B.2 above.

205. As I explain below and as evidenced by the state of the art, a POSITA would also have been motivated to transmit and save profiles to an external location (such as to a server, mobile device, database, etc.) for various purposes (including, *e.g.*, as a back-up in the event that the local vehicle copy is deleted or corrupted; so that the profile can be remotely updated and stored for future use by a user while not located within the vehicle; and so that the profile can be shared with, and applied to, other vehicles that the user may own, lease, rent or otherwise use, thereby eliminating or minimizing the need for the user to manually set preferences and settings each time the user uses a different vehicle). Ex. 1007 at 1:11-56; Ex. 1009 at 1:15-40, 6:13-34, 7:45-67, 12:13-30, 13:15-31; Ex. 1006 at [0037]-[0038], [0042], [0086]-[0087]; Ex. 1015 at Abstract, 1:24-2:19, 2:52; Ex. 1016 at [0005], [0014].

206. For example, as I explained in Section IX.B.3 above, Rovik discloses the desirability of enabling adjustments to vehicle settings to be automatically applied to different vehicles including transferring profiles between vehicles via servers. As a further example, Rovik explains the advantages of transferring and applying settings when users use different vehicles:

Vehicles often include components which can be adjusted by a user of the vehicle. Such adjustable components can include adjustable seats and mirrors. In addition, some vehicles can store position settings for such adjustable components as a group of position settings for a particular user of the vehicle. In such vehicles, the user can automatically adjust the adjustable components in accordance with their position settings by selecting the group of position settings.

One limitation of the foregoing automatic adjustment is that the settings are only available in one vehicle. If a user drives a different vehicle, they must adjust the settings for many of the adjustable components. In addition, if the different vehicle is unfamiliar to the driver, such as a rental car that is a different make or model from the user's usual vehicle, the user will likely spend more time searching for their preferred settings. In view of these problems, one aspect of the present disclosure involves storing user settings at a server remote from a vehicle so that the user settings can be transmitted to different vehicles for the user.

In one embodiment, a user of a vehicle is identified with a user key associated with the user. The user key and a vehicle identifier associated with the vehicle are transmitted to a server remote from the vehicle. In turn, at least one user setting is received from the remote server. The at least one user setting relates to the user key, the vehicle identifier, and a position of at least one component of the vehicle. A vehicle system setting stored in a memory of the vehicle is updated with the at least one user setting. When the vehicle system setting does not correspond with the at least one user setting, the position of the at least one component is adjusted based on the at least one user setting. **By receiving the at least one user setting from the remote server, it is ordinarily possible to automatically adjust positions of components in different vehicles based on the at least one user setting.**

According to a further embodiment, an input is accepted from the user to adjust the position of the at least one component and

the vehicle system setting is changed in accordance with the accepted input. The changed vehicle system setting is transmitted to the remote server so as to update the at least one user setting with the changed vehicle system setting. **This arrangement ordinarily allows for the adjustment of positions of components in different vehicles based on changed preferences of the user.**

Ex. 1007 at 1:11-56 (emphasis added).

207. As I explained in Section IX.B.5 above, Cazanias explains the need and desirability to allow a user profile to be recalled in multiple vehicles, including those vehicles the user does not typically operate. As a further example, Cazanias discloses:

In recent years, many vehicles have utilized a driver's profile in order for a user to quickly recall settings for a number of user configurable features, such as, seat position, positions of mirrors, one or more pedal positions, radio stations presets, HVAC settings, navigation screen configuration, and the like. A user profile is stored in a memory on the vehicle, such as in an electronic control unit ("ECU") of the vehicle, or other controller or computer on the vehicle. Many such vehicles today can store profiles for a number of different users. Each user can adjust any or all of the user configurable features of the particular vehicle to the user's desired settings, and save these setting to the memory of the vehicle as the user's own user profile. Therefore, if multiple users regularly operate the vehicle, such as a husband and wife, each user may store a user profile on the vehicle, and quickly restore all of their settings when they get in the vehicle by recalling their own user profile. However, if a user gets into a different vehicle, such as a rental car, they have to again adjust every user configurable feature to a desired position. This can be a time consuming exercise, and may be further complicated in a vehicle the user is not accustomed to driving, such as a rental car.

Hence a need exists for a system to allow a user profile to be recalled in multiple vehicles, even a vehicle the user does not typically operate, or a different type of vehicle from what the user typically operates.

Ex. 1009 at 1:15-40 (emphasis added); *see also* Ex. 1009 at 6:13-34, 7:45-67, 12:13-30, 13:15-31.

208. As another example, as I explained in Section IX.B.2 above, Poulsen discloses storing user profiles, including updates or changes, at a vehicle and external locations for user convenience and to save time when applying user profiles to a different vehicle. As a further example, Poulsen discloses that “[t]he use of profiles is **a convenient way to save time** in performing various types of tasks.” Ex. 1006 at [0002] (emphasis added); *see also* Ex. 1006 at [0037]-[0038], [0042], [0086]-[0087]. As another example, Poulsen discloses that its profile process “will allow the user to re-create the desired environment very quickly and easily.” Ex. 1006 at [0085].

209. Penilla explains transferring and sharing user profiles across vehicles, which a POSITA would likewise have understood to be beneficial (*e.g.*, so that the user does not need to manually reset settings for a new vehicle as commonly known in the art to be advantageous):

Methods and systems are provide[d] access to cloud services over the Internet for managing a user profile of a vehicle on a cloud processing system connected to the Internet. One example method includes receiving requests to access the user profile to

define settings for one or more vehicles. The method includes receiving input to user settings at the vehicle at the cloud processing system. The method includes processing the input over time to learn behavior associated with the input to the use settings. The method includes transmitting settings to the vehicle to be automatically implemented based on the learned behavior. The method being executed by a processor. The profile can be transferred to one or more vehicles, can be set for a temporary period of time, can be set with wireless payment systems, and is accessible over the Internet to accept changes or updates.

Ex. 1015 at Abstract; *see also* Ex. 1015 at 1:24-2:19.

210. As another example, Wilkins explains the importance of centralized backup files to enable synchronization and restoration including if a local original file is corrupted (as applied here, to enable sharing and restoration of user profiles across vehicles):

Entering contact information into multiple contact management applications requires a time-consuming and redundant manual data entry process. The high costs associated with manual data entry are well-understood, and many prior art systems have been designed to address these concerns. For example, **creating an electronic backup file of a contact information database enables contact data to be automatically restored to a contact management application if the application's database becomes corrupt. Backup files also enable data from one application to be imported into another application, provided the file formats are compatible or translation from one format to another is feasible.**

Ex. 1016 at [0005] (emphasis added); *see also* Ex. 1016 at [0014] (“By providing a centralized server for synchronization solutions, the centralized server stores the

most recent copy of each record on behalf of a user—enabling the user to enjoy synchronization and backup in a single application.”).

211. The state of the art also—along with the disclosure and admissions in the '243 patent—confirms that a POSITA would have understood that it would have been a simple modification to transmit and share user profiles among devices, including vehicles and servers, mobile devices, etc., using conventional techniques such as the Internet, Bluetooth, a wireless network and the like (including, as discussed above in this section and in Sections IX.A and IX.B, to allow for the same user profile to be used across different vehicles a user may own, lease, rent, or otherwise use). Ex. 1006 at [0086]-[0087]; Ex. 1007 at 1:11-56, 3:54-4:7, 8:60-9:64, FIG. 1; Ex. 1009 at 1:15-40, 5:37-53, 6:13-34, 7:45-67, 12:13-30. This is a simple client-server operation as was well-known in the art. I note that the '243 patent relies on known, conventional components and techniques for transmitting, storing, and updating user profiles (such as known servers, memory, processors, communication networks, etc.), Ex. 1001 at 19:30-20:11, 92:66-93:67, which provides further confirmation to a POSITA that there would be no technical difficulties in doing so.

2. Claim 2

2[a] “The system of claim 1, wherein the one or more processors are to execute the machine-readable instructions to transmit the updated user profile from the vehicle to at least one of a mobile device, a cloud server, a remote server, or another vehicle,”

212. Hendry in view of Poulsen discloses, and it would have been obvious to include as part of Hendry to enable remote user-profile storage and transfer of user profiles among vehicles, “*wherein the one or more processors are to execute the machine-readable instructions to transmit the updated user profile from the vehicle to at least one of a mobile device, a cloud server, a remote server, or another vehicle.*”

213. I note that the claims include “one or more processors...” for performing the claimed functions. In other words, different processors (or a combination thereof) can perform the various claimed functions. So, for example, a different processor(s) can perform the functions in claim 2 than the processor(s) that performed the claim 1 functions. I also note that Patent Owner’s infringement contentions make the same assertion. Ex. 1025 at 1 n.1, 10 n.23.

214. Figure 15 of Poulsen, reproduced below, “illustrates an embodiment of a process 1500 for creating a new profile for a vehicle based on driver preferences.” Ex. 1006 at [0085]. “This type of profile can apply to any vehicle, including automobiles, trucks, buses, motorcycles, airplanes, etc.” and “can store

the entire environment, including (if applicable) climate control, seat positions and settings, audio system settings and presets, engine performance settings, navigation system settings, mirror settings, etc. This will allow the user to re-create the desired environment very quickly and easily.” Ex. 1006 at [0085]. As shown in Figure 15, and described in Poulsen, Poulsen discloses creating, storing, transmitting, and reconciling a user profile for vehicle settings. Ex. 1006 at [0085]-[0087], [0037]-[0038].

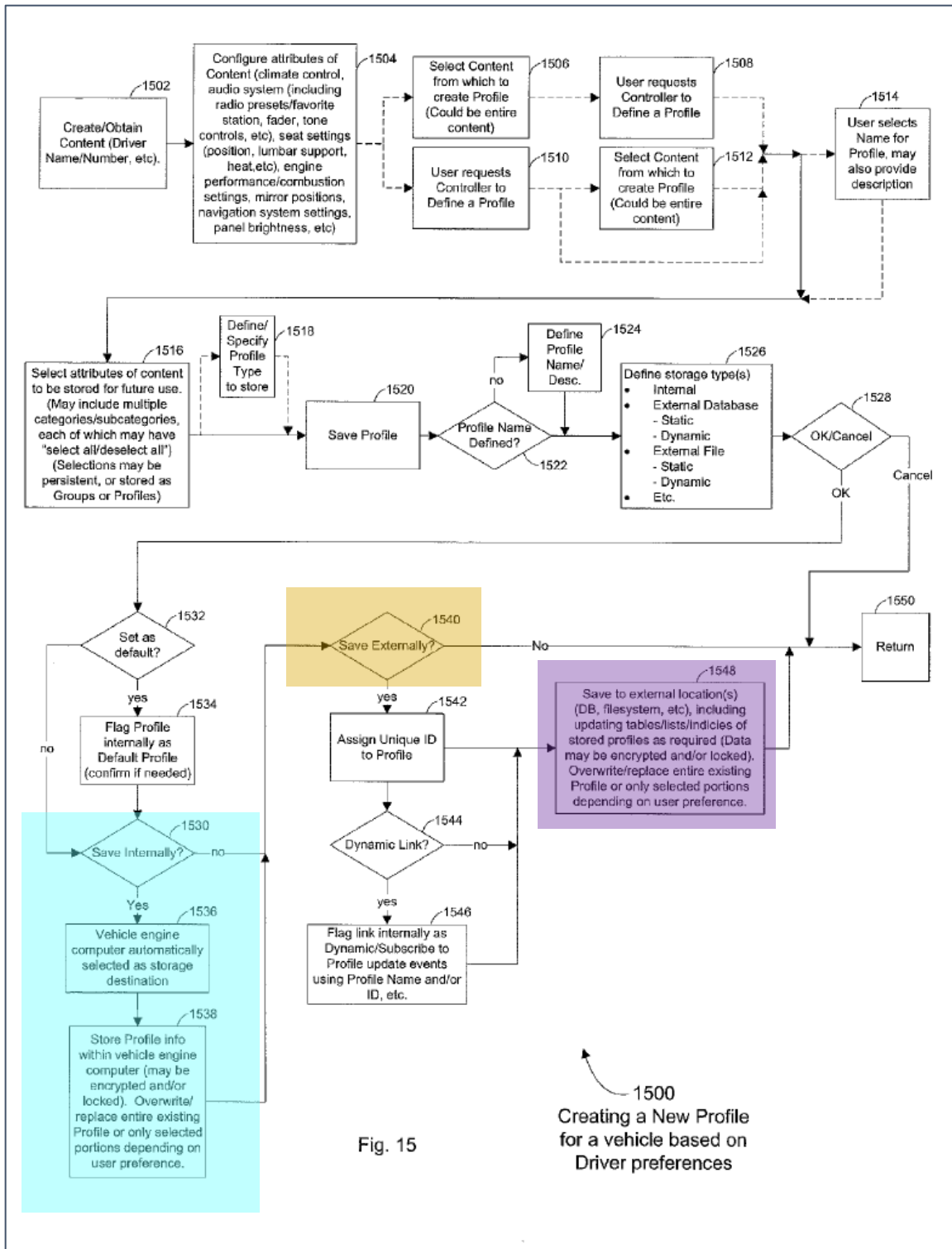


Fig. 15

1500
Creating a New Profile
for a vehicle based on
Driver preferences

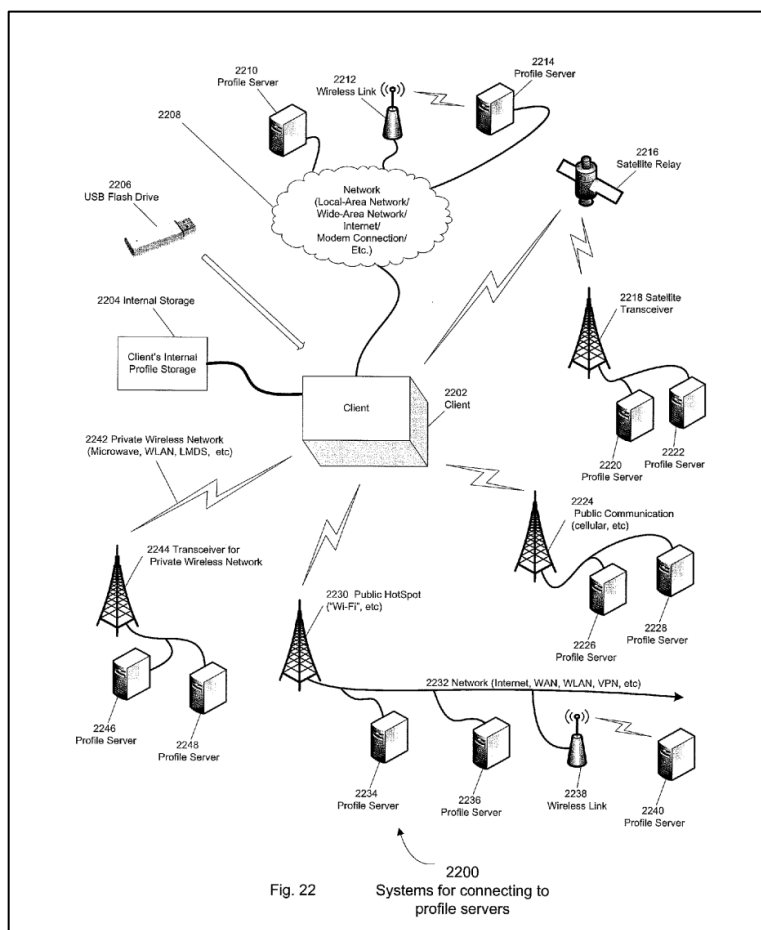
Ex. 1006 at FIG. 15.

215. Poulsen discloses a process to “save internally” (e.g., at a vehicle) a profile (**step 1530**). Ex. 1006 at [0086], [0045]. Poulsen further discloses that profiles can be accessed and updated via an interface “in the vehicle” and “can be stored on the hard drive or other non-volatile memory in the automobile computer.” Ex. 1006 at [0042]. If the answer is “Yes” at step 1530, “the process proceeds to **step 1536**, where the system automatically selects the vehicle engine computer as the storage destination,” which Poulsen explains means “the profile attributes are stored as part of the vehicle’s settings.” Ex. 1006 at [0086]. In other words, like in Hendry, Poulsen discloses that the user profiles are saved at the vehicle.

216. “The process proceeds to **step 1538** where the system stores the profile information within the vehicle engine computer.” Ex. 1006 at [0086]. Poulsen explains that, if the “profile has been previously stored... the user may be prompted to confirm that the profile should be changed or updated...” (*i.e.*, an updated profile may be saved at the vehicle). Ex. 1006 at [0086].

217. Poulsen’s process proceeds to **step 1540** “to determine if the profile should be stored externally.” Ex. 1006 at [0086]. If the answer is “Yes,” the process will ultimately save the updated profile at **step 1548** “to an external location such as a database, file system, etc.” Ex. 1006 at [0087]. Poulsen likewise discloses similar processes whereby the profile is saved externally. Ex. 1006 at [0045]-[0047], [0070-0071], FIGs. 1A, 10.

218. Poulsen discloses, in Figure 22, reproduced below, “a schematic diagram illustrating the systems 2200 for connecting a client to access and store profile data,” where the client “could be any type of client such as a car, boat, other vehicle, desktop or mobile computer, PDA, mobile phone, etc., which is otherwise referred to herein as a client processing unit, configured for using profiles, may be connected to one or more sources of profiles.” Ex. 1006 at [0105]. Clients and profile servers send, receive, and store the profiles. Ex. 1006 at [0105]-[0110].



Ex. 1006 at FIG. 22.

219. Accordingly, a POSITA would have understood, or at least found obvious, that the external locations disclosed in Poulsen would encompass various remote devices, such as a remote server (*e.g.*, the remote “profile server” in Poulsen that sends/receives profiles to/from a “client” such as a “car, boat, other vehicle,” etc.). Ex. 1006 at [0105]-[0110], FIG. 22; Ex. 1009 at Abstract, 1:5-2:54, 12:13-30. This is consistent with the ’243 patent’s disclosure of a “server”: “server 228 can include a computer processor and memory and be similar to any computing system as understood to one of skill in the art.” Ex. 1001 at 19:58-60.

220. As another example, a POSITA would have similarly understood, or at least found obvious, that such external locations would include other devices such as a mobile device (*e.g.*, external device 100 in Hendry), thereby likewise enabling transfer of the profile to other vehicles. Ex. 1005 at [0015]; Ex. 1001, 10:59-11:3 (’243 patent explaining “mobile device”).

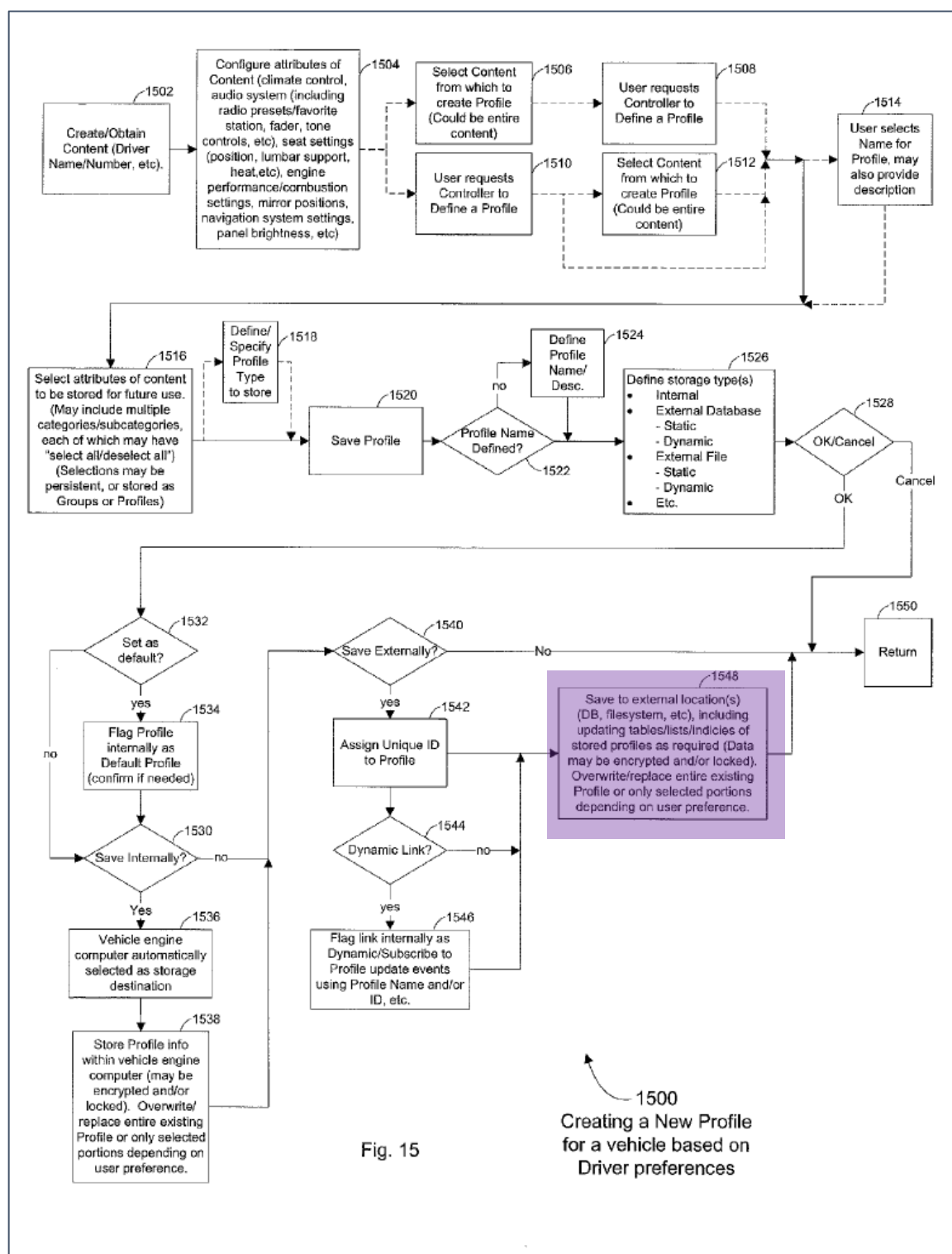
221. A POSITA would also have understood that saving to an external location would involve transmitting the profile from one location (*e.g.*, vehicle) to the external source, consistent with Poulsen’s disclosure (and as was common in the art) to transmit the profile between a client and a profile server or mobile device. Ex. 1006 at [0107]-[0110], FIG. 22; Ex. 1009 at Abstract, 1:5-40, 2:30-40, 6:14-18, 12:13-30, 13:15-30, 14:62-15:10, FIGs. 2, 4 (steps 240, 250).

222. Lastly, Poulsen discloses a “controller” (also referred to as a “processor”) to perform the various functions. Ex. 1006 at [0036]-[0037], [0041], [0044], [0069], [0101]. A POSITA would have understood that the disclosed controller/processor would execute machine-readable instructions to perform the various functions, consistent with typical processors known in the state of the art (including as explained in Hendry and elsewhere) and the ’243 patent’s admissions regarding using off-the-shelf, conventional processors, as I explained above in Sections VI.A and IX. *See also* Ex. 1005 at [0036]-[0038]; Ex. 1001 at 92:67-93:67, 11:42-12:8, 21:64-22:10.

2[b] “wherein a local user profile including one or more local preferences is stored at the at least one of the mobile device, the cloud server, the remote server, or the other vehicle prior to transmission of the updated user profile to the at least one of the mobile device, the cloud server, the remote server, or the other vehicle.”

223. Hendry in view of Poulsen discloses, and it would have been obvious to include as part of Hendry, “*wherein a local user profile including one or more local preferences is stored at the at least one of the mobile device, the cloud server, the remote server, or the other vehicle prior to transmission of the updated user profile to the at least one of the mobile device, the cloud server, the remote server, or the other vehicle.*”

224. In Figure 15, reproduced below, Poulsen discloses “[a]t **step 1548**, the profile is saved to an external location such as a database, file system, etc.” Ex. 1006 at [0087]. Poulsen further discloses an “existing profile” at the “external location” and that “[i]f the selected profile has been previously stored in the external location, the user may be prompted to confirm that the profile information should be changed or updated, as well as to determine whether the profile should be completely overwritten or if only the attributes selected for storage should be updated....” (*i.e.*, the external location—such as the remote server or mobile device—already has a stored “*local user profile including one or more local preferences*” as claimed). Ex. 1006 at [0087]; *see also* Ex. 1006 at [0046], FIG. 1A (step 148), FIG. 10.



3. Claim 3

“The system of claim 2, wherein the one or more processors are to execute the machine-readable instructions to determine whether any conflicts exist between the updated preferences of the updated user profile and the local preferences of the local user profile.”

225. Hendry in view of Poulsen discloses, and it would have been obvious to include as part of Hendry, for basically the same reasons as claim 2 above, *“wherein the one or more processors are to execute the machine-readable instructions to determine whether any conflicts exist between the updated preferences of the updated user profile and the local preferences of the local user profile.”*

226. As I explained for claim 2 above, Poulsen discloses, in the context of Figure 15 (which I reproduced above for claim 2) determining conflicts/updates between settings/preferences of the transmitted profile and the previously stored profile at the external location:

At step 1548, the profile is saved to an external location such as a database, file system, etc. **If the selected profile has previously been stored in the external location**, the user may be prompted to confirm that the profile information should be changed or updated, as well as to **determine** whether the profile should be completely overwritten or if only the attributes selected for storage should be updated (allowing the user to easily update a small number of settings without having to redefine the entire profile). Tables, lists and indices are updated from the stored profile as required. As with internal storage, the

profile information may be encrypted and/or locked (such as with a password) to prevent unauthorized or unintentional modification and/or usage. The process then ends at step 1550.

Ex. 1006 at [0087] (emphasis added).

227. In other words, Poulsen discloses determining any changes made resulting in differences (the claimed “*conflicts*”) between the profile information (such as attributes/settings) for the updated profile transmitted to the external location (the claimed “*updated preferences of the updated user profile*”) and the profile information for the “previously stored” “selected profile” (the claimed “*local preferences of the local user profile*”).

228. A POSITA would also have understood the function of claim 3 would be performed by the one or more processors executing the machine-readable instructions, for the same reasons explained regarding claims 1-2.

4. Claim 4

“The system of claim 3, wherein, in response to determining that one or more conflicts exist between the updated preferences and the local preferences, the one or more processors are to execute the machine-readable instructions to overwrite conflicted ones of the local preferences with corresponding conflicting ones of the updated preferences.”

229. Hendry in view of Poulsen discloses, and it would have been obvious to include as part of Hendry, for basically the same reasons as claims 2 and 3 above,

“wherein, in response to determining that one or more conflicts exist between the updated preferences and the local preferences, the one or more processors are to execute the machine-readable instructions to overwrite conflicted ones of the local preferences with corresponding conflicting ones of the updated preferences.”

230. As I explained for claims 2 and 3 above, Poulsen discloses, in the context of Figure 15 (which I reproduced above for claim 2), determining conflicts/updates between settings/preferences of the transmitted profile and the previously stored profile at the external location and overwriting of conflicting ones with the updated ones:

At step 1548, the profile is saved to an external location such as a database, file system, etc. **If the selected profile has previously been stored in the external location**, the user may be prompted to confirm that the profile information should be changed or updated, as well as to **determine** whether the profile should be completely **overwritten** or if only the attributes selected for storage should be **updated** (allowing the user to easily update a small number of settings without having to redefine the entire profile). Tables, lists and indices are updated from the stored profile as required. As with internal storage, the profile information may be encrypted and/or locked (such as with a password) to prevent unauthorized or unintentional modification and/or usage. The process then ends at step 1550.

Ex. 1006 at [0087] (emphasis added).

231. In other words, Poulsen discloses to overwrite entirely or selectively conflicting preferences/settings (such as those that were updated).

232. A POSITA would also have understood the function of claim 4 would be performed by the one or more processors executing the machine-readable instructions, for the same reasons explained regarding claims 1-2.

5. Claim 5

“The system of claim 3, wherein, in response to determining that one or more conflicts exist between the updated preferences and the local preferences, the one or more processors are to execute the machine-readable instructions to perform a reconciliation process that allows selective determination of which conflicted ones of the local preferences should be overwritten by corresponding conflicting ones of the updated preferences.”

233. Hendry in view of Poulsen discloses, and it would have been obvious to include as part of Hendry, for basically the same reasons as claims 2-4 above, *“wherein, in response to determining that one or more conflicts exist between the updated preferences and the local preferences, the one or more processors are to execute the machine-readable instructions to perform a reconciliation process that allows selective determination of which conflicted ones of the local preferences should be overwritten by corresponding conflicting ones of the updated preferences.”*

234. As I explained for claims 2-4 above, Poulsen discloses, in the context of Figure 15 (which I reproduced above for claim 2), determining conflicts/updates between settings/preferences of the transmitted profile and the previously stored

profile at the external location and determining whether to selective overwrite conflicting ones (thereby reconciling the profiles):

At step 1548, the profile is saved to an external location such as a database, file system, etc. **If the selected profile has previously been stored in the external location**, the user may be prompted to confirm that the profile information should be changed or updated, as well as to **determine** whether the profile should be completely **overwritten** or **if only the attributes selected for storage should be updated** (allowing the user to easily update a small number of settings without having to redefine the entire profile). Tables, lists and indices are updated from the stored profile as required. As with internal storage, the profile information may be encrypted and/or locked (such as with a password) to prevent unauthorized or unintentional modification and/or usage. The process then ends at step 1550.

Ex. 1006 at [0087] (emphasis added).

235. In other words, Poulsen discloses a reconciliation process that enables selective determination of overwriting particular conflicting preferences/settings.

236. A POSITA would also have understood the function of claim 5 would be performed by the one or more processors executing the machine-readable instructions, for the same reasons explained regarding claims 1-2.

6. **Claim 6**

“The system of claim 1, wherein the one or more processors are to perform both the verification process and the authentication process, and wherein the one or more processors are to determine that the request is authorized to access the user profile in response to successfully verifying the request via the verification process and successfully authenticating the request via the authentication process.”

237. As I explained above in Section X.B.2, Hendry renders claim 6 obvious. Hendry in view of Poulsen also renders claim 6 obvious.

238. Poulsen discloses a multi-factor authentication and verification process employing various known processes used to prevent unauthorized access to a user profile: “the stored profile can be encrypted and/or locked (such as with a password) when stored to prevent unauthorized or unintentional changes and/or usage. This security may include **one or more authentication methods and technologies** such as biometric identification (retinal scan, fingerprint, voice authentication, etc.), SmartCards, USB keys, etc.” Ex. 1006 at [0045] (emphasis added). “One or more” indicates to a POSITA to use multiple processes.

239. A POSITA would have understood, and found it obvious, to apply various authentication and verification processes—including those known to be used in a variety of applications including vehicles (biometrics, passwords, security keys, etc. as known in the art and disclosed in Hendry, Poulsen and other state of

the art)—to beneficially increase security and decrease the likelihood of unauthorized access if one method becomes compromised (including the benefit of using “fingerprints” specifically due to them being “unique”). A POSITA would have understood, and thought to apply, various combinations of verification/authentication processes, including various known user identification and device identification techniques to ensure that the user and/or device were authorized and not compromised or fraudulent. For example, as I explained in Section IX.B.4 above, Singh discloses the benefit of using both passwords and fingerprints such that if a password is improperly obtained, access to the vehicle and profile will be denied unless the fingerprint is verified. Ex. 1008 at [0002]-[0003], [0022]-[0023], [0038]-[0039], [0066]-[0067]. Rovik discloses “several different ways” to identify user at vehicle including biometrics, mobile device key, etc. Ex. 1007 at 9:27-64, 10:35-57. Lortz similarly discloses various methods, including biometrics and keys. Ex. 1011 at [0024]-[0025], [0035], [0042], [0050]-[0051]. Addepalli discloses a multi-factor process including biometrics, signatures, certificates, passwords, etc. to provide increased security depending on application/access. Ex. 1017 at 14:48-15:3, 17:57-18:8. And Tadayon discloses various processes including biometrics and public/private keys. Ex. 1024 at [0122]-[0123]. This is just like the ’243 Patent, which treats authentication and verification

techniques as effectively interchangeable and relies on techniques well-known in the art.

7. Claim 7

“The system of claim 1, wherein the verification process includes at least one of biometric recognition, gesture recognition, facial recognition, or identification of a mobile device.”

240. As I explained above in Section X.B.3, Hendry renders claim 7 obvious. Hendry in view of Poulsen also renders claim 7 obvious for the same reasons as claim 6 (for example, biometrics such as fingerprints).

8. Claims 12-17

241. As to method claims 12-17, as I explained in Section VI.C above, they correspond to system claims 2-7. Accordingly, Hendry in view of Poulsen renders claims 12-17 obvious for the same reasons as claims 2-7, as I discussed in the prior sections.

D. Ground 4: Hendry (Ex. 1005) in view of Rovik (Ex. 1007) renders claims 9, 10, 19, and 20 obvious.

242. In my opinion, Hendry in view of Rovik renders claims 9, 10, 19, and 20 obvious. I first provide an overview of a POSITA's motivation to combine the references, and why a POSITA would have had no technical difficulty and expected it to work. I then explain how the references render the claims obvious.

1. Motivation to Combine and Reasonable Expectation of Success

243. A POSITA would have been motivated to and had a reasonable expectation of success in combining the references—in fact, a high expectation—for example, in applying, Rovik’s disclosure of sharing of user settings across multiple vehicles using common settings with Hendry’s system and method for managing and reinstating user profiles in a vehicle.

244. As an initial matter, Hendry and Rovik are in the same field as each other and the ’243 patent and its claims (vehicular data management including, *e.g.*, user profile management including for vehicle settings). Ex. 1005 at Abstract, [0001]-[0006]; Ex. 1007 at Abstract, 1:6-2:29; Ex. 1001 at Abstract. This is further evidenced by my summary of these references in Sections VI.A, IX.B.1, and IX.B.3 above.

245. Consistent with my explanations in Sections IX.B.1 and IX.B.3 above, a POSITA would have known of, and naturally looked to, their complementary teachings when constructing a system and method for managing user profiles for vehicle settings (including, *e.g.*, creating, applying, retrieving, using and updating user profiles). Among other things, as I summarized in Sections IX.B.1 and IX.B.3 above, both Hendry and Rovik disclose systems that update and store vehicle profile settings, where vehicles and external devices transmit data and communicate with

one another. For example, in Hendry, its system updates and stores user profile settings within vehicle memory, and the vehicle system communicates with an external device (such as a mobile phone). Similarly, Rovik discloses a system whereby data exchange (such as user profile settings) occurs between a vehicle and an external location (such as a remote server).

246. Hendry and Rovik are also directed to the same problem: improved system and methods for increased user convenience and ease for creating, saving, updating, and restoring vehicle settings —like the '243 patent. Ex. 1005 at Abstract, [0001]-[0006]. Ex. 1007 at Abstract, 1:6-2:29; Ex. 1001 at Abstract, 3:20-64. This is further evidenced by my summary of these references in Sections VI.A, IX.B.1, and IX.B.3 above.

247. As I explain below and as evidenced by the state of the art, a POSITA would have been motivated to apply a common database architecture (*e.g.*, in a standardized format and with common settings) to user profiles such that the profiles can be used and applied across vehicles (*e.g.*, so that settings can be carried over from vehicle-to-vehicle for different makes and models, as well as vehicle types without requiring a user to manually reset preferences each time the user utilizes a different vehicle, such as owned, leased, rented, or borrowed). Ex. 1007 at 1:11-2:5, 3:18-31, 9:14-53, FIG. 5; Ex. 1009 at 1:15-40, 6:13-34, 7:45-67, 12:13-

30, 13:15-31; Ex. 1006 at [0037]-[0038], [0042], [0086]-[0087]; Ex. 1015 at Abstract, 1:24-2:19, 2:52.

248. For example, as I explained in Section IX.B.3 above, Rovik discloses the desirability of enabling adjustments to vehicle settings to be automatically applied to different vehicles including transferring profiles between vehicles via servers. As a further example, Rovik explains the advantages of transferring and applying settings when users use different vehicles:

Vehicles often include components which can be adjusted by a user of the vehicle. Such adjustable components can include adjustable seats and mirrors. In addition, some vehicles can store position settings for such adjustable components as a group of position settings for a particular user of the vehicle. In such vehicles, the user can automatically adjust the adjustable components in accordance with their position settings by selecting the group of position settings.

One limitation of the foregoing automatic adjustment is that the settings are only available in one vehicle. If a user drives a different vehicle, they must adjust the settings for many of the adjustable components. In addition, if the different vehicle is unfamiliar to the driver, such as a rental car that is a different make or model from the user's usual vehicle, the user will likely spend more time searching for their preferred settings. In view of these problems, one aspect of the present disclosure involves storing user settings at a server remote from a vehicle so that the user settings can be transmitted to different vehicles for the user.

In one embodiment, a user of a vehicle is identified with a user key associated with the user. The user key and a vehicle identifier associated with the vehicle are transmitted to a server remote from the vehicle. In turn, at least one user setting is received from

the remote server. The at least one user setting relates to the user key, the vehicle identifier, and a position of at least one component of the vehicle. A vehicle system setting stored in a memory of the vehicle is updated with the at least one user setting. When the vehicle system setting does not correspond with the at least one user setting, the position of the at least one component is adjusted based on the at least one user setting. **By receiving the at least one user setting from the remote server, it is ordinarily possible to automatically adjust positions of components in different vehicles based on the at least one user setting.**

According to a further embodiment, an input is accepted from the user to adjust the position of the at least one component and the vehicle system setting is changed in accordance with the accepted input. The changed vehicle system setting is transmitted to the remote server so as to update the at least one user setting with the changed vehicle system setting. **This arrangement ordinarily allows for the adjustment of positions of components in different vehicles based on changed preferences of the user.**

Ex. 1007 at 1:11-56 (emphasis added).

249. Rovik also discloses that the user profiles are intended to be applied to “vehicles of different makes and models,” Ex. 1007 at 2:1-5, as well as various “types of vehicles” such as “passenger automobiles,” “trucks”, “boats,” etc. Ex. 1007 at 3:20-31. Rovik further explains, regarding Figure 5 and as I explained in Section IX.B.3 above, to have user profiles (such as 510 and 512) that include common setting options and common organization (namely, in a template format) such that they can be used to generate user settings for different vehicles. Ex. 1007 at 9:3-51, FIG. 5 (disclosing common setting options that may be updated for a

particular user including, *e.g.*, so that “[a]s with the physical attributes ... the user preferences can also be used to generate new user settings for vehicles or vehicle types not driven by the user before”).

250. Other examples confirm these concepts. For example, as I explained in Section IX.B.2 above, Poulsen discloses storing user profiles, including updates or changes, at vehicles and external locations for user convenience and to save time. As a further example, Poulsen discloses that “[t]he use of profiles is a **convenient way to save time** in performing various types of tasks.” Ex. 1006 at [0002] (emphasis added); *see also* Ex. 1006 at [0037]-[0038], [0042], [0086]-[0087]. Poulsen also discloses that its profile process “will allow the user to re-create the desired environment very quickly and easily.” Ex. 1006 at [0085].

251. As I explained in Section IX.B.5 above, Cazanias explains the need and desirability to allow a user profile to be recalled in multiple vehicles, including those vehicles the user does not typically operate. As a further example, Cazanias discloses:

In recent years, many vehicles have utilized a driver's profile in order for a user to quickly recall settings for a number of user configurable features, such as, seat position, positions of mirrors, one or more pedal positions, radio stations presets, HVAC settings, navigation screen configuration, and the like. A user profile is stored in a memory on the vehicle, such as in an electronic control unit (“ECU”) of the vehicle, or other controller or computer on the vehicle. Many such vehicles today can store profiles for a number of different users. Each user can adjust any

or all of the user configurable features of the particular vehicle to the user's desired settings, and save these setting to the memory of the vehicle as the user's own user profile. Therefore, if multiple users regularly operate the vehicle, such as a husband and wife, each user may store a user profile on the vehicle, and quickly restore all of their settings when they get in the vehicle by recalling their own user profile. However, if a user gets into a different vehicle, such as a rental car, they have to again adjust every user configurable feature to a desired position. This can be a time consuming exercise, and may be further complicated in a vehicle the user is not accustomed to driving, such as a rental car.

Hence a need exists for a system to allow a user profile to be recalled in multiple vehicles, even a vehicle the user does not typically operate, or a different type of vehicle from what the user typically operates.

Ex. 1009 at 1:15-40 (emphasis added); *see also* Ex. 1009 at 6:13-34, 7:45-67, 12:13-30, 13:15-31

252. Lastly, Penilla explains transferring and sharing user profiles across vehicles, which a POSITA would likewise have understood to be beneficial (*e.g.*, so that the user does not need to manually reset settings for new vehicles as commonly known in the art to be advantageous):

Methods and systems are provide[d] access to cloud services over the Internet for managing a user profile of a vehicle on a cloud processing system connected to the Internet. One example method includes receiving requests to access the user profile to define settings for one or more vehicles. The method includes receiving input to user settings at the vehicle at the cloud processing system. The method includes processing the input over time to learn behavior associated with the input to the use settings. The method includes transmitting settings to the vehicle to be automatically implemented based on the learned behavior.

The method being executed by a processor. The profile can be transferred to one or more vehicles, can be set for a temporary period of time, can be set with wireless payment systems, and is accessible over the Internet to accept changes or updates.

Ex. 1015 at Abstract; *see also* Ex. 1015 at 1:24-2:19.

253. The state of the art also—along with the disclosure and admissions in the '243 patent—confirms that a POSITA would have understood that it would have been a simple modification to transmit and share user profiles (including with a common data structure) among devices, such as vehicles and servers, mobile devices, etc., using conventional techniques such as the Internet, Bluetooth, a wireless network and the like (including, as discussed above in this section and in Sections IX.A and IX.B, to allow for the same user profile to be used across different vehicles a user may own, lease, rent, or otherwise use). Ex. 1006 at [0086]-[0087]; Ex. 1007 at 1:11-56, 3:54-4:7, 8:60-9:64, FIG. 1; Ex. 1009 at 1:15-40, 5:37-53, 6:13-34, 7:45-67, 12:13-30. This again is a simple client-server operation that was well-known in the art using typical database structures. I again also note that the '243 patent relies on known, conventional components and techniques for transmitting, storing, and updating user profiles (such as known servers, memory, processors, communication networks, etc.), Ex. 1001 at 19:30-20:11, 92:66-93:67, which provides further confirmation to a POSITA that there would be no technical difficulties in doing so.

2. Claim 9

“The system of claim 1, wherein the user profile is based on a template for the one or more preferences, and the updated user profile is created relative to the template.”

254. Hendry in view of Rovik discloses, and it would have been obvious to include as part of Hendry, *“wherein the user profile is based on a template for the one or more preferences, and the updated user profile is created relative to the template.”*

255. As I explained in Section IX.B.3 above, Rovik discloses “example user profiles 510 and 512” stored in a hard disk drive (HDD) in Figure 5, reproduced below, that include **common setting options and common organization**, such as “Preferred Music Genre,” “Default Volume Level,” among other common attributes and preferences, which can be updated for particular users (such as user 10 for profile 510 and user 12 for profile 512). Ex. 1007 at 9:3-54; *see also* Ex. 1007 at 7:8-37.

User Profile 510		User Profile 512	
User Key	CB1906X	User Key	WS2005Y
User Eye Point	1.1	User Eye Point	-0.8
User Hip Point	2.4	User Hip Point	-0.9
Recline Value	3.6	Recline Value	4.1
Lumbar Value	5.0	Lumbar Value	0.0
Mirror 1 Value	0.82	Mirror 1 Value	0.74
Mirror 2 Value	0.71	Mirror 2 Value	0.76
Arm Length	2.1	Arm Length	1.2
Preferred Music Genre	Classic Rock	Preferred Music Genre	Hip Hop
Default Volume Level	4.2	Default Volume Level	4.9
Scheduled Location	L1:0800 M-F	Scheduled Location	—
Background Image	—	Background Image	sox.jpg
Language	English	Language	English
Units	English	Units	English
Location 1	Home: 1060 W. Addison	Location 1	Home: 333 W. 35 th St.
Location 2	Work: 600 Anton	Mobile Device 1	Bob's Phone
Mobile Device 1	John's Phone	Mobile Device 2	Bob's Laptop
Temperature Setpoint	73° F	Temperature Setpoint	71° F

FIG. 5

Ex. 1007 at FIG. 5.

256. Rovik also discloses, in the context of Figure 5, that “these user preferences represent settings made by the user ... have been **standardized** by the server 400 so as to apply to a standard vehicle” (which a POSITA would have understood to indicate that they are based on a template, and as per Rovik, then updated for a particular user). Ex. 1007 at 9:37-40 (emphasis added).

257. I note that this is also consistent with Patent Owner’s infringement theory, where it asserted that a “template” is simply “a database with a consistent structure so that settings and preferences can be associated with a user profile across different devices, systems, or vehicles.” Ex. 1025 at 10.

258. Moreover, a POSITA would have understood the well-known and advantageous nature of including a datafile with consistent structure for user profiles such that—as explained in Rovik and known in the art—the profiles could readily be transferred and applied to a new vehicle or vehicle type. Ex. 1007 at 1:21-2:5, 3:20-31, 9:3-51; Ex. 1018 at Abstract, [0020]-[0021], [0046]; Ex. 1009 at 1:15-36, 3:49-67, 9:2-4; Ex. 1012 at 141. For example, beyond Rovik, Larsen explains to use a “predefined template” that “may define formatting rules, including organizational structure and content” and “define entry formatting for individual entries” which facilitates document creation and management. As another example, Cazanias explains to use common settings that are updated for each user and applied across vehicles. Ex. 1009 at 1:15-36, 3:49-67, 9:2-4. And, database structure was a well-known and common way to organize data within the database. Ex. 1012 at 141 (Microsoft Dictionary defining “database” as “[a] file composed of records, each containing fields” and a “database structure” as “[a] general description of the format of records in a database, including the number of fields, specifications regarding the types of data that can be entered into each field, and the field names used.”).

259. I note that the above is also consistent with Hendry, which includes the same user setting options that may then be personalized and stored in datastores (e.g., HVAC, seat, A/V, lighting). Ex. 1005 at [0012]-[0014], FIGs. 1, 2, 5. Hendry

explains that “[e]ach datastore stores parameters relating to the user’s personal settings,” Ex. 1005 at [0021]-[0024], FIGs. 1-2; and alternatively, a “central data store stores ... the value parameters associated with the various devices or users having preferred settings stored.” Ex. 1005 at [0033], FIG. 5. Logically, given that the datastore(s) in Hendry contain the same setting options for various users, a POSITA would have understood that they would have common organization based on a template.

260. It is also consistent with the state of the art that such user-profile databases were organized consistently with the various settings and then updated. Ex. 1020 at [0006], [0023], FIG. 2 (common updateable user settings for vehicle features); Ex. 1015 at 7:32-45 (“customiz[able] profile” for a “vehicle manufacturer” saved to a “database”); Ex. 1012 at 141 (defining “database” and “database structure”); Ex. 1009 at 13:15-30 (user profile with common settings that are adjustable). This is also just like the ’243 Patent, which explains that a “template” is simply a “starting point” and that a “profile” can be effectively any known data storage. Ex. 1001 at 14:50-55, 17:54-62, 72:35-45, 72:60-73:24.

261. Accordingly, a POSITA would have understood, or at least found obvious, that such storage in Hendry of the various parameters would be based on a template (including for the reasons explained above, as well as to enable efficient

and consistent access and reinstatement of user settings as explained in Hendry itself).

3. Claim 10

“The system of claim 9, wherein the template is a global standard template that is common among at least two vehicle manufacturers.”

262. Hendry in view of Rovik discloses, and it would have been obvious to include as part of Hendry, for basically the same reasons as claim 9, *“wherein the template is a global standard template that is common among at least two vehicle manufacturers.”*

263. As I explained above in Section X.D.2 (regarding claim 9) and Section X.C.1 (regarding motivation), Rovik discloses “example user profiles 510 and 512” stored in an HDD in Figure 5 that include common setting options and common organization that are standardized to apply to a standard vehicle. Ex. 1007 at 9:3-54. As I also explained above in Section X.C.1 (regarding motivation), Rovik discloses that its user profiles are designed to be used with a variety of different vehicle types, makes and models:

- “By matching the vehicle identifier with the at least one user setting, it is ordinarily possible to facilitate adjustment of positions of components in vehicles having different shapes and sizes, such as **vehicles of different makes and models.**” Ex. 1007 at 2:1-5 (emphasis added).

- “In addition, if the different vehicle is unfamiliar to the driver, such as a rental car that is a **different make or model** from the user's usual vehicle, the user will likely spend more time searching for their preferred settings. In view of these problems, one aspect of the present disclosure involves storing user settings at a server remote from a vehicle so that the user settings can be transmitted to **different vehicles** for the user.” Ex. 1007 at 1:25-32 (emphasis added).
- “As shown in the example of FIG. 1, vehicles 100 and 200 are the same model or vehicle type (depicted as model A) having substantially the same geometric shape and dimensions. On the other hand, the vehicle 300 is a **different model or vehicle type** (depicted as model B) having a different geometric shape and dimensions from the vehicles 100 and 200. Although the vehicles 100, 200, and 300 are depicted as passenger automobiles in FIG. 1, it will be appreciated by those of ordinary skill in the art that the present disclosure is not limited to passenger automobiles and may include **other types of vehicles such as trucks, bicycles, motorcycles, or boats.**” Ex. 10067 at 3:20-31 (emphasis added).

264. Consistent with the disclosure in Rovik and the state of the art, a POSITA would thus have understood that the user profiles (and the underlying common template) are designed to be used with a variety of vehicles and types, which would indicate to a POSITA that it would logically encompass vehicles from different manufacturers and brands. Ex. 1023 at 137-39 (disclosing importance of interoperability, standards, uniform components, and common onboard electronic specifications across shared vehicles from different automakers); Ex. 1015 at 15:52-58 (disclosing common access management system for different vehicle manufacturers whereby a “process is created so that some or all manufacturers use the same type of login/access management system”), 18:1-4 (“An automaker

database 116 can include data regarding a plurality of vehicles, including standard user interfaces, configuration interfaces, and other information necessary to provide user Bob with a custom interface for vehicle 200.”), FIG. 7 (standard user interfaces across automakers “A,” “B”, “C” and “D”); Ex. 1009 at 1:5-2:54 (common user profile for different vehicles and types). Indeed, this concept is consistent with the stated goals in Rovik to allow for the user profiles to be transmitted and used across various vehicles. For example, consistent with the rental car situation disclosed in Rovik, rental car companies typically have fleets of vehicles from different manufacturers (Toyota, Honda, Ford, GM, Volkswagen, etc.). And, thus Rovik’s teachings would logically be applied across manufacturers.

265. Consistent with and confirmed by the above, a POSITA would have understood the advantages of including such a global standard template: enabling the user profile to be successfully used across various vehicles. Ex. 1019 at [0067] (disclosing a “single universal template” which “contains all document elements” and results in a “master template [that] can be used as a market standard”); Ex. 1012 at 141 (defining database and database structured as I discussed above); Ex. 1007 at 1:23-2:29, 3:20-31, 9:3-54 (Rovik explaining profiles are to be used across different vehicles); Ex. 1009 at 1:5-44 (Cazanas explaining same, such as for rental vehicles); Ex. 1015 at 1:45-2:14 (Penilla explaining same).

266. While claim 10 is obvious for the reasons I explained above, it is all the more obvious under Patent Owner's apparent construction. I note that Patent Owner appears to take the position in its infringement contentions that two brands from the same manufacturer (Toyota and Lexus) qualify as claimed "*at least two vehicle manufacturers.*" Ex. 1025 at 10. While this is inconsistent with the '243 patent, it further confirms the obviousness of claim 10. As to the inconsistency, I note that the '243 patent describes a "Car Brand" as being from "a specific vehicle manufacturer." Ex. 1001 at 76:35-50 ("Example of the Global Standard Template"). By extension, this indicates that brands are from the same manufacturer (which is true, in any event, for Toyota and Lexus). Again, the '243 patent describes that a "template" is simply a "starting point" and that a "profile" can be effectively any known data storage, all of which was well-known and commonly used by a POSITA, further confirming there is nothing inventive about the claimed templates. *See also* Ex. 1001 at 14:50-55, 17:54-62, 72:35-45, 72:60-73:24, 74:47-55.

4. Claims 19 and 20

267. As to method claims 19-20, as I explained in Section VI.C above, they correspond to system claims 9-10. Accordingly, Hendry in view of Rovik renders claims 19-20 obvious for the same reasons as claims 9-10, as I discussed in the prior sections.

E. Ground 5: Singh (Ex. 1008) renders claims 1, 6, 7, 11, 16, and 17 obvious.

268. In my opinion, Singh renders claims 1, 6-7, 11, and 16-17 obvious.

1. Claim 1

1[pre] “A system, comprising:”

269. Regardless of whether the preamble of claim 1, Singh discloses “*a system.*” For example, Singh discloses “an intelligent vehicle that allows multiple drivers to drive the vehicle and provides customized settings and services for each of them” where “the vehicle [includes] the operating system that allows multiple drivers to use the vehicle by authenticating them with their finger impressions which are saved by means of databases installed in the operating system.” Ex. 1008 at Abstract. Singh also discloses:

The current invention is the vehicle with the operating system that allows multiple drivers to use the vehicle by authenticating them with their finger impressions which are saved by means of databases installed in the operating system. The vehicle consists of an operating system which saves information of up to five drivers. The vehicle authenticates the drivers by means of finger impression which is a unique parameter for each driver. Upon authentication the driver can utilize the vehicle in an individualized manner. The complete process for the working and features of vehicle is described below.

Ex. 1008 at [0003].

270. I explain this system in Singh further below.

1[a] “memory;”

271. Singh discloses the claimed “*memory*,” for example, a vehicle’s hard drive or storage media. Ex. 1008 at [0004], [0033], [0041], [0058], [0063]-[0064], claim 1 of Singh.

272. For example, Singh discloses that “[t]he password and the finger impression of the driver are saved on the database in the operating system on the hard drive of the vehicle.” Ex. 1008 at [0004].

273. As another example, Singh likewise discloses as part of its system to “LOAD THE ESSENTIAL CAR FEATURES” and that the saved features for a user are saved in a vehicle’s hard drive:

LOAD THE ESSENTIAL CAR FEATURES: Once the verification has been performed and the vehicle started, the Controller Unit of the current invention loads the essential vehicle features for the driver. The Controller Unit initiates a Features Loading Program which installs all the essential features of the vehicle pertaining to the preferences of the driver and forwards a copy of the scanned finger impression to the Features Loading Program. The first feature that the program installs is the vehicle seat settings. The Features Loading Program does this by establishing a connection with the database and searching for the finger impression of the driver. Once the match is found, the Features Loading Program obtains the file path of the vehicle features file for the driver which denoted by DriverName.cfs. **Once the Program retrieves the file name, it opens the file from the hard drive of the vehicle and applies the settings customized by the driver.** The first vehicle settings to be implemented are the ones for seat arrangement which are customized by the driver. Followed by this, the Features Loading Program loads the settings for mirrors, regulates the temperature

for the driver and loads the color scheme of the panel lights and turns them depending upon the time of the day or the prevalent weather conditions.

Ex. 1008 at [0041].

274. Similarly, in claim 1 of Singh, Singh discloses “a hard drive to store the operating system, database, user profiles and multiple types of files related to different drivers of the vehicle.” Ex. 1008 at cl. 1.

275. Singh also refers to the memory as a “storage media” where, for example, user profiles are saved: “The user profile will contain files with information and preferences of different drivers for features like Car Settings, Address List, Telephone List, Music List and other functions. All the information related to driver preferences will be saved in the files and saved onto the **storage media** which will be accessed by The Controller Unit.” Ex. 1008 at [0033] (emphasis added).

1[b] “machine-readable instructions; and”

276. Singh discloses the claimed “*machine-readable instructions*,” for example, software programs (which a POSITA would have understood to be machine-readable instructions). Ex. 1008 at [0022], [0039], [0049]-[0054].

277. For example, Singh discloses software programs to perform the various functions of the system:

- The inputted “password activates controller which checks this password in the database by means of a software program.” Ex. 1008 at [0022].
- “When the driver scans the finger impression on the device, the Controller Unit captures the impression and provides a copy to the software program. The software program now finds the finger impression in only the entries that contain the same password as entered by the driver.” Ex. 1008 at [0039].
- “As the Controller Unit initiates the Control Program it transfers a copy of the driver finger impression to the Control Program. The Control Program establishes a connection with the database and searches for the files related to the tabs that are loaded on the Graphical User Display. The database returns the files which contain addresses, music files, and telephone list, electronic mail and the vehicle settings for the driver. The names of these files will be as follows:
 - a. DriverName.AL for the address list of the current driver.
 - b. DriverName.Mus for the music list of the current driver.
 - c. DriverName.TL for the telephone list of the current driver.
 - d. DriverName.eml for the electronic mail list of the current driver.
 - e. DriverName.cfs for modifying the vehicle setting features for the current driver.” Ex. 1008 at [0049]-[0054].

278. And, further confirming the understanding of a POSITA that Singh discloses the claimed “*machine-readable instructions*” by its disclosure of

“software programs,” the Microsoft Computer Dictionary, Fifth Edition, defines “program” as follows:

program¹ *n.* A sequence of instructions that can be executed by a computer. The term can refer to the original source code or to the executable (machine language) version. *Also called:* software. *See also* program creation, routine, statement.

Ex. 1012 at 424.

1[c] “one or more processors to execute the machine-readable instructions to:”

279. Singh discloses the claimed “*one or more processors to execute the machine-readable instructions to,*” for example, a controller unit that executes the software program to perform various system functions. Ex. 1008 at [0004], [0022]-[0023], [0033]-[0034], [0039], [0041], [0049]-[0054].

280. Singh discloses a “controller” (which it also refers to as a “controller unit”) that “**acts like a central unit which will control the entire process** from validating the finger impression of the driver to setting the attributes or preferences of the driver who will be driving the vehicle,” including running various programs to perform the various disclosed steps in Singh. Ex. 1008 at [0034] (emphasis added); *see also* Ex. 1008 at [0004], [0022]-[0023], [0033], [0039], [0041], [0049]-[0054].

281. This is also consistent with the state of the art: a POSITA would have understood that a controller is, or at least commonly would be, a processor, as it functions to control the process and run the software programs. For example, Poulsen describes a controller in its disclosure and at one point refers to it as a processor. Ex. 1006 at [0036].

282. This is also consistent with the '243 patent, which as I described above in Section VI.A, teaches to use various off-the-shelf, conventional processors. And, I note that the '243 patent states that a processor may include a controller and uses the terms interchangeably:

The processor 304 may comprise a general purpose programmable processor or controller for executing application programming or instructions. The processor 304 may, optionally, include multiple processor cores, and/or implement multiple virtual processors. Additionally or alternatively, the processor 304 may include multiple physical processors. As a particular example, the processor 304 may comprise a specially configured application specific integrated circuit (ASIC) or other integrated circuit, a digital signal processor, a controller, a hardwired electronic or logic circuit, a programmable logic device or gate array, a special purpose computer, or the like. The processor 304 generally functions to run programming code or instructions implementing various functions of the vehicle control system 204.

Ex. 1001 at 21:64-22:10 (emphasis added).

283. Based on Singh's disclosure (including that the controller unit "controls the entire process"), a POSITA would have understood that the disclosed

controller/controller unit executing machine-readable instructions would implement the various steps and functions disclosed in Singh's system (including those in independent claim 1 and its dependents).

1[c-1] “receive a request to access a user profile stored at a vehicle, the user profile including one or more preferences associated with functions or settings of the vehicle;”

284. Singh discloses the claimed “*one or more processors to execute the machine-readable instructions to: receive a request to access a user profile stored at a vehicle, the user profile including one or more preferences associated with functions or settings of the vehicle.*” For example, Singh discloses a multi-factor authentication/verification process (password and fingerprint) to initiate a request to access a user profile stored at the vehicle, after which the profile is loaded with particular user preferences/settings for the vehicle (for seats, mirrors, temperature, etc.). Ex. 1008 at [0034], [0038]-[0039], [0041].

285. Singh discloses that the controller unit uses the password and fingerprint impression to determine whether to allow access and restoration of a user's profile stored at the vehicle: “The Controller Unit will control the validation of the driver by verifying his **password, finger impression recording and matching process**, accessing the operator database to locate the user files based on

the User Profile and then applying the settings according to the preferences of the driver.” Ex. 1008 at [0034] (emphasis added).

286. Singh further discloses the driver’s password process:

The first step starts with the input of the driver’s encrypted password. The driver is required to provide the password on the password window to get access to the finger impression scanning console. When the user provides the password on the password window, the controller unit is activated and it records the password of the driver. The controller unit then activates a program and sends a copy of the password to the program. The program initiates a connection with the vehicle database on the hard drive and searches for the password provided by the driver. **If it finds the password as existing in the database, it forwards the result to the controller.** The program searches the entire database as multiple drivers can have same password. **In either case, the password entered by the driver is a positive match. At this the controller opens the shutter of the finger impression scanning console.”**

Ex. 1008 at [0038] (emphasis added).

287. Singh then continues its process for fingerprints:

The second step of the process in the current invention is to obtain the **finger impression** of the vehicle driver in order to verify the identity of the driver. After the passwords have matched, the Controller Unit opens the shutter of the finger impression scanning console and prompts the driver to provide the finger impression scan to verify his or her identity. When the driver scans the finger impression on the device, the Controller Unit captures the impression and provides a copy to the software program. The software program now finds the finger impression in only the entries that contain the same password as entered by the driver. **If it finds a match amongst those entries, it will return a positive result to the controller along with the name of the driver who scanned the finger impression.** At this the

Controller provides the notification on the results portion of the finger impression scanning console and closes it down in order to implement the next step.

Ex. 1008 at [0039] (emphasis added).

288. Singh also discloses that after a successful authorization/verification, the user profile is retrieved and loaded:

Once the verification has been performed and the vehicle started, the Controller Unit of the current invention loads the essential vehicle features for the driver. The Controller Unit initiates a Features Loading Program which installs all the essential features of the vehicle pertaining to the preferences of the driver and forwards a copy of the scanned finger impression to the Features Loading Program. The first feature that the program installs is the vehicle seat settings. The Features Loading Program does this by establishing a connection with the database and searching for the finger impression of the driver. **Once the match is found, the Features Loading Program obtains the file path of the vehicle features file for the driver which denoted by DriverName.cfs. Once the Program retrieves the file name, it opens the file from the hard drive of the vehicle and applies the settings customized by the driver.** The first vehicle settings to be implemented are the ones for seat arrangement which are customized by the driver. Followed by this, the Features Loading Program loads the settings for mirrors, regulates the temperature for the driver and loads the color scheme of the panel lights and turns them depending upon the time of the day or the prevalent weather conditions.

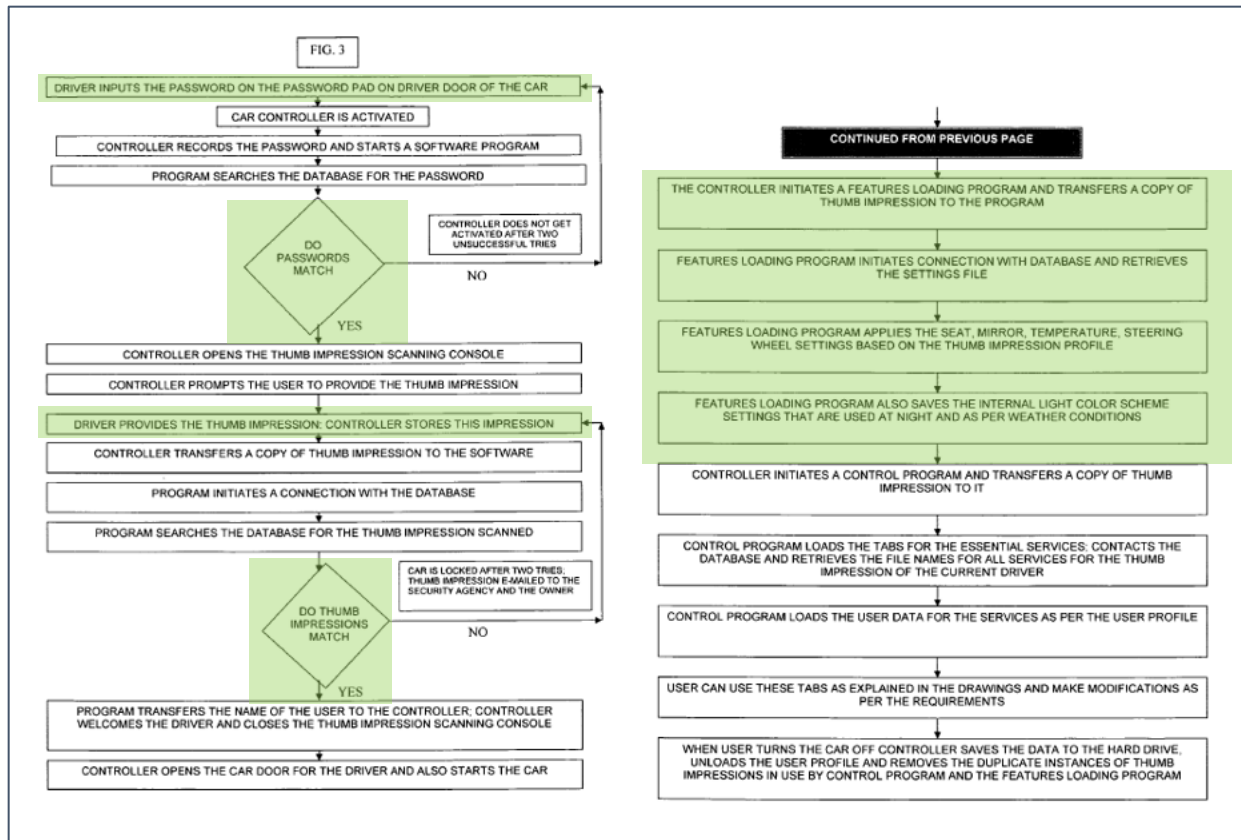
Ex. 1008 at [0041] (emphasis added).

1[c-2] “determine, by performing at least one of a verification process or an authentication process in response to the request, whether the request is authorized to access the user profile;”

289. Singh discloses the claimed “*one or more processors to execute the machine-readable instructions to: ... determine, by performing at least one of a verification process or an authentication process in response to the request, whether the request is authorized to access the user profile.*” For example, in response to the request in limitation 1[c-1], Singh discloses performing the multi-factor authentication/verification process (password and fingerprint) to authenticate/verify a user to determine whether access to the vehicle and associated user profile is authorized. Ex. 1008 at [0034], [0038]-[0039], [0041], FIGs. 1, 3.

290. As I explained above regarding limitation 1[c-1], Singh discloses a multi-factor process, which, if successful, results in the user profile being accessed and loaded.

291. Additionally, in Figure 3, reproduced below, Singh discloses determining whether passwords and thumbprints match, which results in the controller initiating a “Features Loading Program,” to access and apply user settings (such as for seat, mirror, etc.) based on the thumb impression profile. Ex. 1008 at [0034], [0038]-[0039], [0041].



Ex. 1008 at FIG. 3.

1[c-3] “in response to determining that the request is authorized to access the user profile, determine one or more requested modifications to at least one of the one or more preferences; and”

292. Singh discloses, or it would at least have been obvious to a POSITA to include as part of Singh, the claimed “*one or more processors to execute the machine-readable instructions to: ... in response to determining that the request is authorized to access the user profile, determine one or more requested modifications to at least one of the one or more preferences.*” For example, in response to the determination in limitation 1[c-2], a user may change one or more

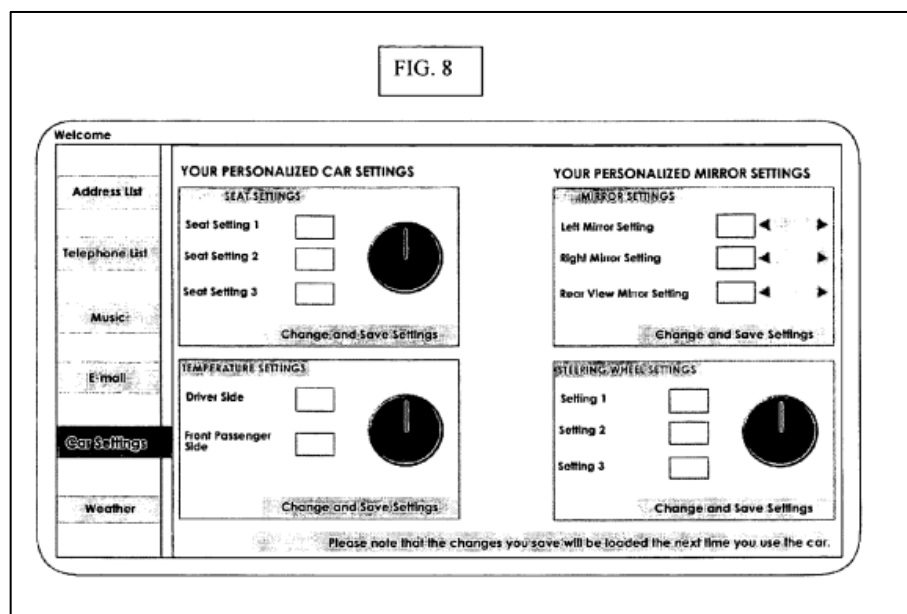
settings, which are then updated and stored in the vehicle memory. Ex. 1008 at [0060], [0062]-[0064], FIGs. 3, 8.

293. Initially, Singh discloses that “[t]he vehicle features tab will allow each driver to modify or change their current seating arrangements to their liking.” Ex. 1008 at [0060].

294. Singh explains the process for modifying various settings:

When the driver will press on the Car Features tab on the graphic display shown by FIG. 8, the different vehicle settings will be displayed on the screen. **Using the touch screen the driver will be able to make changes to those settings.** The last set of settings that will be used and saved by the driver will become the current settings for the driver when he or she uses the vehicle next time. **Along with seat settings, the driver will also be able to change the settings of the mirrors and the settings of the steering wheel.**

Ex. 1008 at [0060] (emphasis added), FIG. 8 (below).



Ex. 1008 at FIG. 8.

295. Singh also explains that its “invention enables each driver of the vehicle to make changes to their preference files by means of the Graphical User Interface,” where “[t]he driver can make changes to any or all of the files as per the requirements” (*e.g.*, addresses, telephone list, music preferences). Ex. 1008 at [0062]-[0064]. Singh further explains that the controller unit records the modifications via the control program, and prompts the user to save the changes, *e.g.*, “**just when the driver completes the task.**” Ex. 1008 at [0062]-[0064] (emphasis added). Singh discloses:

MODIFYING THE FEATURES AND SERVICES: The current invention enables each driver of the vehicle to **make changes to their preference files** by means of the Graphical User Interface. **The driver can make changes to any or all of the files as per the requirements.** The driver will be able to make changes to the address file by amending the DriverName.AL file. The driver can add new address to the list, delete an already existing address or edit the existing address. The Controller Unit records all the modifications to the address file by means of the control program and **prompts the user to save the changes just when the driver completes the task.**

Ex. 1008 at [0062] (emphasis added).

296. While Singh’s “just when the driver completes the task” disclosure refers to the address file as an example, in the context of Singh, including its disclosure that the “driver can make changes to any or all of the files,” a POSITA would have understood Singh to disclose modifying and immediately saving changes to various aspects of the user profile in addition to the address file.

297. Singh further discloses that the changes can also be saved at the end of the process (*e.g.*, at termination) to update the stored profile. Ex. 1008 at [0033]-[0034], claim 3 of Singh, FIG. 3 (reproduced above for limitation 1[c-2]).

298. A POSITA would have understood that modifying settings at various times would logically encompass doing so in response to determining the request is authorized, among others, such that the user could immediately update any settings that may be necessary (*e.g.*, if the weather or season has changed, immediately changing the default temperature setting to adjust for the new weather/season). Doing so would have simply been adjusting the timing of when the modification occurs, consistent with Singh's disclosure and the state of the art. *See also* Ex. 1005 at [0031], FIG. 4B (Hendry's teachings regarding modification process as I explained in Sections IX.B.1 (overview) and Section X.B.1 (regarding limitation 1[c-3])).

299. Lastly, I note that Patent Owner has asserted that this limitation is met "if the processor determines that the request to access the user profile is authorized, the processor receives input from the vehicle display, information associated with vehicle components and sensors, such as seat, steering wheel, and mirror positions, and/or buttons, to determine requested modifications to be made to one or more of the preferences saved to the user profile." Ex. 1025 at 4 (Patent Owner infringement

contentions in district court). In other words, Singh also discloses this limitation under Patent Owner's interpretation.

1[c-4] “in response to the one or more requested modifications, create an updated user profile at the vehicle, the updated user profile including one or more updated preferences based on the one or more requested modifications.”

300. Singh discloses the claimed “*one or more processors to execute the machine-readable instructions to: ... in response to the one or more requested modifications, create an updated user profile at the vehicle, the updated user profile including one or more updated preferences based on the one or more requested modifications.*” For example, Singh discloses updating and storing user profile settings in the vehicle memory. Ex. 1008 at [0033]-[0034], [0060], [0062]-[0064], cl. 3, FIG. 3.

301. As I explained regarding limitation 1[c-3], above, Singh discloses that the updated profile with the modified settings is created and saved to the vehicle memory after the modifications are requested by the user. Ex. 1008 at [0033]-[0034], [0060], [0062]-[0064], cl. 3, FIG. 3.

2. Claim 6

“The system of claim 1, wherein the one or more processors are to perform both the verification process and the authentication process, and wherein the one or more processors are to determine that the request is authorized to access the user profile in response to successfully verifying the request via the verification process and successfully authenticating the request via the authentication process.”

302. As I explained above, Singh renders claim 1 obvious. Singh also renders claim 6 obvious for the same reasons. Like claim 1, claim 6 does not specify what the “verification process” or the “authentication process” is. It just requires “to perform both the verification process and the authentication process.”

303. As I explained above regarding limitation 1[c-2] for claim 1, Singh discloses that the processor performs a multi-factor authentication and verification process (password and fingerprint) to determine whether to allow access to the user profile. *See also* Ex. 1008 at [0034], [0038]-[0039], [0041], FIGs. 1, 3.

3. Claim 7

“The system of claim 1, wherein the verification process includes at least one of biometric recognition, gesture recognition, facial recognition, or identification of a mobile device.”

304. As I explained above, Singh renders claim 1 obvious. Singh also renders claim 7 obvious for the same reasons as claims 1 and 6 (*e.g.*, fingerprints,

that is, the claimed “*biometric recognition*”). *See also* Ex. 1008, at Abstract, [0003], [0023], [0034], [0039].

305. I note the ’243 patent likewise describes fingerprints as one type of biometric recognition. Ex. 1001 at 39:15-20 (“biometric sensors” can include “fingerprint readers” among other things).

4. Claims 11, 16, and 17

306. As to method claims 11, 16, and 17, as I explained in Section VI.C above, they correspond to system claims 1, 6, and 7. Accordingly, Singh renders claims 11, 16, and 17 obvious for the same reasons as it renders claims 1, 6, and 7 obvious, as I discussed in the prior sections.

F. Ground 6: Singh (Ex. 1008) in view of Cazan (Ex. 1009) and Forstall (Ex. 1010) renders claims 2-8 and 12-18 obvious.

307. In my opinion, Singh in view of Cazan and Forstall renders claims 2-8 and 12-18 obvious. I first provide an overview of a POSITA’s motivation to combine the references, and why a POSITA would have had no technical difficulty and expected it to work. I then explain how the references render the claims obvious.

1. Motivation to Combine and Reasonable Expectation of Success

308. A POSITA would have been motivated to and had a reasonable expectation of success in combining the references—in fact, a high expectation—

for example, in applying, Cazanar's disclosure of transferring a user profile from a vehicle to a server for purposes of facilitating sharing profiles among vehicles and Forstall's disclosure of synchronizing stored data between a vehicle and remote device with Singh's system and method for managing and updating user profiles in a vehicle.

309. As an initial matter, Singh, Cazanar, and Forstall are in the same field as each other and the '243 patent and its claims (vehicular data management including, *e.g.*, user data management such as vehicle settings). Ex. 1008 at Abstract, [0001]-[0004]; Ex. 1009 at Abstract, 1:5-2:11; Ex. 1010 at Abstract, [0006]-[0013], [0092]; Ex. 1001 at Abstract. This is further evidenced by my summary of these references in Sections VI.A, IX.B.4, IX.B.5, and IX.B.6.

310. Consistent with my explanations in Sections IX.B.4, IX.B.5, and IX.B.6, a POSITA would have known of, and naturally looked to, their complementary teachings when constructing a system and method for managing user profiles for vehicle settings (including, *e.g.*, creating, applying, retrieving, using and updating user profiles for vehicle settings and enabling the profiles to be shared across vehicles). Among other things, as I summarized in Sections IX.B.4, IX.B.5, and IX.B.6, the references disclose systems that update and store vehicle profile settings. For example, Singh discloses a system that updates and stores user profile settings within vehicle memory, and Cazanar and Forstall discloses a system

whereby data exchange (such as user profile settings) occurs between a vehicle and an external location (such as a remote server in Cazanias and a mobile device in Forstall).

311. Singh, Cazanias, and Forstall are also directed to the same problem: improved system and methods for increased user convenience and ease for creating, saving, updating, and restoring user preferences and data, such as for vehicle settings—like the '243 patent. Ex. 1008 at Abstract, [0001]-[0004]; Ex. 1009 at Abstract, 1:5-2:11; Ex. 1010 at Abstract, [0006]-[0013], [0092]; Ex. 1001 at Abstract, 3:20-64. This is further evidenced by my summary of these references in Sections VI.A, IX.B.4, IX.B.5, and IX.B.6.

312. As I explain below and as evidenced by the state of the art, a POSITA would also have been motivated to transmit and save profiles to an external location (such as to a server, mobile device, database, etc.) for various purposes (including, *e.g.*, as a back-up in the event that the local vehicle copy is deleted or corrupted; so that the profile can be remotely updated and stored for future use by a user while not located within the vehicle; and so that the profile can be shared with, and applied to, other vehicles that the user may own, lease, rent or otherwise use, thereby eliminating or minimizing the need for the user to manually set preferences and settings each time the user uses a different vehicle). Ex. 1007 at 1:11-56; Ex. 1009 at 1:15-40, 6:13-34, 7:45-67, 12:13-30, 13:15-31; Ex. 1006 at [0037]-[0038],

[0042], [0086]-[0087]; Ex. 1015 at Abstract, 1:24-2:19, 2:52; Ex. 1016 at [0005], [0014].

313. For example, as I explained in Section IX.B.3, Rovik discloses the desirability of enabling adjustments to vehicle settings to be automatically applied to different vehicles including transferring profiles between vehicles via servers. As a further example, Rovik explains the advantages of transferring and applying settings when users use different vehicles:

Vehicles often include components which can be adjusted by a user of the vehicle. Such adjustable components can include adjustable seats and mirrors. In addition, some vehicles can store position settings for such adjustable components as a group of position settings for a particular user of the vehicle. In such vehicles, the user can automatically adjust the adjustable components in accordance with their position settings by selecting the group of position settings.

One limitation of the foregoing automatic adjustment is that the settings are only available in one vehicle. If a user drives a different vehicle, they must adjust the settings for many of the adjustable components. In addition, if the different vehicle is unfamiliar to the driver, such as a rental car that is a different make or model from the user's usual vehicle, the user will likely spend more time searching for their preferred settings. In view of these problems, one aspect of the present disclosure involves storing user settings at a server remote from a vehicle so that the user settings can be transmitted to different vehicles for the user.

In one embodiment, a user of a vehicle is identified with a user key associated with the user. The user key and a vehicle identifier associated with the vehicle are transmitted to a server remote from the vehicle. In turn, at least one user setting is received from

the remote server. The at least one user setting relates to the user key, the vehicle identifier, and a position of at least one component of the vehicle. A vehicle system setting stored in a memory of the vehicle is updated with the at least one user setting. When the vehicle system setting does not correspond with the at least one user setting, the position of the at least one component is adjusted based on the at least one user setting. **By receiving the at least one user setting from the remote server, it is ordinarily possible to automatically adjust positions of components in different vehicles based on the at least one user setting.**

According to a further embodiment, an input is accepted from the user to adjust the position of the at least one component and the vehicle system setting is changed in accordance with the accepted input. The changed vehicle system setting is transmitted to the remote server so as to update the at least one user setting with the changed vehicle system setting. **This arrangement ordinarily allows for the adjustment of positions of components in different vehicles based on changed preferences of the user.**

Ex. 1007 at 1:11-56 (emphasis added).

314. As I explained in Section IX.B.5, Cazanias explains the need and desirability to allow a user profile to be recalled in multiple vehicles, including those vehicles the user does not typically operate. As a further example, Cazanias discloses:

In recent years, many vehicles have utilized a driver's profile in order for a user to quickly recall settings for a number of user configurable features, such as, seat position, positions of mirrors, one or more pedal positions, radio stations presets, HVAC settings, navigation screen configuration, and the like. A user profile is stored in a memory on the vehicle, such as in an electronic control unit ("ECU") of the vehicle, or other controller

or computer on the vehicle. Many such vehicles today can store profiles for a number of different users. Each user can adjust any or all of the user configurable features of the particular vehicle to the user's desired settings, and save these setting to the memory of the vehicle as the user's own user profile. Therefore, if multiple users regularly operate the vehicle, such as a husband and wife, each user may store a user profile on the vehicle, and quickly restore all of their settings when they get in the vehicle by recalling their own user profile. However, if a user gets into a different vehicle, such as a rental car, they have to again adjust every user configurable feature to a desired position. This can be a time consuming exercise, and may be further complicated in a vehicle the user is not accustomed to driving, such as a rental car.

Hence a need exists for a system to allow a user profile to be recalled in multiple vehicles, even a vehicle the user does not typically operate, or a different type of vehicle from what the user typically operates.

Ex. 1009 at 1:15-40 (emphasis added); *see also* Ex. 1009 at 6:13-34, 7:45-67, 12:13-30, 13:15-31.

315. As a third example, as I explained in Section IX.B.2, Poulsen discloses storing user profiles, including updates or changes, at a vehicle and external locations for user convenience and to save time when applying user profiles to a different vehicle. As a further example, Poulsen discloses that “[t]he use of profiles is **a convenient way to save time** in performing various types of tasks.” Ex. 1006 at [0002] (emphasis added); *see also* Ex. 1006 at [0037]-[0038], [0042], [0086]-[0087]. As another example, Poulsen discloses that its profile process “will allow

the user to re-create the desired environment very quickly and easily.” Ex. 1006 at [0085].

316. Penilla explains transferring and sharing user profiles across vehicles, which a POSITA would likewise have understood to be beneficial (*e.g.*, so that the user does not need to manually reset settings for new vehicle as commonly known in the art to be advantageous):

Methods and systems are provide[d] access to cloud services over the Internet for managing a user profile of a vehicle on a cloud processing system connected to the Internet. One example method includes receiving requests to access the user profile to define settings for one or more vehicles. The method includes receiving input to user settings at the vehicle at the cloud processing system. The method includes processing the input over time to learn behavior associated with the input to the use settings. The method includes transmitting settings to the vehicle to be automatically implemented based on the learned behavior. The method being executed by a processor. The profile can be transferred to one or more vehicles, can be set for a temporary period of time, can be set with wireless payment systems, and is accessible over the Internet to accept changes or updates.

Ex. 1015 at Abstract; *see also* Ex. 1015 at 1:24-2:19.

317. As another example, Wilkins explains the importance of centralized backup files to enable synchronization and restoration including if a local original file is corrupted (as applied here, to enable sharing and restoration of user profiles across vehicles):

Entering contact information into multiple contact management applications requires a time-consuming and redundant manual

data entry process. The high costs associated with manual data entry are well-understood, and many prior art systems have been designed to address these concerns. For example, **creating an electronic backup file of a contact information database enables contact data to be automatically restored to a contact management application if the application's database becomes corrupt. Backup files also enable data from one application to be imported into another application, provided the file formats are compatible or translation from one format to another is feasible.**

Ex. 1016 at [0005] (emphasis added); *see also* Ex. 1006 at [0014] (“By providing a centralized server for synchronization solutions, the centralized server stores the most recent copy of each record on behalf of a user—enabling the user to enjoy synchronization and backup in a single application.”).

318. The state of the art also—along with the disclosure and admissions in the '243 patent—confirms that a POSITA would have understood that it would have been a simple modification to transmit and share user profiles among devices, including vehicles and servers, mobile devices, etc., using conventional techniques such as the Internet, Bluetooth, a wireless network and the like (including, as discussed above in this section and in Sections IX.A and IX.B, to allow for the same user profile to be used across different vehicles a user may own, lease, rent, or otherwise use). Ex. 1006 at [0086]-[0087]; Ex. 1007 at 1:11-56, 3:54-4:7, 8:60-9:64, FIG. 1; Ex. 1009 at 1:15-40, 5:37-53, 6:13-34, 7:45-67, 12:13-30. This is a simple client-server operation as was well-known in the art. I again note that the

'243 patent relies on known, conventional components and techniques for transmitting, storing, and updating user profiles (such as known servers, memory, processors, communication networks, etc.), Ex. 1001 at 19:30-20:11, 92:66-93:67, which provides further confirmation to a POSITA that there would be no technical difficulties in doing so.

2. Claim 2

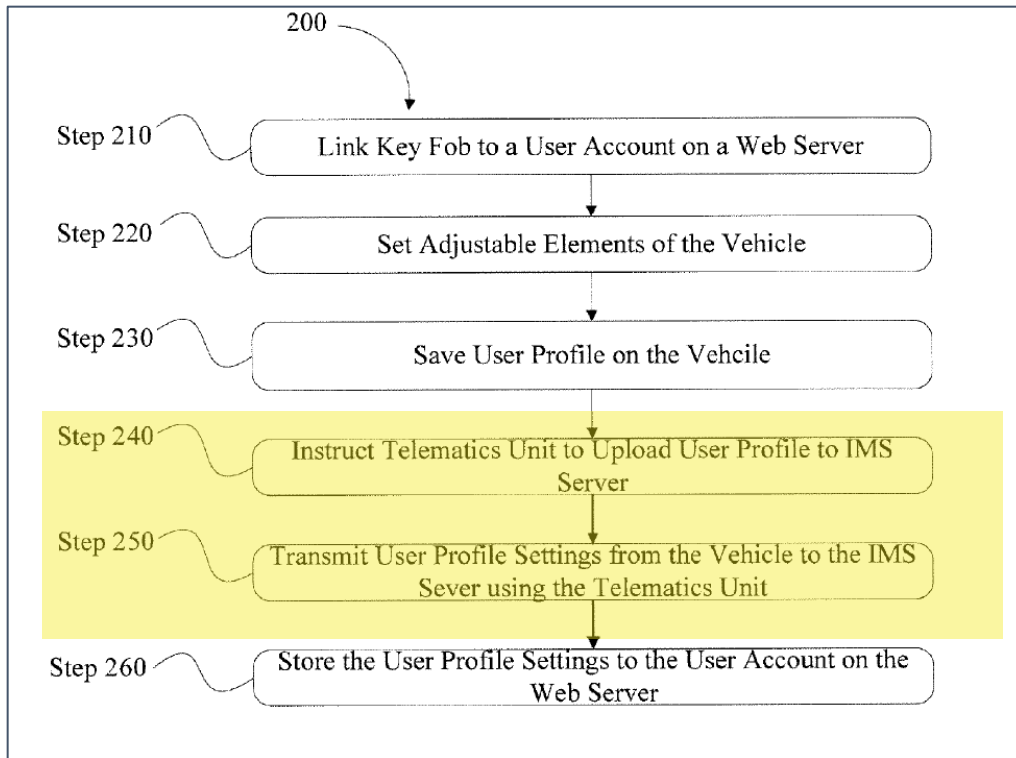
2[a] “The system of claim 1, wherein the one or more processors are to execute the machine-readable instructions to transmit the updated user profile from the vehicle to at least one of a mobile device, a cloud server, a remote server, or another vehicle,”

319. Singh in view of Cazanias and Forstall discloses, and it would have been obvious to include as part of Singh to enable remote user-profile storage and transfer of user profiles among vehicles, “*wherein the one or more processors are to execute the machine-readable instructions to transmit the updated user profile from the vehicle to at least one of a mobile device, a cloud server, a remote server, or another vehicle.*”

320. As I explained above in Section X.C.2, I again note that the claims include “one or more processors...” for performing the claimed functions. In other words, different processors (or a combination thereof) can perform the various claimed functions. So, for example, a different processor(s) can perform the functions in claim 2 that the processor(s) that performed the claim 1 functions. I

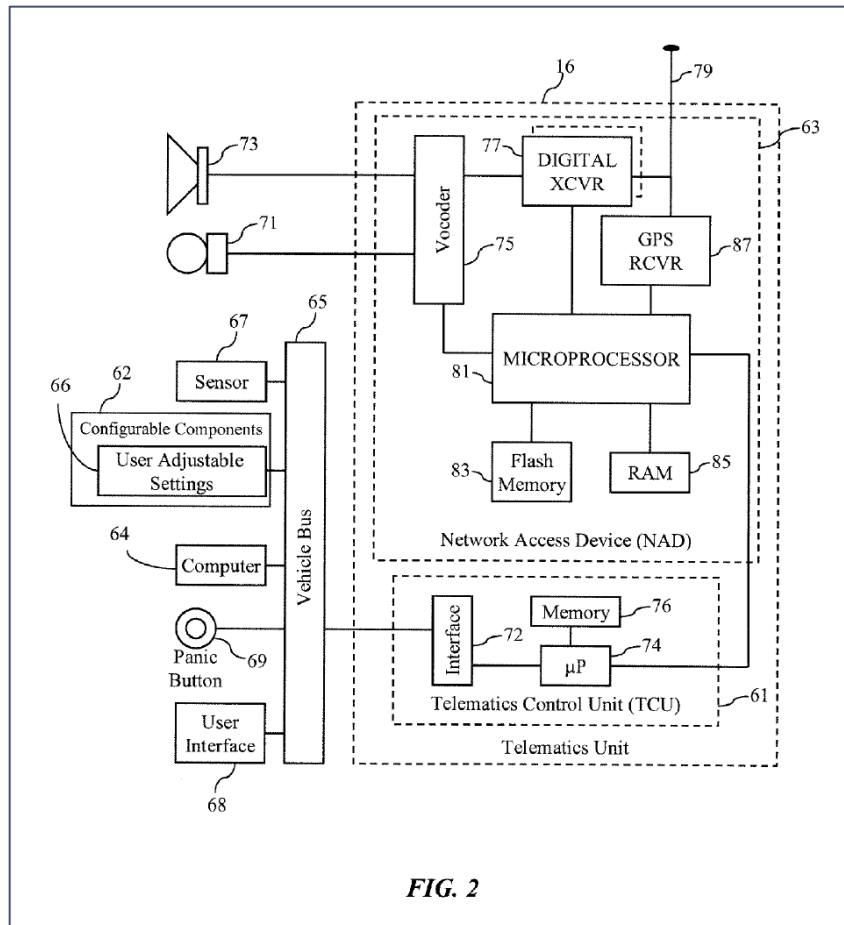
also again note that Patent Owner's infringement contentions make the same assertion. Ex. 1025 at 1 n.1, 10 n.23.

321. Cazanias discloses transmitting user profile data between the vehicle and a server using the vehicle's telematic unit, *e.g.*, "a user profile having settings for a number of user configurable features 62 of the vehicle 14 may be transmitted to or from the unit 16 or 16b in the vehicle through the network 10," where "[a]n uploaded user profile is stored on the customer account web server 41, which... is connected to an IP Multimedia Subsystem (IMS) server 42" (*i.e.*, transmitting user profiles to a remote server). Ex. 1009 at 12:13-30; *see also* Ex. 1009 at Abstract, 1:5-40, 2:30-40, 6:14-18, 13:15-30, 14:62-15:10, FIG. 2. Cazanias discloses that the "features 62" include various vehicle settings (seat, mirror, HVAC, radio, etc.). Ex. 1009 at 12:30-45. This is also reflected in Figure 3, reproduced below, where Cazanias discloses in steps 240 and 250, transmitting the user profile from the vehicle to a server using the telematics unit.



Ex. 1009 at FIG. 3.

322. Cazanias further discloses a “processor” (including in the vehicle), whereby “[e]xecution of the program by the processor configures the system to perform functions.” Ex. 1009 at 1:55-2:28; *see also* Ex. 1009 at 5:24-36, FIG. 2. Cazanias explains that telematics unit 16 includes a “telematic control unit” (“TCU”) 61 which “may be implemented as a microprocessor” 74 and “programming in the memory 76 of the TCU 61 further enables the TCU microprocessor 74 to operate through NAD 63 to transmit or receive a user profile.” Ex. 1009 at 8:1-27, FIG. 2. That is, Cazanias teaches to use a processor to transmit the user profile from the vehicle to a server.



Ex. 1009 at FIG. 2.

323. As I explained in Section IX.B.6, Forstall discloses a system where a “mobile device 100 is operable to update the vehicle device(s) with any information identified and/or stored by the device 100.” Ex. 1010 at [0079].

324. Also as I explained in Section IX.B.6, Forstall discloses updating and synchronizing settings when new information and resolving conflicts between settings:

The “auto-update device or vehicle with new information” button 614 is shown as enabled. In an

implementation, when this button is active new information stored in the mobile device 100 and/or vehicle device(s) 405 will automatically be provided to the other device. **According to an implementation, new information is information stored in the mobile device 100 and/or vehicle device(s) 405 since the last synchronization of the mobile device 100 and vehicle device(s) 405.** New information can include location information or any other information stored in the devices, such as contact information. A **“resolve conflict in favor of” selection 616 is shown.** When the **“auto-update device or vehicle with new information” button 614 is enabled at least one of the “device” button 618 and “vehicle” button 620 are toggled to an active state.** FIG. 6 shows the **“device” button 618 as active.** In an implementation, when conflicts occur between information stored in the mobile device 100 and vehicle device(s) 405, the **“resolve conflict in favor of” selection 616 determines which device’s information is copied onto the other device.**

According to an implementation, when conflicts between data on the vehicle device(s) 405 and mobile device 100 occur, the user may be alerted. **The user may be able to resolve the conflict in favor of either the vehicle device(s) 405 or mobile device 100 on an item by item basis, or based on a category of information (e.g., telephone numbers, calendar entries, etc.).** This may be a hot sync feature of the device.

A **“view advanced synchronization settings” button 622 is shown.** **According to an implementation, selection of this button 622 permits a user to configure advanced synchronization settings, including reconciliation settings when conflicts occur.** For instance, a user may select, on an item by item basis, whether the mobile device 100 or vehicle device(s) 405 should govern in the event of a conflict. Items may be individually toggled, such as contacts, calendar entries, telephone numbers, destinations, points of interest, and the like. According to an implementation, selection of this button 622 permits a user to configure whether synchronization occurs on an item by item basis. Other advanced settings, such

as a schedule or time for synchronization to occur (if not in real-time or in near real-time) may be established by a user.

Ex. 1010 at [0090]-[0092] (emphasis added).

325. That is, Forstall discloses transmitting an updated user profile from the vehicle to at least one of a mobile device, a cloud server, a remote server, or another vehicle.

326. And, like Singh and Cazanans, Forstall discloses processors to execute programs stored in memory. Ex. 1010 at [0012], [0046].

327. A POSITA would have understood, or at least found obvious, that transmission of the user profiles to a remote device, such as a remote server or mobile device, would logically mean that the applicable user profile is shared with other vehicles (including, *e.g.*, an updated user profile as in Singh or Forstall stored at the vehicle). A POSITA also would have understood that such a controller/processor would execute machine-readable instructions to perform the various functions, consistent with typical processors known in the state of the art (including as explained in Singh, Cazanans, Forstall, and elsewhere) and the '243 patent's disclosure of using off-the-shelf, conventional processors, as I explained above in Sections VI.A and IX. *See also* Ex. 1001 at 92:67-93:67, 11:42-12:8, 21:64-22:10.

2[b] “wherein a local user profile including one or more local preferences is stored at the at least one of the mobile device, the cloud server, the remote server, or the other vehicle prior to transmission of the updated user profile to the at least one of the mobile device, the cloud server, the remote server, or the other vehicle.”

328. Singh in view of Cazanias and Forstall discloses, and it would have been obvious to include as part of Singh for the same reasons I explained regarding limitation 2[a] above, “*wherein a local user profile including one or more local preferences is stored at the at least one of the mobile device, the cloud server, the remote server, or the other vehicle prior to transmission of the updated user profile to the at least one of the mobile device, the cloud server, the remote server, or the other vehicle.*”

329. Forstall explains that “when conflicts occur between information stored in the mobile device 100 and vehicle device(s) 405, the ‘resolve conflict in favor of’ selection 616 determines which device’s information is copied onto the other device.” Ex. 1010 at [0090]. “[W]hen conflicts between data on the vehicle device(s) 405 and mobile device 100 occur, the user may be alerted,” and “[t]he user may be able to resolve the conflict in favor of either the vehicle device(s) 405 or mobile device 100 on an item by item basis, or based on a category of information (e.g., telephone numbers, calendar entries, etc.).” (*i.e.*, the external location already has a stored “*local user profile including one or more local*

preferences” as claimed). Ex. 1010 at [0091]; *see also* Ex. 1010 at [0099] (“The information received from the vehicle device is compared to information stored in the mobile device (904) If any information is different (906), the device that controls conflict resolution is identified (908)”), [0092].

3. Claim 3

“The system of claim 2, wherein the one or more processors are to execute the machine-readable instructions to determine whether any conflicts exist between the updated preferences of the updated user profile and the local preferences of the local user profile.”

330. Singh in view of Cazanias and Forstall discloses, and it would have been obvious to include as part of Singh, for basically the same reasons as claim 2 above, “*wherein the one or more processors are to execute the machine-readable instructions to determine whether any conflicts exist between the updated preferences of the updated user profile and the local preferences of the local user profile.*”

331. As I explained for claim 2 above, Forstall discloses resolving conflicts between the received user profiles and the previously stored profile. Ex. 1010, [0090]-[0092], [0099]. As another example, Forstall discloses advanced synchronization settings, enabling “a user to configure advanced synchronization settings, including reconciliation settings when conflicts occur.” Ex. 1010 at [0092].

“For instance, a user may select, on an item-by-item basis, whether the mobile device 100 or vehicle device(s) 405 should govern in the event of a conflict,” and “[i]tems may be individually toggled, such as contacts, calendar entries, telephone numbers, destinations, points of interest, and the like.” Ex. 1010 at [0092].

332. A POSITA would also have understood the function of claim 3 would be performed by the one or more processors executing the machine-readable instructions, for the same reasons explained regarding claims 1-2.

4. Claim 4

“The system of claim 3, wherein, in response to determining that one or more conflicts exist between the updated preferences and the local preferences, the one or more processors are to execute the machine-readable instructions to overwrite conflicted ones of the local preferences with corresponding conflicting ones of the updated preferences.”

333. Singh in view of Cazanias and Forstall discloses, and it would have been obvious to include as part of Singh, for basically the same reasons as claims 2 and 3 above, “*wherein, in response to determining that one or more conflicts exist between the updated preferences and the local preferences, the one or more processors are to execute the machine-readable instructions to overwrite conflicted ones of the local preferences with corresponding conflicting ones of the updated preferences.*”

334. As I explained for claims 2 and 3 above, when a conflict is determined, Forstall provides for selective overwriting between received and local preferences that conflict. Ex. 1010 at [0090]-[0092], [0099].

335. A POSITA would also have understood the function of claim 4 would be performed by the one or more processors executing the machine-readable instructions, for the same reasons explained regarding claims 1-2.

5. Claim 5

“The system of claim 3, wherein, in response to determining that one or more conflicts exist between the updated preferences and the local preferences, the one or more processors are to execute the machine-readable instructions to perform a reconciliation process that allows selective determination of which conflicted ones of the local preferences should be overwritten by corresponding conflicting ones of the updated preferences.”

336. Singh in view of Cazanias and Forstall discloses, and it would have been obvious to include as part of Singh, for basically the same reasons as claims 2-4 above, *“wherein, in response to determining that one or more conflicts exist between the updated preferences and the local preferences, the one or more processors are to execute the machine-readable instructions to perform a reconciliation process that allows selective determination of which conflicted ones of the local preferences should be overwritten by corresponding conflicting ones of the updated preferences.”*

337. As I explained for claims 2-4 above, when a conflict is determined, Forstall provides a reconciliation process for selective determination of which preferences should be overwritten. Ex. 1010 at [0090]-[0092], [0099].

338. A POSITA would also have understood the function of claim 5 would be performed by the one or more processors executing the machine-readable instructions, for the same reasons explained regarding claims 1-2.

6. Claim 6

“The system of claim 1, wherein the one or more processors are to perform both the verification process and the authentication process, and wherein the one or more processors are to determine that the request is authorized to access the user profile in response to successfully verifying the request via the verification process and successfully authenticating the request via the authentication process.”

339. As I explained above in Section X.E.2, Singh renders claim 6 obvious. In my opinion, Singh in view of Cazanias and Forstall also renders claim 6 obvious.

340. Cazanias discloses that “the user profile processing and vehicle configuration functions may use a variety of different types of user identification techniques,” among them, device information, biometrics (*e.g.*, facial recognition), Bluetooth, and key fob radio signal comparison. Ex. 1009 at 6:50-7:7, 7:45-67.

341. A POSITA would have understood, and found it obvious, to apply various authentication and verification processes—including those known to be

used in a variety of applications including vehicles (biometrics, passwords, security keys, etc. as known in the art and disclosed in Singh, Cazanias, Hendry, Poulsen and others)—to beneficially increase security and decrease the likelihood of unauthorized access if one method becomes compromised (including the benefit of using “fingerprints” specifically due to them being “unique”). A POSITA would have understood, and thought to apply, various combinations of verification/authentication processes, including various known user identification and device identification techniques to ensure that the user and/or device were authorized and not compromised or fraudulent. For example, as I explained in Section IX.B.4, Singh discloses the benefit of using both passwords and fingerprints such that if a password is improperly obtained, access to the vehicle and profile will be denied unless the fingerprint is verified (and the benefits of using fingerprints because they are “unique”). Ex. 1008 at [0002]-[0003], [0022]-[0023], [0038]-[0039], [0066]-[0067]. That same uniqueness applies to other biometrics, such as in Cazanias. Rovik discloses “several different ways” to identify user at vehicle including biometrics, mobile device key, etc. Ex. 1007 at 9:27-64, 10:35-57. Lortz similarly discloses various methods, including biometrics and keys. Ex. 1011 at [0024]-[0025], [0035], [0042], [0050]-[0051]. Addepalli discloses a multi-factor process including biometrics, signatures, certificates, passwords, etc. to provide increased security depending on application/access. Ex. 1017 at 14:48-15:3, 17:57-

18:8. And Tadayon discloses various processes including biometrics and public/private keys. Ex. 1024 at [0122]-[0123]. This is just like the '243 Patent, which treats authentication and verification techniques as effectively interchangeable and relies on techniques well-known in the art.

7. Claim 7

“The system of claim 1, wherein the verification process includes at least one of biometric recognition, gesture recognition, facial recognition, or identification of a mobile device.”

342. As I explained above in Section X.E.2, Singh renders claim 6 obvious. Singh in view of Cazanias and Forstall also renders claim 7 obvious for the same reasons as claim 6 (for example, biometrics such as fingerprints).

8. Claim 8

“The system of claim 1, wherein the authentication process includes an exchange of security keys between the vehicle and a mobile device.”

343. Singh in view of Cazanias and Forstall renders claim 8 obvious for effectively the same reasons as claim 6 (*e.g.*, Bluetooth pairing or key fob radio signal exchange).

9. Claims 12-18

344. As to method claims 12-18, as I explained in Section VI.C above, they correspond to system claims 2-8. Accordingly, Singh in view of Cazanias and

Forstall renders claims 12-18 obvious for the same reasons as claims 2-8, as I discussed in the prior sections.

G. Ground 7: Singh (Ex. 1008) in view of Rovik (Ex. 1007) renders claims 9, 10, 19, and 20 obvious.

345. In my opinion, Singh in view of Rovik renders claims 9, 10, 19, and 20 obvious. I first provide an overview of a POSITA's motivation to combine the references, and why a POSITA would have had no technical difficulty and expected it to work. I then explain how the references render the claims obvious.

1. Motivation to Combine and Reasonable Expectation of Success

346. A POSITA would have been motivated to and had a reasonable expectation of success in combining the references—in fact, a high expectation—for example, in applying Rovik's disclosure of sharing of user settings across multiple vehicles using common settings with Singh's system and method for managing and updating user profiles in a vehicle.

347. As an initial matter, Singh and Rovik are in the same field as each other and the '243 patent and its claims (vehicular data management including, *e.g.*, user data management such as vehicle settings). Ex. 1008 at Abstract, [0001]-[0004]; Ex. 1007 at Abstract, 1:6-2:29; Ex. 1001 at Abstract. This is further evidenced by my summary of these references in Sections VI.A, IX.B.3, and IX.B.4.

348. Consistent with my explanations in Sections IX.B.3 and IX.B.4, a POSITA would have known of, and naturally looked to, their complementary teachings when constructing a system and method for managing user profiles for vehicle settings (including, *e.g.*, creating, applying, retrieving, using and updating user profiles). Among other things, as I summarized in Sections IX.B.3 and IX.B.4 above, both Singh and Rovik disclose systems that update and store vehicle profile settings. For example, in Singh, its system updates and stores user profile settings within vehicle memory, and Rovik discloses a system whereby data exchange (such as user profile settings) occurs between a vehicle and an external location (such as a remote server).

349. Singh and Rovik are directed to the same problem: improved system and methods for increased user convenience and ease for creating, saving, updating, and restoring user preferences and data, such as for vehicle settings—like the '243 patent. Ex. 1008 at Abstract, [0001]-[0004]; Ex. 1007 at Abstract, 1:6-2:29; Ex. 1001 at Abstract, 3:20-64. This is further evidenced by my summary of these references in Sections VI.A, IX.B.3, and IX.B.4.

350. As I explain below and as evidenced by the state of the art, a POSITA would have been motivated to apply a common database architecture (*e.g.*, in a standardized format and with common settings) to user profiles such that the profiles can be used and applied across vehicles (*e.g.*, so that settings can be carried

over from vehicle-to-vehicle for different makes and models, as well as vehicle types without requiring a user to manually reset preferences each time the user utilizes a different vehicle, such as owned, leased, rented, or borrowed). Ex. 1007 at 1:11-2:5, 3:18-31, 9:14-53, FIG. 5; Ex. 1009 at 1:15-40, 6:13-34, 7:45-67, 12:13-30, 13:15-31; Ex. 1006 at [0037]-[0038], [0042], [0086]-[0087]; Ex. 1015 at Abstract, 1:24-2:19, 2:52.

351. For example, as I explained in Section IX.B.3, Rovik explains the desirability of enabling adjustments to vehicle settings to be automatically applied to different vehicles including transferring profiles between vehicles via servers. As a further example, Rovik explains the need to transfer and apply settings when users use different vehicles:

Vehicles often include components which can be adjusted by a user of the vehicle. Such adjustable components can include adjustable seats and mirrors. In addition, some vehicles can store position settings for such adjustable components as a group of position settings for a particular user of the vehicle. In such vehicles, the user can automatically adjust the adjustable components in accordance with their position settings by selecting the group of position settings.

One limitation of the foregoing automatic adjustment is that the settings are only available in one vehicle. If a user drives a different vehicle, they must adjust the settings for many of the adjustable components. In addition, if the different vehicle is unfamiliar to the driver, such as a rental car that is a different make or model from the user's usual vehicle, the user will likely spend more time searching for their preferred settings. In view of these problems, one aspect of the present

disclosure involves storing user settings at a server remote from a vehicle so that the user settings can be transmitted to different vehicles for the user.

In one embodiment, a user of a vehicle is identified with a user key associated with the user. The user key and a vehicle identifier associated with the vehicle are transmitted to a server remote from the vehicle. In turn, at least one user setting is received from the remote server. The at least one user setting relates to the user key, the vehicle identifier, and a position of at least one component of the vehicle. A vehicle system setting stored in a memory of the vehicle is updated with the at least one user setting. When the vehicle system setting does not correspond with the at least one user setting, the position of the at least one component is adjusted based on the at least one user setting. **By receiving the at least one user setting from the remote server, it is ordinarily possible to automatically adjust positions of components in different vehicles based on the at least one user setting.**

According to a further embodiment, an input is accepted from the user to adjust the position of the at least one component and the vehicle system setting is changed in accordance with the accepted input. The changed vehicle system setting is transmitted to the remote server so as to update the at least one user setting with the changed vehicle system setting. **This arrangement ordinarily allows for the adjustment of positions of components in different vehicles based on changed preferences of the user.**

Ex. 1007 at 1:11-56 (emphasis added).

352. Rovik also discloses that the user profiles are intended to be applied to “vehicles of different makes and models,” Ex. 1007 at 2:1-5, as well as various “types of vehicles” such as “passenger automobiles,” “trucks”, “boats,” etc. Ex. 1007 at 3:20-31. Rovik further explains, regarding Figure 5 and as I explained in

Section IX.B.3, to have user profiles (such as 510 and 512) that include common setting options and common organization (namely, in a template format) such that they can be used to generate user settings for different vehicles. Ex. 1007 at 9:3-51, FIG. 5 (disclosing common setting options that may be updated for a particular user including, *e.g.*, so that “[a]s with the physical attributes ... the user preferences can also be used to generate new user settings for vehicles or vehicle types not driven by the user before”).

353. Other examples again confirm these concepts. For example, as I explained in Section IX.B.2, Poulsen discloses storing user profiles, including updates or changes, at a vehicle and external locations for user convenience and to save time when applying user profiles to a different vehicle. As a further example, Poulsen discloses that “[t]he use of profiles is **a convenient way to save time** in performing various types of tasks.” Ex. 1006 at [0002] (emphasis added); *see also* Ex. 1006 at [0037]-[0038], [0042], [0086]-[0087]. Poulsen also discloses that its profile process “will allow the user to re-create the desired environment very quickly and easily.” Ex. 1006 at [0085].

354. As another example, as I explained in Section IX.B.5, Cazanias explains the need and desirability to allow a user profile to be recalled in multiple vehicles, including those vehicles the user does not typically operate. As a further example, Cazanias discloses:

In recent years, many vehicles have utilized a driver's profile in order for a user to quickly recall settings for a number of user configurable features, such as, seat position, positions of mirrors, one or more pedal positions, radio stations presets, HVAC settings, navigation screen configuration, and the like. A user profile is stored in a memory on the vehicle, such as in an electronic control unit ("ECU") of the vehicle, or other controller or computer on the vehicle. Many such vehicles today can store profiles for a number of different users. Each user can adjust any or all of the user configurable features of the particular vehicle to the user's desired settings, and save these setting to the memory of the vehicle as the user's own user profile. Therefore, if multiple users regularly operate the vehicle, such as a husband and wife, each user may store a user profile on the vehicle, and quickly restore all of their settings when they get in the vehicle by recalling their own user profile. However, if a user gets into a different vehicle, such as a rental car, they have to again adjust every user configurable feature to a desired position. This can be a time consuming exercise, and may be further complicated in a vehicle the user is not accustomed to driving, such as a rental car.

Hence a need exists for a system to allow a user profile to be recalled in multiple vehicles, even a vehicle the user does not typically operate, or a different type of vehicle from what the user typically operates.

Ex. 1009 at 1:15-40 (emphasis added); *see also* Ex. 1009 at 6:13-34, 7:45-67, 12:13-30, 13:15-31

355. As yet another example, Penilla explains transferring and sharing user profiles across vehicles, which a POSITA would likewise have understood to be beneficial (*e.g.*, so that the user does not need to manually reset settings for new vehicles as commonly known in the art to be advantageous):

Methods and systems are provide[d] access to cloud services over the Internet for managing a user profile of a vehicle on a cloud processing system connected to the Internet. One example method includes receiving requests to access the user profile to define settings for one or more vehicles. The method includes receiving input to user settings at the vehicle at the cloud processing system. The method includes processing the input over time to learn behavior associated with the input to the use settings. The method includes transmitting settings to the vehicle to be automatically implemented based on the learned behavior. The method being executed by a processor. The profile can be transferred to one or more vehicles, can be set for a temporary period of time, can be set with wireless payment systems, and is accessible over the Internet to accept changes or updates.

Ex. 1015 at Abstract; *see also* Ex. 1015 at 1:24-2:19.

356. The state of the art also—along with the disclosure and admissions in the '243 patent—confirms that a POSITA would have understood that it would have been a simple modification to transmit and share user profiles (including with a common data structure) among devices, such as vehicles and servers, mobile devices, etc., using conventional techniques such as the Internet, Bluetooth, a wireless network and the like (including, as discussed above in this section and in Sections IX.A and IX.B, to allow for the same user profile to be used across different vehicles a user may own, lease, rent, or otherwise use). Ex. 1006 at [0086]-[0087]; Ex. 1007 at 1:11-56, 3:54-4:7, 8:60-9:64, FIG. 1; Ex. 1009 at 1:15-40, 5:37-53, 6:13-34, 7:45-67, 12:13-30. This again is a simple client-server operation that was well-known in the art using typical database structures. I again also note that

the '243 patent relies on known, conventional components and techniques for transmitting, storing, and updating user profiles (such as known servers, memory, processors, communication networks, etc.), Ex. 1001 at 19:30-20:11, 92:66-93:67, which provides further confirmation to a POSITA that there would be no technical difficulties in doing so.

2. Claim 9

“The system of claim 1, wherein the user profile is based on a template for the one or more preferences, and the updated user profile is created relative to the template.”

357. Singh in view of Rovik discloses, and it would have been obvious to include as part of Singh, *“wherein the user profile is based on a template for the one or more preferences, and the updated user profile is created relative to the template.”*

358. As I explained in Section IX.B.3 above, Rovik discloses “example user profiles 510 and 512” stored in a hard disk drive (HDD) in Figure 5, reproduced below, that include **common setting options and common organization**, such as “Preferred Music Genre,” “Default Volume Level,” among other common attributes and preferences, which can be updated for particular users (such as user 10 for profile 510 and user 12 for profile 512). Ex. 1007 at 9:3-54; *see also* Ex. 1007 at 7:8-37.

User Profile 510	
User Key	CB1906X
User Eye Point	1.1
User Hip Point	2.4
Recline Value	3.6
Lumbar Value	5.0
Mirror 1 Value	0.82
Mirror 2 Value	0.71
Arm Length	2.1
Preferred Music Genre	Classic Rock
Default Volume Level	4.2
Scheduled Location	L1:0800 M-F
Background Image	—
Language	English
Units	English
Location 1	Home: 1060 W. Addison
Location 2	Work: 600 Anton
Mobile Device 1	John's Phone
Temperature Setpoint	73° F

User Profile 512	
User Key	WS2005Y
User Eye Point	-0.8
User Hip Point	-0.9
Recline Value	4.1
Lumbar Value	0.0
Mirror 1 Value	0.74
Mirror 2 Value	0.76
Arm Length	1.2
Preferred Music Genre	Hip Hop
Default Volume Level	4.9
Scheduled Location	—
Background Image	sox.jpg
Language	English
Units	English
Location 1	Home: 333 W. 35 th St.
Mobile Device 1	Bob's Phone
Mobile Device 2	Bob's Laptop
Temperature Setpoint	71° F

FIG. 5

Ex. 1007 at FIG. 5.

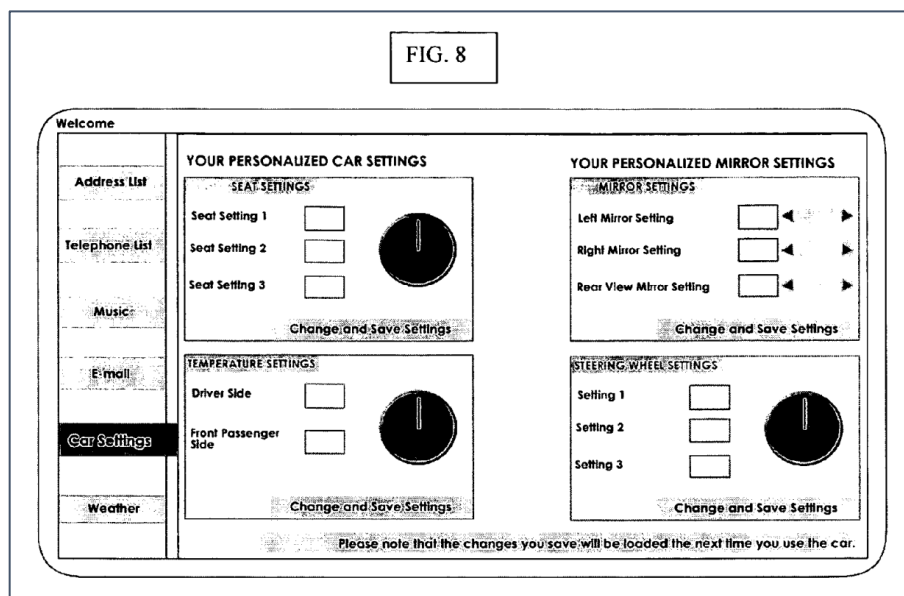
359. Rovik also discloses, in the context of Figure 5, that “these user preferences represent settings made by the user ... have been **standardized** by the server 400 so as to apply to a standard vehicle” (which a POSITA would have understood to indicate that they are based on a template, and as per Rovik, then updated for a particular user). Ex. 1007 at 9:37-40 (emphasis added).

360. I note again that this is also consistent with Patent Owner’s infringement theory, where it asserted that a “template” is simply “a database with a consistent structure so that settings and preferences can be associated with a user profile across different devices, systems, or vehicles.” Ex. 1025 at 10.

361. Moreover, a POSITA would have understood the well-known and advantageous nature of including a datafile with consistent structure for user profiles such that—as explained in Rovik and known in the art—the profiles could readily be transferred and applied to a new vehicle or vehicle type. Ex. 1007 at 1:21-2:5, 3:20-31, 9:3-51; Ex. 1018 at Abstract, [0020]-[0021], [0046]; Ex. 1009 at 1:15-36, 3:49-67, 9:2-4; Ex. 1012 at 141. For example, beyond Rovik, Larsen explains to use a “predefined template” that “may define formatting rules, including organizational structure and content” and “define entry formatting for individual entries” which facilitates document creation and management. As another example, Cazanias explains to use common settings that are updated for each user and applied across vehicles. Ex. 1009 at 1:15-36, 3:49-67, 9:2-4. And, database structure was a well-known and common way to organize data within the database. Ex. 1012 at 141 (Microsoft Dictionary defining “database” as “[a] file composed of records, each containing fields” and a “database structure” as “[a] general description of the format of records in a database, including the number of fields, specifications regarding the types of data that can be entered into each field, and the field names used.”).

362. I note that the above is also consistent with Singh, which includes the same user setting options that may then be modified and stored (*e.g.*, “CarSettings File Name”). Ex. 1008 at [0024]-[0034]; *see also* Ex. 1008 at [0004]. Singh explains

that (i) “[t]he user profile will contain files with information and preferences of different drivers for features like Car Settings, Address List, Telephone List, Music List and other functions” and (ii) “[a]ll the information related to driver preferences will be saved in the files and saved onto the storage media which will be accessed by The Controller Unit.” Ex. 1008 at [0033]. Singh discloses that the user interface is the same for each user (such as in Figure 8, reproduced below), further indicating to a POSITA that the same settings are available for each user. That is, if the interfaces are the same across users, so too would the underlying database and structure in which the settings are saved.



Ex. 1008 at FIG. 8.

363. It is also consistent with the state of the art that such user-profile databases were organized consistently with the various settings and then updated.

Ex. 1020 at [0006], [0023], FIG. 2 (common updateable user settings for vehicle features); Ex. 1015 at 7:32-45 (“customiz[able] profile” for a “vehicle manufacturer” saved to a “database”); Ex. 1012 at 141 (defining “database” and “database structure”); Ex. 1009 at 13:15-30 (user profile with common settings that are adjustable). This is also just like the ’243 Patent, which explains that a “template” is simply a “starting point” and that a “profile” can be effectively any known data storage. Ex. 1001 at 14:50-55, 17:54-62, 72:35-45, 72:60-73:24.

364. Accordingly, a POSITA would have understood, or at least found obvious, that such storage in Singh of the various parameters would be based on a template (including for the reasons explained above, as well as to enable efficient and consistent access and reinstatement of user settings as explained in Singh itself).

3. Claim 10

“The system of claim 9, wherein the template is a global standard template that is common among at least two vehicle manufacturers.”

365. Singh in view of Rovik discloses, and it would have been obvious to include as part of Singh, for basically the same reasons as claim 9, “*wherein the template is a global standard template that is common among at least two vehicle manufacturers.*”

366. As I explained above in Section X.G.2 (regarding claim 9) and Section X.G.1 (regarding motivation), Rovik discloses “example user profiles 510 and 512”

stored in an HDD in Figure 5 that include common setting options and common organization that are standardized to apply to a standard vehicle. Ex. 1007 at 9:3-54. As I also explained above in Section X.G.1 (regarding motivation), Rovik discloses that its user profiles are designed to be used with a variety of different vehicle types, makes and models:

- “By matching the vehicle identifier with the at least one user setting, it is ordinarily possible to facilitate adjustment of positions of components in vehicles having different shapes and sizes, such as **vehicles of different makes and models.**” Ex. 1007 at 2:1-5 (emphasis added).
- “In addition, if the different vehicle is unfamiliar to the driver, such as a rental car that is a **different make or model** from the user's usual vehicle, the user will likely spend more time searching for their preferred settings. In view of these problems, one aspect of the present disclosure involves storing user settings at a server remote from a vehicle so that the user settings can be transmitted to **different vehicles** for the user.” Ex. 1007 at 1:25-32 (emphasis added).
- “As shown in the example of FIG. 1, vehicles 100 and 200 are the same model or vehicle type (depicted as model A) having substantially the same geometric shape and dimensions. On the other hand, the vehicle 300 is a **different model or vehicle type** (depicted as model B) having a different geometric shape and dimensions from the vehicles 100 and 200. Although the vehicles 100, 200, and 300 are depicted as passenger automobiles in FIG. 1, it will be appreciated by those of ordinary skill in the art that the present disclosure is not limited to passenger automobiles and may include **other types of vehicles such as trucks, bicycles, motorcycles, or boats.**” Ex. 1007 at 3:20-31 (emphasis added).

367. Again, consistent with the disclosure in Rovik and the state of the art, a POSITA would thus have understood that the user profiles (and the underlying

common template) are designed to be used with a variety of vehicles and types, which would indicate to a POSITA that it would logically encompass vehicles from different manufacturers and brands. Ex. 1023 at 137-39 (disclosing importance of interoperability, standards, uniform components, and common onboard electronic specifications across shared vehicles from different automakers); Ex. 1015 at 15:52-58 (disclosing common access management system for different vehicle manufacturers whereby a “process is created so that some or all manufacturers use the same type of login/access management system”), 18:1-4 (“An automaker database 116 can include data regarding a plurality of vehicles, including standard user interfaces, configuration interfaces, and other information necessary to provide user Bob with a custom interface for vehicle 200.”), FIG. 7 (standard user interfaces across automakers “A,” “B,” “C” and “D”); Ex. 1009 at 1:5-2:54 (common user profile for different vehicles and types). Indeed, this concept is consistent with the stated goals in Rovik to allow for the user profiles to be transmitted and used across various vehicles. For example, consistent with the rental car situation disclosed in Rovik, rental car companies typically have fleets of vehicles from different manufacturers (Toyota, Honda, Ford, GM, Volkswagen, etc.). And, thus Rovik’s teachings would logically be applied across manufacturers.

368. Consistent with and confirmed by the above, a POSITA would have understood the advantages of including the described global standard template:

enabling the user profile to be successfully used across various vehicles. Ex. 1019 at [0067] (disclosing a “single universal template” which “contains all document elements” and results in a “master template [that] can be used as a market standard”); Ex. 1012 at 141 (defining database and database structured as I discussed above); Ex. 1007 at 1:23-2:29, 3:20-31, 9:3-54 (Rovik explaining profiles are to be used across different vehicles); Ex. 1009 at 1:5-44 (Cazanas explaining same, such as for rental vehicles); Ex. 1015 at 1:45-2:14 (Penilla explaining same).

369. I also explained above that, while claim 10 is obvious for the reasons given, it is all the more obvious under Patent Owner’s apparent construction. I again note that Patent Owner appears to take the position in its infringement contentions that two brands from the same manufacturer (Toyota and Lexus) qualify as claimed “*at least two vehicle manufacturers.*” Ex. 1025 at 10. While this is inconsistent with the ’243 patent, it further confirms the obviousness of claim 10. As to the inconsistency, I note that the ’243 patent describes a “Car Brand” as being from “a specific vehicle manufacturer.” Ex. 1001 at 76:35-50 (“Example of the Global Standard Template”).

370. And, again, the ’243 patent describes that a “template” is simply a “starting point” and that a “profile” can be effectively any known data storage, all of which was well-known and commonly used by a POSITA, further confirming

there is nothing inventive about the claimed templates. *See also* Ex. 1001 at 14:50-55, 17:54-62, 72:35-45, 72:60-73:24, 74:47-55.

4. Claims 19 and 20

371. As to method claims 19-20, as I explained in Section VI.C above, they correspond to system claims 9-10. Accordingly, Singh in view of Rovik renders claims 19-20 obvious for the same reasons as claims 9-10, as I discussed in the prior sections.

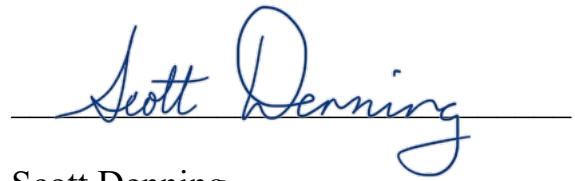
XI. Concluding Statements

372. In signing this declaration, I understand that the declaration will be filed as evidence in a contested case before the Patent Trial and Appeal Board of the United States Patent and Trademark Office. I acknowledge that I may be subject to cross-examination in the case and that cross-examination will take place within the United States. If cross-examination is required of me, I will appear for cross-examination within the United States during the time allotted for cross-examination.

373. I declare that all statements made herein of my knowledge are true and correct. I also declare that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 35 U.S.C. § 1001.

374. I declare under the penalty of perjury that the foregoing is true and correct.

Executed on April 4, 2025



Scott Denning