

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TOYOTA MOTOR CORP.,
Petitioner,

v.

EMERGING AUTOMOTIVE LLC,
Patent Owner

Case IPR2024-00786
U.S. Patent 9,171,268

DECLARATION OF DR. SAM MALEK IN SUPPORT OF
PATENT OWNER'S RESPONSE

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I, Dr. Sam Malek, declare under penalty of perjury as follows:

I. INTRODUCTION AND BACKGROUND

1. I have been retained as an expert witness on behalf of Emerging Automotive LLC (“Emerging Auto”) to provide information and assistance regarding U.S. Patent No. 9,171,268 (“the ’268 patent”). Specifically, I have been asked to consider the Petition for Inter Partes Review numbered IPR2024-00786 (“the Petition”) regarding the ’268 patent, and specifically the Declaration of Dr. Almeroth (EX1009) that accompanies the Petition.

2. In this declaration I provide my independent analysis of the ’268 patent in light of the materials cited below and discussed herein and my knowledge and experience in this field during the relevant time frame. I have been asked to consider what one of ordinary skill in the art at the time of the invention of the ’268 patent (a “POSITA,” *see* Section V below) would have understood from the specification, including scientific and technical knowledge related to the patent. I have also been asked to consider whether certain references anticipate or would have rendered obvious the inventions described in the claims of the ’268 patent.

3. My findings, as explained below, are based on my study, experience, and background in the fields discussed below, informed by my education and my extensive experience in the field of cloud-based processing systems. I have also relied on my review and analysis of the references identified by Dr. Almeroth,

information provided to me, and information that I have independently reviewed. I have personal knowledge of the facts and opinions set forth in this declaration, and, if called upon to do so, I would testify competently thereto.

4. I am being compensated for my independent analysis as an expert with respect to this *inter partes* review proceeding. My compensation is not contingent in any way on the content of my analysis, the opinions that I offer, or the outcome of this proceeding. I have no financial interest in Petitioner (Toyota) or Patent Owner (Emerging Auto) and I have no financial interest in the '268 patent.

II. QUALIFICATIONS

5. My qualifications for forming the opinions given in this declaration are summarized here and are addressed more fully in my curriculum vitae, which is submitted as EX2002. That exhibit also includes a list of my publications.

6. I have approximately 25 years of experience in the general area of computer and software technology in a variety of roles, including as a software engineer, software architect, and programmer at a variety of companies, as well as a researcher and professor at several universities.

7. I am currently a Full Professor of Software Engineering with tenure in the Informatics Department within the School of Information and Computer Sciences at the University of California, Irvine. I am also the Director of the Software Engineering and Analysis Laboratory ("SEAL"). My general research

interests are in the field of software engineering, and to date my focus has spanned the areas of software analysis and testing, mobile computing, architecture and design, and software dependability and security. The underlying theme of my research has been to devise techniques and tools that aid with the construction, analysis, and maintenance of largescale software systems.

8. I received my Ph.D. and M.S. degrees in Computer Science from the University of Southern California and my B.S. degree in Information and Computer Science from the University of California, Irvine. I have received numerous awards for my research contributions, including the Test of Time Award from the Association for Computing Machinery Special Interest Group on Software Engineering (2020), National Science Foundation CAREER award (2013), GMU Emerging Researcher/Scholar/Creator award (2013), and the GMU Computer Science Department Outstanding Faculty Research Award (2011).

9. I have authored over 130 peer-reviewed research publications. These publications have been highly cited (more than 11,000 times according to scholar.google.com). Many of my publications have dealt with the topics that are related to this proceeding, including distributed software systems, cloud computing, client-server architecture, and software settings and configuration. I provide a few examples here.

10. My Ph.D. dissertation resulted in novel algorithms for optimizing the deployment architecture of a distributed software system. The deployment architecture of a distributed software system is the allocation of its software components to its hardware devices. There are many deployments of a software system possible, but some may be superior to others with respect to certain quality of service objectives (e.g., latency, availability, security). One application of my dissertation work was in the context of cloud computing, because in most cloud-based software systems there are many geographically distributed nodes (servers) available for the deployment of software components.

11. I have also worked on techniques to leverage cloud computing for software testing. For instance, in an article titled “A Whitebox Approach for Automated Security Testing of Android Applications on the Cloud,” I showed how the resources in the cloud can be effectively harnessed to facilitate security testing at scale.

12. In another article titled “GLIDE: A Grid-based Lightweight Infrastructure for Data-intensive Environments,” I described the results of my work with colleagues from NASA in the development of a new distributed software system for sharing large amounts of data generated by NASA. This capability was the first of its kind in the realm of Grid Computing, which is a precursor to Cloud Computing.

13. I have also investigated how the user preferences with respect to certain settings can interact when users share a common physical space. For example, in an article titled “Towards Multi-Design of Situated Service-Oriented Systems,” I described an automated solution for resolving conflicts between user-preferred settings in shared physical spaces.

14. I have received numerous research grants from a variety of organizations, including the National Science Foundation (NSF), Federal Bureau of Investigation (FBI), Air Force Office of Scientific Research, Department of Homeland Security (DHS), National Security Agency (NSA), Defense Advanced Research Projects Agency (DARPA), Office of the Director of National Intelligence, and Army Research Office among others. Software systems and results produced in my research lab have been adopted for use by various organizations in both private (e.g., Boeing, Bosch) and public (e.g., NASA, DHS, FBI) organizations. Many of the above-mentioned projects and software systems involved analysis and design of client-server software systems deployed on the cloud. For instance, in a project called “RASS: Resilient Autonomic Software Systems” funded by Air Force Office of Scientific Research, I led a team of researchers to develop a new method of automatically adapting Air Force’s software systems to fluctuations in communication networks, thereby making them resilient to network interruptions.

15. I also have several years of experience as a software engineer, software architect, and programmer at a variety of companies, namely the Boeing Company, PricewaterhouseCoopers Consulting (later acquired by International Business Machines (“IBM”) Corporation), FieldCentrix, and Neural Computing Systems Lab. During my tenure in the industry, I gained professional experience in the design, development, and management of largescale software engineering efforts. Among the software systems that I designed and developed were commercial ecommerce and enterprise software systems. Many of the software systems developed in the context of my professional experience were built according to the general client-server architectural style and deployed on the cloud or cloud-like environments. In most of these systems, the server held the state of the distributed application, allowing for that state, such as the preferred user settings, to be transferred to client at runtime.

16. I have taught software engineering and computer science courses on a regular basis at the B.S., M.S., and Ph.D. levels at the universities where I have been employed. I cover concepts related to cloud computing, distributed software, client-server architectural style, and user preferences and settings in many of the courses that I teach at the university. Notably, I have regularly taught distributed software engineering courses at UC Irvine and previously at George Mason University (GMU). In these courses, I cover concepts such as the client-server architectural

style, cloud computing principles, and server-side storage of user-defined preferences.

17. I have been a frequent speaker at scientific conferences, symposia, workshops, and gatherings of software engineering academics and professionals. I have served as chair, committee member, and reviewer for numerous software engineering journals, magazines, and conferences. I have served on the editorial board of the ACM Transactions on Software Engineering and Methodology, IEEE Transactions on Software Engineering, the ACM Transactions on Autonomous and Adaptive Systems, the Springer Journal of Automated Software Engineering, and the Springer Journal of Computing. I am a member of the Association for Computing Machinery (ACM), ACM Special Interest Group on Software Engineering (SIGSOFT), and the Institute of Electrical and Electronics Engineers (IEEE). I have testified at trial and deposition as an expert witness in numerous cases in the past five years.

18. Because of my background, training, and experience, I am qualified as an expert in the technical areas relevant to the '268 patent and I am a POSITA.

III. MATERIALS CONSIDERED

19. In preparing this declaration and forming my opinions, I have considered: the claims, specification, and prosecution history of the '268 patent; the Petition and declaration by Dr. Almeroth (including all materials cited in each); and

all materials cited and discussed in this declaration. In addition, I have considered the relevant legal standards, as they have been explained to me by counsel and as I understand them. I have also considered the knowledge and understanding of a person of ordinary skill at the time of the invention of the '268 patent, of which I am familiar. As part of my analysis for this matter, I have also considered my own knowledge and experience, including my work and experience with cloud-based processing systems.

IV. LEGAL PRINCIPLES

20. In forming my opinions here, I have applied the following understanding of certain legal concepts related to anticipation, obviousness, combinations of references, and knowledge of one of ordinary skill in the art. Counsel for Patent Owner has informed me of legal principles that apply in this proceeding.

21. It is my understanding that assessing the validity / patentability of a U.S. patent claim based on a prior art analysis requires two essential steps. First, one must analyze the terms of the patent claims to understand what meaning one of ordinary skill in the art would give the terms. Second, one may then assess validity by comparing a patent claim to the “prior art.” I understand that the teaching of the prior art is viewed through the eyes of a person of ordinary skill in the art at the time

the invention was made. My opinion as to what constitutes a relevant person of ordinary skill in the art is set forth below.

22. I have been informed that in order for a patent claim to be invalid as anticipated by a prior art reference under 35 U.S.C. § 102, each and every element of that patent claim must be found disclosed in that reference, explicitly or inherently, to a person of ordinary skill in the art. Inherent disclosure requires that the claimed element be the only possible option given the other disclosures of the reference, and that it would be so recognized by persons of ordinary skill in the art. I also understand that the missing descriptive material cannot merely be probably or possibly present. If any single element of a claim is not disclosed in the reference, the entire claim is not anticipated. I understand that a prior art reference merely capable of being modified so as to operate in the same manner as the patented device or system does not anticipate. I further understand that obviousness is not inherent anticipation, and that it is insufficient that a missing limitation is so similar to a limitation actually disclosed in the reference that one of ordinary skill in the art would see the substitution as obvious. I understand that to anticipate, a prior art reference must be arranged or combined in the same way as in the claim. I also understand that, if it is necessary to reach beyond the boundaries of a single reference to provide missing disclosure of the claimed invention, the proper ground for asserting invalidity is not anticipation, but obviousness.

23. I understand that a claim is invalid as obvious under 35 U.S.C. § 103 if the differences between the claimed subject matter and the prior art are such that the subject matter as a whole would have been obvious at the time of the invention to a person having ordinary skill in the art.

24. I understand that a person of ordinary skill in the art provides a reference point from which the prior art and the claimed invention should be viewed. This reference point prevents one from using his or her own insight or hindsight in deciding whether a claim is obvious.

25. I have been informed that the following factors are used to determine whether or not the claimed subject matter would have been obvious: (i) the scope and content of the prior art; (ii) the differences between the prior art and the claimed invention; (iii) the level of ordinary skill in the field of the invention; and (iv) any relevant objective considerations of non-obviousness, such as commercial success, long-felt but unresolved needs, failure of others, etc.

26. I also understand that in considering the scope and content of the prior art, references must be reasonably related (i.e., analogous) to the claimed invention of that patent. I understand that the test for determining whether a prior art reference constitutes analogous art to the claimed invention is (1) whether the reference is from the same field of endeavor, regardless of the problem addressed and, (2) if the

reference is not within the field of the inventor's endeavor, whether the reference is still reasonably pertinent to the particular problem the inventor is trying to solve.

27. I understand that a party asserting obviousness based on a combination of prior art references must demonstrate that one of ordinary skill in the art would have been motivated to combine the teachings of those references to achieve the claimed invention and that the skilled artisan would have had a reasonable expectation of success in doing so. It is my understanding that it is not enough to show that one skilled in the art could combine elements of multiple references, but instead there must be some reason that would have prompted a person of ordinary skill in the art to combine the elements in the way the claimed invention does. I understand that there must be some reasoned explanation as to why one of ordinary skill in the art would combine the references. The reason cannot come from hindsight.

28. I understand that in considering whether a claimed invention is obvious, one may but is not required to find obviousness if at the time of the claimed invention there was a reason that would have prompted a person having ordinary skill in the field of the invention to combine the known elements in a way the claimed invention does, taking into account such factors as: (1) whether the claimed invention was merely the predictable result of using prior art elements according to their known function(s); (2) whether the claimed invention provides an obvious solution to a

known problem in the relevant field; (3) whether the prior art teaches or suggests the desirability of combining elements claimed in the invention; (4) whether the prior art teaches away from combining elements in the claimed invention; (5) whether it would have been obvious to try the combinations of elements, such as when there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions; and (6) whether the change resulted more from design incentives or other market forces. To find it rendered the invention obvious, the prior art must provide a reasonable expectation of success. Obvious to try is not sufficient in unpredictable technologies.

29. I understand that each claim must be evaluated separately for obviousness, and that it is improper to use hindsight. I understand that the disclosures in a patent or a prior art reference are viewed from the perspective of a person of ordinary skill in the art at the time of the invention. The obviousness analysis by a person of ordinary skill in the art must consider only what was known at the time of the invention.

30. It is my further understanding that obviousness cannot be based on a hindsight combination of components selected from prior art references. I also understand that an invention would not have been obvious simply because all of the elements of the invention may have been known separately in the prior art.

31. I understand that a combination of references would not have been obvious if the alleged modification(s) to be made to the reference(s) would have been inconsistent with the reference's stated goals or would have rendered the combination inoperable for its intended purpose. I further understand that for something to have been obvious, the party asserting obviousness must explain why a POSITA would have selected components for combination in the manner claimed.

32. I have been informed that a prior art reference must be considered in its entirety, i.e. as a whole, including portions that would lead away from the claimed invention.

33. I understand that with respect to claim construction, the proper construction is considered in the context of, and must be consistent with, the specification and that the claim language should be read in light of the specification and file history as it would be interpreted by one of ordinary skill in the art. I further understand that any claim interpretation that renders a claim term or phrase superfluous is disfavored.

V. PERSON OF ORDINARY SKILL IN THE ART ("POSITA")

34. Counsel for Patent Owner has informed me that a person of ordinary skill in the art is a hypothetical person who is presumed to have known the relevant art at the time of the invention. In my opinion, the relevant field of art for the '268 patent is that of cloud-based processing systems.

35. For the purpose of this Declaration, and based on my opinions herein, the time of invention for the '268 patent is April 2011. However, I understand that Dr. Almeroth opines that the time of the invention is October 2013. Any invention date from the early 2010s to the mid-2010s would not alter my opinion regarding a person of ordinary skill in the art. Thus my opinion regarding a POSITA applies to either a date of invention in April 2011 or a date of invention in October 2013.

36. I have been informed by counsel for Patent Owner that the person of ordinary skill is generally familiar with the type of problems encountered in the field and the prior art solutions to those problems and possesses an ordinary level of creativity.

37. I understand that Petitioner's expert, Dr. Almeroth, opined that a person of ordinary skill in the art "have had at least a four-year undergraduate degree in electrical engineering, computer science, or a closely related field, with at least two to four years of experience in the field of cloud services for settings customization. Additional education (such as a Master's degree in electrical engineering, computer science, or equivalent) could substitute for professional experience and vice versa." EX1009, Almeroth Decl., ¶ 82.

38. For purposes of this declaration, I apply Dr. Almeroth's definition. However, I note that the opinions I set forth below are applicable under any reasonable definition of a POSITA.

VI. BACKGROUND

A. Overview of the '268 Patent

39. The '268 patent, titled “Methods and Systems for Setting and Transferring User Profiles to Vehicles and Temporary Sharing of User Profiles to Shared-Use Vehicles,” was filed on October 9, 2013 and issued on October 27, 2015. '268 Patent, cover page. The '268 patent claims priority to multiple earlier applications, the earliest of which was filed on April 22, 2011. *Id.*, 1:15-28.

40. The '268 patent “relates to systems and methods for managing user profiles for vehicles and exchange of information with cloud-based processing systems.” *Id.*, 1:32-34. As the title of the patent shows, the patent relates to setting and transferring profiles to vehicles to apply settings of the vehicle for the user. *Id.*, Title, Fig. 10. As the '268 patent recognizes, “The Internet services provide access to cloud services. The cloud services provide access to user accounts and access to settings, configurations, applications and other customization defined by the user.” *Id.* 6:14-17. As the inventors of the '268 patent described, “The purpose of abstracting vehicle operators from the vehicle itself is a shift from the current state of the art in which settings are vehicle specific—each vehicle typically only having the ability to store 1-3 sets of settings, to where vehicle settings are user specific and 1-n logins can be managed through an access management system. The embodiments defined herein allow each user to apply his or her settings to any

vehicle based on their login information in which they provide their login and password.” *Id.*, 12:31-39. The ’268 patent transfers and applies user specific settings to various vehicles, such as a friend’s vehicle, a rental vehicle or a shared vehicle, for example, by determining the settings of the user profile that are compatible with the settable settings on the vehicle before transferring the profile settings for programming on the vehicle. *Id.*, 1:66-2:5, 2:59-3:5, 3:18-21, 12:15-45; 10:42-55, 16:34-17:14, 31:65-32:3, 33:1-26, 34:43-35:21.

41. The ’268 patent, claim 10, recites at 10[c], “determining, by the server, applicable settings for the selected vehicle, the applicable settings being settings that are preferred to be set as identified from the user profile and are compatible with settings that are settable in the selected vehicle[.]” *Id.*, claim 10. Dependent claim 14 recites an illustration of claim 10[c]’s “determining, by the server, applicable settings for the selected vehicle,” including “performing a mapping between settings associated with the user profile and settings obtained from an automobile database[.]” *Id.*, claim 14.

42. The ’268 patent, Figure 7 “illustrates an example of a user (Bob) that may wish to utilize a car 200, in accordance with one embodiment of the present invention.” *Id.*, 16:34-36. Figure 7 includes “a mapping engine 118 that determines information associated with car 200,” and “an automaker database,” that “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.” *Id.*, 16:64-17:2. In this example, the mapping engine 118 “includes a map [] that communicates with the automakers database to identify the settings, applications, APIs, or modules that allow integration of Bob’s user profile from the user profiles database 160 so that Bob’s profile can be sent to car 200.” *Id.*, 17:3-7. The illustrated example of Figure 7 further provides that the mapping engine “will obtain Bob’s profile 160 for cloud services and obtain vehicle information for the user interfaces of the vehicle desired for use by the user. The mapping engine 118 will the[n] transfer Bob’s profile to vehicle 200.” *Id.*, 17:7-13.

43. In this illustration, as shown in annotated Figure 7 below, the ’268 patent teaches that the user profile settings for Bob can be transferred to a friend’s vehicle, a rental vehicle or a shared vehicle, after the server determines the settings from Bob’s user profile that are compatible with the settings that are settable on the selected vehicle. *Id.*; *see id.*, Fig. 7:

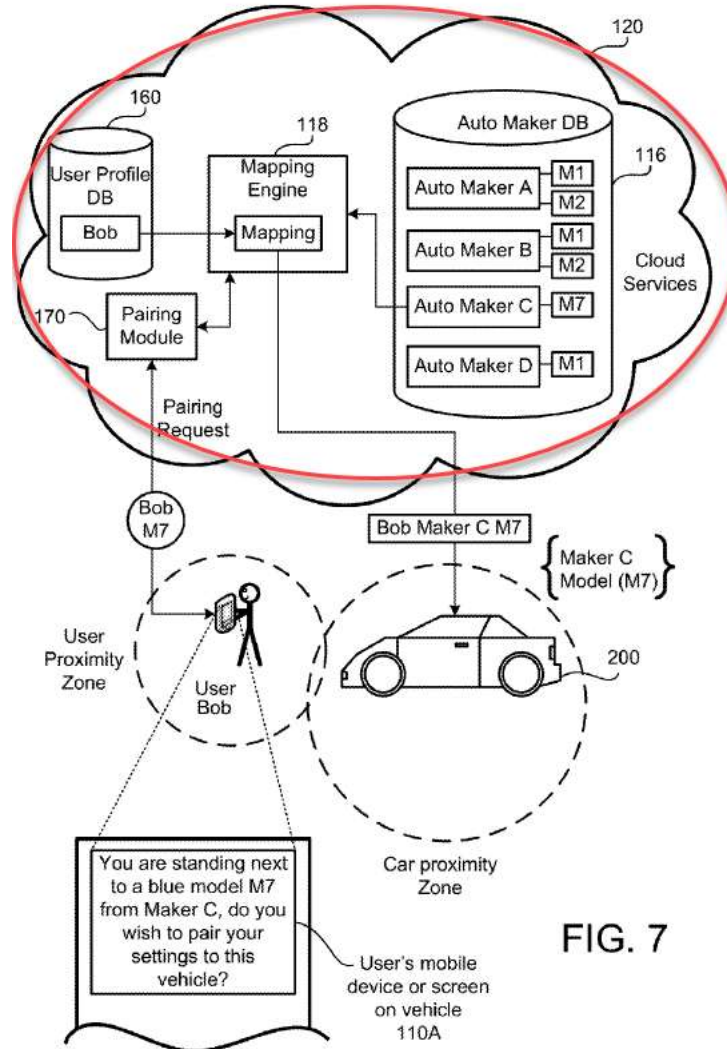


FIG. 7

B. Prosecution History of the '268 Patent

44. I also analyzed the prosecution history of the '268 patent in forming my opinions. Of particular relevance here, I disagree with Dr. Almeroth's opinions that a POSITA would ignore limitations of the claims. In my opinion, claim 10 expressly requires "determining, by the server, applicable settings ... that are preferred to be set as identified from the user profile and are compatible with settings that are settable in the selected vehicle." *Id.*, 33:1-26 (Claim 10). Similarly, independent

claim 20 requires “wherein certain of the user settings are determined to be compatible for use with the vehicle.” *Id.*, 34:43-35:21 (Claim 20). Claim 20 recites that its method is performed “via a cloud processing system.” *Id.* In my opinion, Dr. Almeroth ignores these limitations by stating that the claims do not “actively determine the applicable settings.” EX1009, ¶ 119. In my opinion, a POSITA would not ignore the limitations as Dr. Almeroth proposes, especially in light of the prosecution history, which demonstrates the meaning and importance of these limitations.

45. During prosecution, the Examiner rejected claims 1-20 in view of the *Hendrix* reference. The Applicant then made amendments to the claim to clarify their meaning and overcome the rejection. Specifically, the Applicant amended each of the independent claims 1, 10, and 20, and stated that the amendments were adding language on “the check for compatibility of settings” to each of these claims. EX1002, 128, 192-201, 203.

46. For example, the Applicant amended claim 10 as follows:
determining, by the server, applicable settings for the selected vehicle,
the applicable settings being settings that are preferred to be set as
identified from the user profile and are compatible with settings that are
settable in the selected vehicle; and.

Id., 196.

47. The Applicant similarly amended all independent claims, claims 1, 10 and 20, to clarify “the way in which the user profile is used to enable transfer of certain vehicle settings to the vehicle.” *Id.*, 203. For example, the Applicant made clarifications to independent claims 1 and 10, “such as the determination of vehicle settings that are determined compatible.” The Applicant further stated that vehicle settings that “are identified in the user preferences of the user profile.” *Id.*, 196, 203; *see also id.*, 203 (“claim 10 was also amended to clarify the determining, by the server, of applicable settings for the selected vehicle...”). Independent “[c]laim 20[a] was also amended to recite that certain of the user settings are determined to be compatible for use with the vehicle.” *Id.*, 203; *see also id.*, 200.

48. In discussing the amendments, the Applicant stated that the clarifying amendments provide for a “check for compatibility of settings, for when user profiles are to be transferred to vehicles.” *Id.*, 203. As the Applicant explained, the amendments to claim 10 clarified “the determining, by the server, of applicable settings for the selected vehicle,” and as claimed, “the applicable settings are settings that are preferred to be set as identified from the user profile and are **compatible** with settings that are settable in the selected vehicle.” *Id.* (emphasis in original). The Applicant provided examples from the specification (paragraphs 007 and 0075) “as examples of the check for compatibility.” *Id.*

49. Importantly, “as examples of the check for compatibility of settings,” Applicant specifically cited to paragraphs “007, 0075” of the specification. *Id.* In these paragraphs, the specification had described that a check for the compatibility settings that can detect a violation of a setting or an incompatible setting, allowing for an automatic notification to be sent to the profile administrator:

In one example, the profile is associated with a plurality of vehicle types and the method includes detecting a violation of a setting or an incompatible setting in the profile that is user defined via the user account. The method can then automatically send a notification to a predefined administrator of the profile.

Id., 37, ¶ [0007]. As another example, the specification described a transfer of profile settings, in which a user’s vehicle screen displays only those third-party applications that are compatible with the vehicle selected, or is allowed to display to the user all applications, regardless of compatibility:

The screen displays can have various configurations, placements ... and the user can provide controls for some or all of the interfaces and controls in certain locations. The selection can be enabled for third-party applications. ... The third-party applications can be pre-identified by the site and displayed to the user if they are compatible with the particular vehicle selected. In another embodiment, the third-party

applications can all be shown to the user whether or not they are compatible with the vehicle. ...

Id., 55-56, ¶ [0075]. The above-described examples are found in the '268 patent at EX1001, 1:66-2:5, 10:43-55.

50. The claims of the '268 patent therefore require the server/cloud processing system to perform a “check for compatibility of settings,” as the Applicant explained. EX1002, 203. And then the Applicant argued that the rejection failed because the *Hendrix* reference “does not teach to perform any compatibility between settings in the user profile against settings available on the specific vehicle.” *Id.*

51. The Applicant also cited to paragraph 018 of the specification to support additional claim 20 amendments. *Id.*, 203; *see also id.*, 39, ¶ [0018].

52. Based on the clarifying amendments, the Examiner withdrew the rejection and allowed the pending claims 1-20, explaining that “*Hendrix* does not teach to perform any compatibility between settings in the user profile against settings available on the specific vehicle[,]” and therefore “does not teach the transfer of user profiles to vehicles.” *Id.* In overcoming the rejection, a POSITA would recognize that the Applicant stated, and the Examiner agreed, that the amendments require a “check for compatibility” between settings in the user profile, on the one hand, and settings available on a specific vehicle, on the other.

VII. CLAIM CONSTRUCTION

A. The challenged claims require the server / processor perform a compatibility check.

53. It is my opinion that a POSITA would understand that each of the independent claims has limitations that require the server (or processor) performing a compatibility check between settings in the user profile against settings available on the specific vehicle. This compatibility check is supported by the language of the claims, as described further below, supported by the specification, as detailed in Section VI.A., above, and was used as a basis to overcome a prior art rejection during prosecution, as described in the preceding Section VI.B.

54. I have been informed that the parties in the district court litigation agree that claim elements 10[c] and 20[a] require the server / processor to perform a compatibility a check. For example, Defendants' Responsive Claim Construction Brief shows that "Toyota agrees that the server / cloud based system performs the compatibility check." EX2012 at 28.

55. The claim language of claims 10 and 20 support the server / processor performing a compatibility check. For example, claim 10[a] requires "the user profile defining one or more settings that are preferred to be set in *vehicles*." EX1001, 33:1-5. Claim 10[b] requires "identifying a selected *vehicle*." *Id.*, 33:6-10. Claim 10[c] requires that the server determine "applicable settings," which are

“settings that are preferred to be set as identified from the user profile *and are compatible* with settings that are settable in *the selected vehicle*.” *Id.*, 33:11-15. Therefore, to determine which settings are “applicable settings,” the server determines that [(1)] “settings that are preferred to be set as identified from the user profile *are compatible with* [(2)] settings that are settable in the selected vehicle.” EX1001, 33:11-15. Element 10[c] checks the compatibility of the settable settings in the selected vehicle with the settings from *the user profile*, “the user profile defining one or more settings that are preferred to be set *in vehicles* if the vehicles support the settings.” *Id.*, 33:1-5 (10[a]), 11-15 (10[c]). By “defining” the user profile as “one or more settings that are preferred to be set *in vehicles* ...,” the recited steps of the claimed invention enable the transfer of the user profile settings to any vehicle that supports compatible settings. *Id.*, 33:1-26. Claim 20 also requires that the recited processor of the cloud processing system performs this compatibility check. For example, Claim 20 recites “the user profile,” which is accessed by the vehicle, and the user profile has user settings for the vehicle, wherein “certain of the user settings are determined to be compatible for use with the vehicle.” *Id.*, 34:43-35:21.

B. Method Claim 10's step 10[a] occurs before steps 10[b] and 10[c].

56. It is my opinion that a POSITA would understand that the logic and grammar of claim 10 require an order of steps in which step 10[a] is a condition precedent to steps 10[b] and 10[c].

57. The first step of Claim 10, claim element 10[a], recites “receiving, at a server, information for *a user profile, the user profile defining* ...” EX1001, 33:1-5. For the next step, recited in element 10[b], a selected vehicle must be identified “for applying *the* user profile . . .” (i.e., “*the user profile*” recited and defined in the preceding step). *Id.*, 33:6-10 (element 10[b]); *id.*; 33:1-5 (element 10[a]). By the language of the claim, therefore, it is only after the server receives the required information for the user profile which defines “one or more settings that are preferred to be set *in vehicles if the vehicles support the settings*,” that the method of Claim 10 identifies a selected vehicle that is “available” and has “a plurality of settable settings” “for applying *the* user profile” introduced in the preceding step. *Id.*, 33:1-10.

58. Next, element 10[c] requires “determining, by the server, applicable settings,” ensuring the settings “from *the* user profile” of step 10[a] “are compatible with settings that are settable on *the* selected vehicle” identified in step 10[b]. *Id.*, 33:11-15 (step 10[c]). It is only *after* the selected vehicle is identified *for applying the user profile* (10[b]) that the server can “determin[e]” “applicable settings for *the*

selected vehicle” (10[c]). *Id.*, 33:6-15. To determine these “applicable settings,” element 10[c] ensures that *the* user profile settings from step 10[a]—“settings that are preferred to be set in vehicles,” “are compatible with” the settings that are settable in the selected vehicle. EX1001, 33:1-5 (10[a]); *see id.*, 33:11-15 (10[c], “applicable settings being settings that are preferred to be set as identified *from the user profile* and are compatible with settings that are settable in the selected vehicle”).

59. The plain language of Claim 10 shows that the user profile defined in element 10[a] is the antecedent basis for “the user profile” recited in elements 10[b] and 10[c]. Also, the operation of step 10[b]—“identifying a selected vehicle for applying the user profile” until after the user profile information is received by the server in the preceding step, element 10[a].*Id.*, 33:1-10. Likewise, the operation of element 10[c] until after the server receives “settings that are preferred to be set as identified from the user profile” (step 10[a]), and after identifying an available vehicle with settable settings (step 10[b]). *Id.*, 33:1-15.

60. A POSITA would understand, therefore, as a matter of logic and grammar, that element 10[a] is a condition precedent to elements 10[b] and 10[c].

VIII. SUMMARY OF CERTAIN REFERENCES

61. Below I provide a summary of certain references that are relevant to this declaration and my opinions expressed herein.

A. Xiao (EX1010)

62. U.S. Publication 2012/0164989 to Xiao (EX1010, “Xiao”) is titled “Methods and Systems for Providing a Wireless Automobile Key Service.” EX1010, cover page.

63. Xiao discloses a system in which an operator creates an account and each of the operator’s system preferences are separately preset and stored “for each automobile 112 on the account.” EX1010, ¶¶ 69-72. Using these preset “system preferences for each automobile 112 on the account,” Xiao’s system stores, retrieves and relays a command code corresponding to a particular setting that is preset for a particular vehicle on the account. *Id.*, ¶¶ 69-75. Xiao requires that each system preference that is set by the operator is necessarily vehicle-specific for each automobile 112 on the account. *Id.*

64. Xiao’s server only applies settings to the automobile 112 on the account for which to provide the disclosed wireless key service. That is, the system preferences, or settings, of Xiao are not transferrable among vehicles. *Id.* Each of Xiao’s settings must be configured to a specific vehicle and applied to that vehicle, and because these are preset for each automobile 112 on the account, there is no need for the claimed “compatibility check” or other claimed features of the ’268 patent.

65. Xiao’s system allows an operator to register for a “wireless automobile key service with automobile service system 104” “by creating an account with

automobile service system 104,” with each account being “associated with one or more automobiles 112.” EX1010, ¶¶ 31, 65. After registering and creating an account, the operator may download an “application 302,” allowing the operator, from his or her device, to set specific operator information, for example, “allowing the operator to set, configure, or modify the operator’s profile information 614.” *Id.*, ¶ 75.

66. Xiao’s “operator profile information 614” contains each setting or system preference, set individually by the operator, for each automobile on the account. *Id.*, ¶¶ 65, 69-74, Fig. 6. That is, Xiao’s “operator profile information 614” stores “system preferences for the operator for each automobile 112 on the account.” *Id.*, ¶¶ 65, 69-74, Fig. 6. And these “system preferences” set by the operator and stored in operator profile information 614 “may contain climate control system preferences for the operator for each automobile 112 on the account” (*id.*, ¶, 69), “audio system preferences for the operator for each automobile 112 on the account” (*id.*, ¶ 70), “comfort preferences for the operator for each automobile 112 on the account,” (*id.*, ¶ 71) “awareness system preferences for the operator for each automobile 112 on the account” (*id.*, ¶ 72), “engine system preferences for the operator for each automobile 112 on the account” (*id.*, ¶ 73), and “security system preferences for the operator for each automobile 112 on the account” (*id.*, ¶74). Therefore, each setting in Xiao is vehicle-specific.

67. Xiao also stores each setting of operator profile information 614 according to the automobile 112 for which to provide the disclosed wireless key service. Xiao stores each setting according to the “default automobile 112 for which to provide the disclosed service for the operator.” *Id.*, ¶ 77. Table 602 of Xiao Figure 6, for example, shows operator information 602, which includes “operator profile information 614,” storing “system preferences for the operator for each automobile 112 on the account,” along with the “default automobile 617” which “may identify, for each operator a default automobile 112 for which to provide the disclosed wireless key service.” *Id.*, ¶ 77. Xiao’s Figure 6, table 602, shows the operator’s system preferences for each automobile will be stored in operator profile information 614 of table 602, with each system preference corresponding to the “default automobile ID 617”:

OPERATOR INFORMATION					
OPERATOR ID	MOBILE ID	AUTHENTICATION INFORMATION	PROFILE INFORMATION	AUTOMOBILE PERMISSIONS	DEFAULT AUTOMOBILE ID
—	—	—	—	—	—
—	—	—	—	—	—
—	—	—	—	—	—

68. The “default automobile ID 617 may include a vehicle identification number (VIN) associated with the default automobile 112” or “other information that may be used to identify the default automobile 112 for which to provide the disclosed service for the operator.” *Id.*, ¶ 77.

69. Xiao's vehicle-specific wireless key service ensures each setting is vehicle-specific and non-transferrable. Xiao's system provides a wireless automobile key service page 900, which can be accessed via a mobile device or terminal device, to utilize the disclosed wireless automobile key service. *Id.*, ¶¶ 95-96. Before any command request on service page 900 can be accessed, however, Xiao's server automatically retrieves the "default automobile 112" and its corresponding operator profile information 614 for that vehicle, both of which were already preset by the operator. *Id.* That is, before the operator can issue any command request to apply a setting or "system preference" to a vehicle via service page 900, the server has already retrieved the default automobile 112 for which to provide the disclosed wireless automobile key service. *Id.*, ¶¶ 95-99, Fig. 9. For example, Xiao teaches that in order to access the services available through wireless automobile key service page 900, the operator must enter login data, the server authenticates that login, and "if server 118 properly authenticates the operator, server 118 may retrieve the operator's profile information 614 and default automobile ID 617 for the operator." *Id.*, ¶¶ 95-96. After the server retrieves the profile information 614 for that default automobile 112, the wireless automobile key service page 900 may display, e.g., via element 904, "the operator's climate control system preferences, audio system preferences, comfort system preferences, and/or awareness system preferences" for the automobile 112. *Id.* ¶ 105.

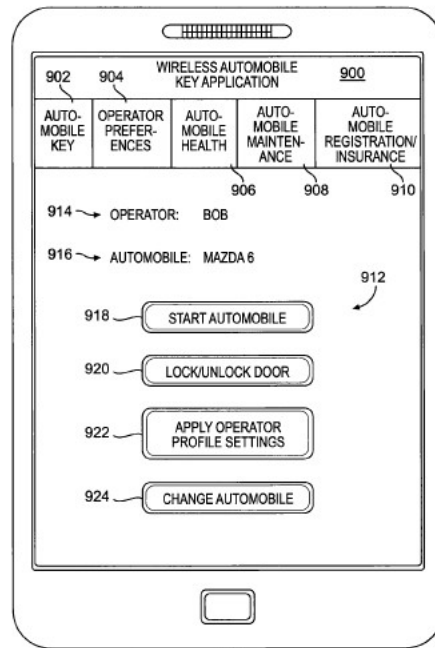


FIG. 9

70. Therefore, before displaying to the operator the “automobile key menu 912” of possible command requests, e.g., “start automobile,” “lock/unlock door” or “apply operator profile settings,” shown in Figure 9 above, the server has already authenticated the operator’s login and the server has already retrieved the operator’s “default automobile ID 617” (“used to identify the default automobile 112 for which to provide the disclosed service for the operator” (*id.*, ¶ 77)) and the corresponding “system preferences” for that automobile 112. *Id.*, Fig. 9, ¶¶ 95-102.

71. In other words, Xiao’s “automobile key menu” depicted in Figure 9 above will not display “an automobile name display 916” to “indicate the name of the automobile 112 currently selected for providing the disclosed wireless key

service” until after an authenticated login of operator “Bob,” and after the server 118 has retrieved the “default automobile.” *Id.*, ¶ 99, Fig. 9. Figure 9 shows that the “automobile 112” automatically retrieved by the server after Bob’s login is Bob’s “Mazda 6.” *Id.*

72. Xiao teaches that if the operator, Bob, wished to change the automobile from the automatically selected default automobile 112, Bob must select the “change automobile” user interface element 924 to “select[] a different automobile 112 on the wireless automobile key service account,” and “subsequently, the operator may be able to perform the various automobile key service with respect to the selected new automobile 112” “and may apply the preferences indicated in the operator profile information 614 to the systems of the new automobile 112[.]” *Id.*, ¶¶ 110-111, Fig. 9. That is, the operator must manually select a different automobile 112 on the account for which to issue any command request, e.g., apply that automobile’s profile information 614 system preferences to the systems of the new automobile 112. *Id.*, ¶¶ 95-99, 110-111, Fig. 9.

73. Therefore, Xiao’s command requests are not available to the operator until after the server selects the vehicle, displayed as 916, and after the server retrieves that automobile 112’s preset system preferences from the operator’s profile information 614. *Id.*, ¶¶ 95-97, 105, Fig. 6 (table 602).

74. In fact, Xiao's system further ensures that these command requests can only be vehicle-specific because Xiao's server retrieves the automobile 112 for providing the disclosed wireless automobile key service before the wireless automobile key application 900 displays "automobile key menu 912," which contains the available user interface elements for issuing command requests to that selected automobile 112—for example, "start engine," "lock/unlock," and "apply settings":

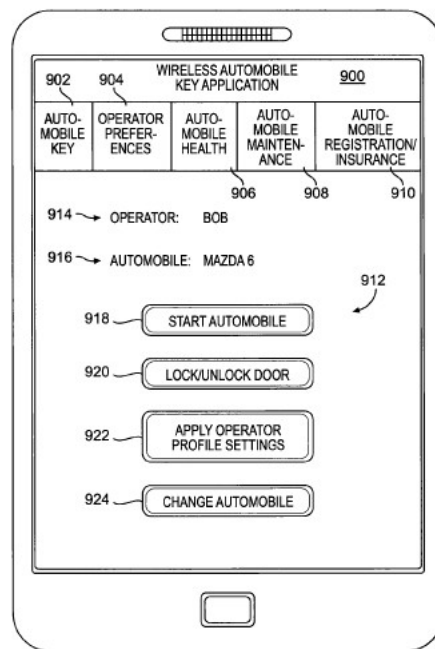


FIG. 9

Id., Fig. 9.

75. For example, by "selecting element 918 on a touch screen" of a mobile device or terminal device, that device "may transmit a start engine command

request” over the Internet, and “[s]erver 118 may receive the start engine command request from the Internet 108.” *Id.* ¶ 100. And each command request, in turn, contains a particular “automobile ID 628 and command ID 630” for that command request. *Id.* ¶ 88. The “automobile ID 628 and command ID 630 contained in a command request” allow “server 118 to look up a particular command code.” *Id.* Therefore, the “automobile ID 628” identifies and corresponds to a particular automobile 112 (*e.g., id.*, ¶ 86), and so too does the “command ID 630,” which is an ID for “each command that may be issued to the automobile 112” (*id.* ¶ 87). Table 606 of Figure 6 shows that the command ID 630 and command code 632 are stored together in table 606 of Figure 6, according to each automobile ID 628:

AUTOMOBILE COMMAND INFORMATION			606
628	AUTOMOBILE ID	COMMAND ID	COMMAND CODE 632
	—	—	630
	—	—	
	—	—	

Id., Fig. 6 (table 606).

76. For example, using the illustration in Figure 9, when an operator, Bob, selects element 918 from the touch screen to issue a “start engine” command request for the already-selected automobile 112 (displayed as “Mazda 6”), Xiao’s server can only retrieve the command code 632 particular to that specific automobile 112. *Id.* ¶ 100, Figs. 6, 9. “Using the automobile ID 608 and the command ID 630, server 118

may retrieve, from automobile command information 606, the command code 632 corresponding to the engine start command for the operator's automobile 112." *Id.*, ¶ 100, Fig. 6. And Xiao's system also follows this protocol when the operator, Bob, selects the "apply settings" element 922. *Id.*, ¶¶ 77, 95-96. As detailed above, Bob must first log in and when the server authenticates that login, the server retrieves the "default automobile 617" identifying "a default automobile 112 for which to provide the disclosed wireless automobile key service." *Id.* Thus, it is only after Bob's default automobile 112 is already selected that Bob can access "element 922" of the wireless key menu. *Id.* And since Bob's default automobile 112 is already selected at login authentication, and both the automobile ID 628 and command ID 630 are fixed to that automobile 112, when the server ultimately receives any "command request" issued by Bob via application 900, the server can only "look up a particular command code 632 based on the automobile ID 628 and command ID 630 contained in a command request received from mobile device 110[.]" *Id.*, ¶ 88.

77. By Xiao's system, therefore, Bob cannot issue any command request to apply any setting to any automobile until the server selects Bob's "automobile 112 for which to provide the disclosed wireless automobile key service." *Id.*, ¶¶ 86-88, 77, 100, Figs. 6, 9. And each command request contains the "automobile ID 628 and "command ID 630 for each command that may be issued to the automobile 112. *Id.*, ¶¶ 86-88.

78. Xiao teaches that each system preference or setting is vehicle-specific, including when the operator seeks to “apply operator profile settings” to “customize the settings” of the vehicle. Xiao discloses that when an operator, “Bob,” selects “apply operator profile settings UI element 922,” and the server receives the “operator profile command request,” the server retrieves from the corresponding profile information “certain desired settings of the systems of automobile 112.” *Id.*, ¶ 102. Based on those “desired settings of the systems of automobile 112,” the server uses “the command IDs 630 associated with the operator’s desired system settings 614” to retrieve the corresponding “command codes for these systems from automobile command code information 606.” *Id.* ¶¶ 102-103. Therefore, any command request, e.g., to apply any “desired settings of the systems of automobile 112,” is already fixed to a specific vehicle. *Id.* The server may only “look up appropriate command codes 632 based on the automobile ID 627 and the command IDs 630 associated with the operator’s desired system settings 614.” *Id.*, ¶ 103.

79. Xiao’s method for processing wireless automobile key commands, illustrated in Figure 11, confirms the vehicle-specificity of every setting in Xiao. For example, upon receiving a command request, with the “automobile ID 628 and command ID 630 contained in a command request” (*id.*, ¶ 88), the server “may generate one or more commands based on the command codes 632 to control the automobile systems to achieve the operator’s desired settings” (*id.*, ¶ 103). “[T]o

customize the settings [of] one or more systems onboard the automobile 112 based on a profile associated with the operator,” server 118 receives a command request containing the specific automobile ID and command ID for the command to be issued to that automobile 112. *Id.*, ¶ 126. Therefore, the server is limited to providing the “appropriate command code 632” for that vehicle. *Id.*, ¶¶ 103-104, 126, 87-88.

80. Xiao teaches that before any command request may be issued, its application page 900 already limits the possible options for applying any settings, since the automobile 112 has already been selected by the server for providing the wireless automobile key service immediately after operator login authentication. *E.g.*, EX1010, ¶¶ 95-96. Then, once the operator’s login has been authenticated and the server has retrieved the default automobile, which is displayed as automobile name display 916, the operator can select a UI element of key menu 912 from application 900. *Id.*, Fig. 9, ¶¶ 99-102. Then, if the operator wishes to issue a command request, for example, to “start engine” or “apply settings,” Xiao’s server is further limited by the “command request” itself, which contains the automobile ID 628 and command ID 630 that will only correspond to the “command code 632 associated with each command that may be issued to the automobile 112.” *Id.*, ¶¶ 87, 99-102.

81. Further, when Xiao’s server does “generate” a command, this operation too is vehicle-specific. In fact, Xiao teaches that the server generating a command is

the transmission of the retrieved command code 632 that corresponds to the vehicle-specific automobile ID and vehicle-specific command ID contained in the command request. *Id.*, ¶ 100 (upon server receiving “the start engine command request,” and “using the automobile ID 608 and the command ID 630,” server may retrieve “the command code 632 corresponding to the engine start command for the operator’s automobile 112[,] [t]hen server 118 may transmit the retrieved command code 632 to the automobile 112”), ¶ 101 (“[t]he lock/unlock door command may be generated and communicated to the automobile 112 in a similar manner as discussed above with respect to the start automobile command”), ¶ 102 (“automobile service server 118 may look up appropriate command codes 632 based on the automobile ID 627 and on the command IDs 630 ... [t]hen, automobile service server 118 may generate one or more commands based on the retrieved command codes 632”). Therefore, when the server “generates” a command to be transmitted to the automobile 112 for subsequent programming, the command code retrieved and relayed by Xiao’s server is necessarily vehicle-specific.

82. Xiao’s system does not allow any of its vehicle-specific settings to be transferrable to any other vehicle and therefore cannot perform one of the disclosed objectives of the ’268 patent: allowing the transfer of user profile settings between multiple vehicles.

B. Hayashi (EX1013)

83. I reviewed the translation of Hayashi, Japanese publication 2012-076627, that was submitted by Petitioner as Exhibit 1013 (“Hayashi”). Hayashi identifies a problem where a driver “mis-operates a vehicle he/she does not normally use,” such as a rental car, but it is “usually not possible for the driver to check the manual while driving.” EX1013, ¶¶ 2, 4. Hayashi endeavors to solve that problem by guiding the driver with “operating instructions” for the functions in the unfamiliar car. *Id.*, ¶¶ 2, 4, 123, 120, Abstract.

84. Hayashi teaches a comparison of the features of two vehicles: i.e., the vehicle reserved by a user and a vehicle with which the user is familiar (e.g., a vehicle owned or previously rented by the user), and if the vehicle is an “unfamiliar” one, Hayashi’s system will then identify the functions of the unfamiliar vehicle and compare the vehicle functions with those of a “familiar” vehicle. *Id.*, ¶ 122. Those vehicle functions, *Hayashi* teaches, are the car’s shift lever, parking brake, etc. *Id.*, ¶ 120. The “operating methods” are instructions for how to use those vehicle functions, such as where to find that shift lever or parking brake in the car. *Id.*, ¶ 122.

85. If Hayashi’s comparison reveals differences in the functions of the familiar and unfamiliar vehicles, then the “driving support apparatus” provides the driver visual and/or audio instructions for the driver, such as how to engage a parking brake. *Id.*, ¶ 0123. The “driving support apparatus” will supply those visual and/or

audio instructions for the driver, but then the driver must manually follow those visual and audio instructions to operate the vehicle functions, e.g., engage the parking brake. *Id.*, ¶¶ 2, 4, 122, 123.

86. The Petition and Dr. Almeroth identify vehicle functions as “user settings” (Pet. 46, “these functions may include *user settings* for the vehicle, such as ‘shift lever, parking brake’”), but the vehicle functions of Hayashi, such as a shift lever or parking brake, are not user “settings that are preferred,” as required by claim 10, and Hayashi has no teaching or disclosure for programming settings for any of its vehicle functions. Instead, Hayashi provides guidance to a driver on the manual execution of a task, for example, where to find or how to engage the parking brake on an unfamiliar vehicle, and it is then up to the driver whether and how to manually implement these instructions. EX1013, ¶¶ 122-123.

IX. DETAILED ANALYSIS OF PETITION GROUNDS

87. As I describe in detail below, it is my opinion that Dr. Almeroth and the Petition fail to demonstrate that any claim of the ’268 patent is invalid.

A. Xiao Fails to Anticipate or Render Obvious the Challenged Claims.

88. In my opinion, Dr. Almeroth and Petitioner fail to show that Xiao anticipates or would have rendered obvious any claim of the ’268 patent.

1. Xiao does not disclose elements 10[a], 10[b], 10[c], 20[a], or the order of steps required of claim 10.

89. In my opinion, Xiao does not teach or suggest the server / processor performing the compatibility check required of elements 10[c] and 20[a].

90. It is my opinion that Xiao does not disclose additional elements of independent claim 10. Element 10[a], recites “the user profile defining one or more settings that are preferred to be set in vehicles if the vehicles support the settings. EX1001, 33:1-5. Elements 10[b] and 10[c] recite operations involving “the user profile.” EX1001, 33:6-15. The antecedent basis for “the user profile” is element 10[a], therefore, for “the user profile” recited in elements 10[b] and 10[c], each setting is preferred to be set *in vehicles* (at least two). *Id.*, 33:1-15, 12:31-39 (“[t]he purpose of abstracting vehicle operators from the vehicle itself is a shift from the current state of the art in which settings are vehicle specific . . . to where vehicle settings are user specific . . . allow[ing] each user to apply his or her settings to any vehicle”). In my opinion, Xiao does not teach or suggest these claim limitations. Xiao’s system is configured to be one setting to one vehicle, or many settings to one vehicle, but never discloses any setting that is preferred to be set *in vehicles*. Xiao cannot disclose “applying *the user profile*” as required by 10[b] or “determining . . . applicable settings, the applicable settings being settings . . . from *the user profile* . . .” as recited in 10[c]. EX1001, 33:1-15. As such, it is my opinion that Dr. Almeroth

and Petitioner fail to demonstrate that any claim would have been anticipated or obvious under Grounds 1, 3a, and 4a. The Petition adds references Patenaude and Singh to Grounds 3a and 4a, however neither of these references cures Xiao's lack of disclosure of these elements of claim 10, and the Petition offers no argument or analysis to the contrary.

2. Xiao fails to teach the “compatibility check” of element 10[c] and 20[a].

91. I reviewed Xiao, including the specific disclosures identified by the Petition and Dr. Almeroth, and Xiao does not teach the server / processor performing the compatibility check. As I described in Section VII.A above, for claim elements 10[c] and 20[a], “Toyota agrees that the server / cloud based system performs the compatibility check.” EX2012 at 28. The '268 patent enables a user to set all settings “preferred to be set in vehicles,” and then, whenever a user enters a vehicle, all compatible settings are applied. This transfer of a user profile among vehicles is enabled by a compatibility check that involves the server determining whether two sets of settings are compatible with one another and are therefore “applicable settings for the selected vehicle”: (1) settings that are preferred to be set, as identified from the user profile and (2) the “settings that are settable in the selected vehicle.” EX1001, 33:11-15 (element 10[c]).

92. As the specification of the '268 patent explains, the “compatibility check” enables the transfer of settings among multiple vehicles: a “user profile defin[es] one or more settings that are preferred to be set *in vehicles*” (element 10[a]), and after “identifying a selected vehicle for applying the user profile” which has “a plurality of settable settings” (element 10[b]), the server then determines which settings are “applicable settings” by performing a compatibility check between “the user profile” settings and “the settings that are settable on the selected vehicle” before the server sends those “applicable settings” for programming to the selected vehicle (element 10[d]). EX1001, 33:1-21, Fig. 7, 17:3-7.

a. Xiao fails to disclose the required compatibility check functionality of 10[c].

93. The Petition and Dr. Almeroth identify Xiao’s disclosure of Figure 11’s “generate command” step as the required “determining” operation of element 10[c]. *E.g.*, Pet. 25-27, 63-67 (citing EX1010, ¶¶ 103, 126, Fig. 11). However, the “generate command” step fails to determine any compatibility at all, let alone compatibility between *settings from “the user profile”* and settings that are settable in the selected vehicle. No such determination can be made by Xiao’s server—by a “generate command” or other operation—because every setting in Xiao is vehicle-specific from the outset.

94. As I detailed in Section VIII.A above, Xiao makes clear that the “generate command” operation must always be vehicle-specific and merely relays the retrieved command code 632 that corresponds to the vehicle-specific automobile ID and vehicle-specific command ID contained in the command request. *Id.*, ¶¶ 100-102 (“automobile service server 118 may look up appropriate command codes 632 based on the automobile ID 627 and on the command IDs 630 ... [t]hen, automobile service server 118 may generate one or more commands based on the retrieved command codes 632”). Accordingly, when the server “generates” a command, there is no “determining” “applicable settings, applicable settings being:” (1) *the user profile* settings, “the user profile defining one or more settings that are preferred to be set *in vehicles*,” and are compatible with (2) settings that are settable in the selected vehicle. *See* EX1001, 33:1-15. The required compatibility check of claim 10 is not disclosed by a server’s limited relay of a vehicle-specific command code.

95. Additionally, neither the server’s “look up” nor its “retrieval” of “a particular command code” or of “appropriate command codes” discloses the required “determining ... applicable settings” functionality of element 10[c], since Xiao’s look up and retrieval of any command code is always fixed as vehicle-specific: i.e., “server 118 may look up a particular command code 632 *based on the automobile ID 628 and command ID 630 contained in a command request received* by the mobile device 110[.]” *Id.*, ¶ 88. Xiao teaches that it is only in

response to the vehicle-specific automobile ID 628 and vehicle-specific command ID 630—already contained in the command request—that the “server 118 may retrieve appropriate command codes 632” or “the server 118 may look up appropriate command codes 632.” *Id.*, ¶ 103. And, as explained in Section VIII.A above, before any command request can be issued, each system preference is already configured “for each automobile 112 on the account” (*id.*, ¶¶ 69-72, 99-102), and Xiao’s server selects the automobile 112—**before** the operator can issue any command request from page 900. *E.g., id.*, ¶¶ 98-99, Fig. 9, 95-96.

96. Xiao fails to perform a “compatibility check” between the settings from “***the user profile***”—which must be the antecedent “one or more settings that are preferred to be set ***in vehicles***”—and settings that are settable in the selected vehicle, at least because each setting, each automobile ID, each command ID and each command request is vehicle-specific. It is my opinion, therefore, that Xiao fails to disclose, let alone perform a compatibility check involving, “***the user profile*** defining one or more settings that are preferred to be set in vehicles” and “settings that are settable in the selected vehicle.” EX1001, 33:1-5 (claim 10[a]) (“the user profile defining one or more settings that are preferred to be set in vehicles...”), 33:11-15 (claim 10[c], “determining ... applicable settings ... applicable settings being settings that are preferred to be set as identified from ***the user profile*** and are compatible with settings that are settable in the selected vehicle”). A POSITA would

have recognized there is no need for any compatibility check in Xiao's static, vehicle-specific system, since Xiao, at best, pulls settings that are already specifically preset for and linked to the vehicle and are thus compatible.

b. Xiao fails to disclose the compatibility check functionality, as illustrated by its failure to disclose claim 14.

97. As described in Section VI.A above, dependent claim 14 illustrates one example of the recited compatibility check of element 10[c]. Xiao's failure to disclose the "performing a mapping" operation of claim 14 further highlights Xiao's failure to disclose the recited compatibility check of element 10[c]. EX1001, 33:61-34:3. Claim 14[a] recites that the server must be *capable of* determining "applicable settings" by "performing a mapping between settings associated with the user profile and settings obtained from an automobile database . . ." *Id.* As the specification of the '268 patent instructs, performing this mapping may include the use of a "mapping engine 118" "that communicates with the automakers database to identify the settings, applications, APIs, or modules *that allow integration of Bob's user profile* . . . so that Bob's profile can be sent to car 200." *Id.*, 17:3-7 (emphasis added). The specification provides an example of how this "integration" can be achieved, i.e., "a database can be accessed to find a translation metric" that allows for the user profile "settings to be transferred between functions of one vehicle to other vehicles." *Id.*, 22:7-20.

98. As explained in Section VIII.A above, Xiao’s “look up” operation fails to perform the recited “determining ... applicable settings” of element 10[c] at least because Xiao’s look up disclosure fails to involve “the user profile defining one or more settings preferred to be set in vehicles,” let alone performing the required compatibility check functionality between settings from “the user profile” and “settings that are settable on the selected vehicle.” EX1001, 33:1-15. For at least the same reason, Xiao’s look up operation cannot perform the mapping required of claim 14[a]: i.e., a mapping between settings associated with “the user profile” and settings obtained from an automobile database. *Id.*, 33:61-64; Pet. 57 (identifying Xiao’s “look up of a particular command code,” at EX1010, ¶ 88, as claim 14[a]’s recited “performing a mapping”)).

99. The “look up” operation of Xiao is functionally limited to the automobile 112 for which each of Xiao’s vehicle-specific settings was pre-configured. Therefore, the server’s “look up” of a particular command code, or of “appropriate command codes,” is always fixed to a specific vehicle, and therefore cannot allow integration of the user profile, defining one or more settings preferred to be set in *vehicles*.

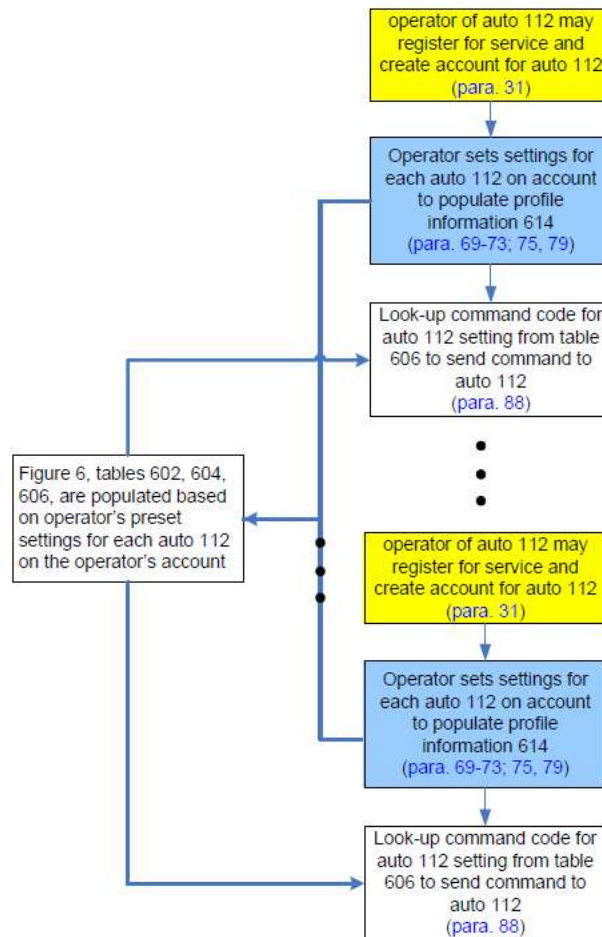
3. Xiao fails to teach “vehicle for applying *the user profile*,” as recited by element 10[b].

100. It is my opinion that Xiao fails to disclose elements 10[a] and 10[b] because the “current selected automobile 112” of Xiao is not “a vehicle for applying *the* user profile” of element 10[a]—i.e., a user profile “defining one or more settings that are preferred to be set *in vehicles*...” EX1001, 33:1-10. As I described in Section VIII.A above, both the “command request” (identified by Petitioner for the alleged disclosure of element 10[a]), and the “automobile name display 916,” indicating “the name of the automobile 112 currently selected for providing the disclosed wireless automobile key service” (relied on as to element 10[b]) are constrained to one, single vehicle. By contrast to the above-described objectives of ’268 patent, wherein a user profile having a set of “one or more settings” can be applied to many vehicles, Xiao is limited to applying any setting to one and only one vehicle.

101. As I detailed in Section VIII.A above, Xiao makes clear that its system can only apply vehicle-specific system preferences to *that* vehicle, never applying “one or more settings that are preferred to be set *in vehicles*.” EX1001, 33:1-5. Xiao’s system cannot disclose element 10[b], “a selected vehicle for applying *the user profile*,” because *Xiao* cannot apply *the user profile* defined by element 10[a]: “one or more settings that are preferred to be set *in vehicles*.” EX1001, 33:1-5. However Xiao’s server is constrained to apply only vehicle-specific system

preferences to that specific automobile 112, *at least because* (1) the operator configures settings, or system preferences, *for the automobile 112* (EX1010, ¶¶ 69-72), (2) Xiao's system stores system preferences only for the automobile 112 in operator profile information 614 according to that "automobile ID" (*id.*, ¶ 77, Fig. 6), (3) the server retrieves *the default automobile ID 617* and its corresponding operator profile information 614 after the operator's login is authenticated (*id.*, ¶¶ 95-96), (4) only after the "display the name of *the automobile 112*" "for which to provide the disclosed wireless automobile key service" appears on Xiao's page 900 (Fig. 9), will the system allow an operator to select touch screen UI elements 918 ("start automobile" command request), 920 ("lock/unlock door" command request), 922 ("apply operator profile settings" command request), corresponding to individual command requests for the "automobile 112 currently selected" (*id.*, ¶¶ 99-102, Fig. 9), and (5) when that command request is transmitted to the server, it already contains "*the automobile ID 628*" for which to provide the disclosed wireless automobile key service, and the "command ID 630 for each command that may be issued to *the automobile 112*" (*id.*, ¶¶ 87-88, 99-102). At every point, therefore, Xiao constrains its settings to be only vehicle-specific and likewise constrains its operations involving settings—the retrieval, look-up and application of settings are all vehicle-specific.

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



See EX1010, ¶¶ 31, 69-73, 75, 79, 88, Fig. 6.

103. In my opinion, Xiao fails to disclose element 10[b] because Xiao's settings are configured as vehicle-specific, stored as vehicle-specific, and applied according to a vehicle-specific command request, vehicle-specific command code retrieval, and vehicle-specific command code transmission onto *the automobile 112*. The above diagram, outlining teachings of Xiao, shows that for each vehicle, the user must (1) identify the vehicle when registering and creating an account, (2) set

settings that are stored to the relational database of *Xiao*'s Figure 6 for that specific vehicle, and (3) issue vehicle-specific command requests, allowing a server retrieval of vehicle-specific command codes when needed. As demonstrated in Section IX.A above, this prior art mechanism is not unlike the prior art problem described by the inventors at EX1001, 12:31-39, and for which the claims recite a solution to the problem.

104. It is my opinion, therefore, that *Xiao* cannot disclose the recited “identifying a selected vehicle for applying *the user profile*” (10[b]), “the user profile defining one or more settings that are preferred to be set *in vehicles*” (10[a]).

4. *Xiao* fails to disclose element 10[c] because each of its settings are always vehicle-specific and cannot be the recited settings from “the user profile.”

105. In my opinion, *Xiao* does not disclose element 10[c] because at least one of the two sets of settings to be determined “compatible” is missing from *Xiao* altogether: “settings that are preferred to be set as identified from the user profile.” EX1001, 33:11-15. *Xiao*'s system lacks “*the* user profile,” defined in element 10[a], which is “the user profile defining one or more settings that are preferred to be set *in vehicles* ...” EX1001, 33:1-5. *Xiao* does not disclose any settings that can be set in multiple *vehicles*, as the settings are specific to only one vehicle.

106. As I detailed in Section VIII.A above, each of *Xiao*'s settings or “system preferences” is always vehicle-specific, e.g., “audio system preferences for

the operator *for each automobile 112 on the account.*” EX1010, ¶ 70; *see id.*, ¶¶ 69 (same as to “climate control ... for each automobile 112 on the account”), 71 (same as to comfort system preferences). In fact, from the outset, i.e., upon registering and creating an account with the disclosed wireless automobile key service, Xiao’s operator configures system preferences “for each automobile 112.” *Id.*, ¶¶ 31, 69-75. Xiao’s system constrains the operator to configure (or later modify) each setting specific to a particular automobile 112. *Id.*, ¶¶ 69-75. Therefore, no setting in Xiao is “preferred to be set *in vehicles*,” but rather, is always fixed to a specific vehicle. *Id.*; EX1001, 33:1-5; 12:31-39.

107. Xiao’s system further ensures that each of the operator’s system preferences is fixed to a particular automobile 112 on the operator’s account because each of the operator’s system preferences for each automobile is stored in operator profile information 614 of table 602, wherein each system preference corresponds to “*a default automobile 112 for which to provide the disclosed wireless key service.*” *Id.*, ¶ 77. Xiao’s “operator profile information 614” stores “system preferences for the operator *for each automobile 112 on the account.*” *Id.*, ¶¶ 65, 69-74, Fig. 6. Accordingly, whether Xiao’s server “receives,” “retrieves,” or “look[s] up” any setting whatsoever, e.g., from the operator profile information 614, that setting is always configured and designated only for one specific vehicle. The vehicle-specific settings of Xiao are not the “one or more settings that are preferred

to be set *in vehicles*,” that claim 10 requires. EX1001, 33:1-5 (element 10[a]), 33:6-10 (“a selected vehicle for applying *the user profile* ...”) (element 10[b]), 33:11-15 (“settings that are preferred to be set as identified from *the user profile* ...”) (element 10[c]). In fact, each setting in Xiao can only be applied to one—and only one—specific automobile via a specific “automobile ID” for that automobile. Therefore, regardless of the wireless automobile key service being fulfilled by Xiao’s server, the system will always “identify *the default automobile 112 for which to provide the disclosed service* for the operator.” EX1010, ¶ 77. The disclosed *service* of Xiao is always vehicle-specific.

108. This vehicle-specificity also applies when *Xiao*’s server looks up “appropriate command codes.” EX1010, ¶ 103. The Petition and Institution Decision point to this disclosure of Xiao as allegedly disclosing the applicable settings of element 10[c]—before the parties agreed to the required “compatibility check.” Pet. 25-26, Institution Decision, Paper 11 at 27-28. But as shown in Section VIII.A above, those “appropriate command codes” are fixed as vehicle-specific, at least by the preceding “command request” received by the server, and by the storage of each command code 632 in table 606. EX1010, ¶¶ 69-75, 77, 87-88. 99-103. In my opinion, therefore, these “appropriate command codes” cannot be the result of the server’s compatibility check between the two required sets of element 10[c]: (1)

settings from “*the* user profile” and (2) settings that are settable on the selected vehicle. EX1001, 33:1-15.

109. As detailed in Section VIII.A above, Xiao teaches that the server may “retrieve” and “look up appropriate command codes 632 based on *the* automobile ID 627 and on *the* command IDs 630 associated with the operator’s desired system settings 614.” EX1010, ¶ 103. However, the “the automobile ID” is vehicle-specific, as is each “command ID 630.” *Id.*, ¶¶ 87-88, 100-103. Xiao’s automobile ID contains “information that may be used to identify the automobile 112.” *See, e.g., id.*, ¶ 86. Moreover, table 606 of Figure 6 contains “an automobile ID 628 associated with *the automobile 112.*” *Id.* Each automobile ID stored in table 606 is therefore vehicle-specific. Accordingly, a check to determine if the settings are compatible with the vehicle would make no sense in Xiao, as the settings were already set for that specific vehicle. *Id.*, ¶¶ 69-75.

110. Each command ID—used by the server to look up “appropriate command codes”—is likewise vehicle-specific. Xiao teaches that every command ID is “a command ID 630 for *each command* that may be issued to *the automobile 112.*” *Id.*, ¶ 87. Xiao instructs that each command ID 630 “may be the name of the command,” such as a power on/off command, temperature setting command, etc., and with each preset system preference configured “*for each automobile 112,*” table 606 stores “a command ID 630 for each command that may be issued to the

automobile 112.” *Id.*, ¶¶ 85-87; Fig. 6. Accordingly, each command ID is also vehicle-specific.

111. Moreover, it is only in response to the server’s receipt of a “command request” that Xiao’s server may retrieve or look up a command code 632. Xiao teaches that “server 118 may look up a particular command code 632 *based on the automobile ID 628 and command ID 630 contained in a command request received* by the mobile device 110[.]” *Id.*, ¶ 88. Accordingly, it is only in response to the vehicle-specific automobile ID 628 and vehicle specific command ID 630—already contained in the command request—that Xiao’s “server 118 may retrieve appropriate command codes 632” or “the server 118 may look up appropriate command codes 632.” *Id.*, ¶ 103. These “appropriate command codes 632” are already fixed to the automobile ID and the vehicle specific command ID and are likewise vehicle-specific.

112. As detailed in Section VIII.A above, any “appropriate command code” is already constrained by the vehicle-specific automobile ID and vehicle-specific command ID (*id.*, ¶¶ 85-88) and further constrained by the system preference which was already configured “for each automobile 112 on the account” (*id.*, ¶¶ 69-72), *before* any command request could be issued (*id.*, ¶¶ 99-102). Additionally, Xiao’s server selects *the automobile 112*—shown as the “automobile name display 916” to “indicate the name of the automobile 112 selected for providing the disclosed

wireless automobile key service”—*before* the operator can issue any command request. *E.g., id.*, ¶¶ 98-99, Fig. 9, 95-96.

113. Accordingly, the retrieval or look up of “appropriate command codes” by Xiao’s server cannot be the required “determining ... applicable settings” of claim 10, nor can these retrieved or looked up “command codes” disclose the “applicable settings” required of claim 10.

5. Xiao fails because the aspects relied on as to element 10[a] occur after those relied on for element 10[b].

114. The Petition and Dr. Almeroth rely on Xiao’s “command request” as the claimed “information” received by the server in element 10[a]. Pet., 20. The Petition and Dr. Almeroth next point to Xiao’s “automobile name display 916” as the claimed “identifying a selected vehicle” of element 10[b]. *Id.*, 23. But Xiao’s server cannot receive any “command request” until (1) *after* the operator’s login is authenticated (EX1010, ¶¶ 95-96, 99-102), (2) *after* the server selects the default automobile 112 for which to apply the disclosed wireless key service (*id.*), (3) *after* that selected automobile 112 is displayed as “automobile display name 916” to “indicate the name of the automobile 112 currently selected for providing the disclosed wireless automobile key service” (*id.*, ¶ 99, Fig. 9), (4) *after* the operator selects a touch screen element, e.g., element 918, 920, or 922, corresponding to a command request (*id.*, ¶¶ 98-102), and (5) *after* the mobile device or terminal device

transmits that operator-issued command request to the server (*id.*, ¶¶ 100-102). As shown in annotated Figure 9 below, Xiao's server cannot receive any “**command request**” until *after* the server retrieves “**the automobile 112 currently selected,**” reflected as “**automobile name display 916**”:

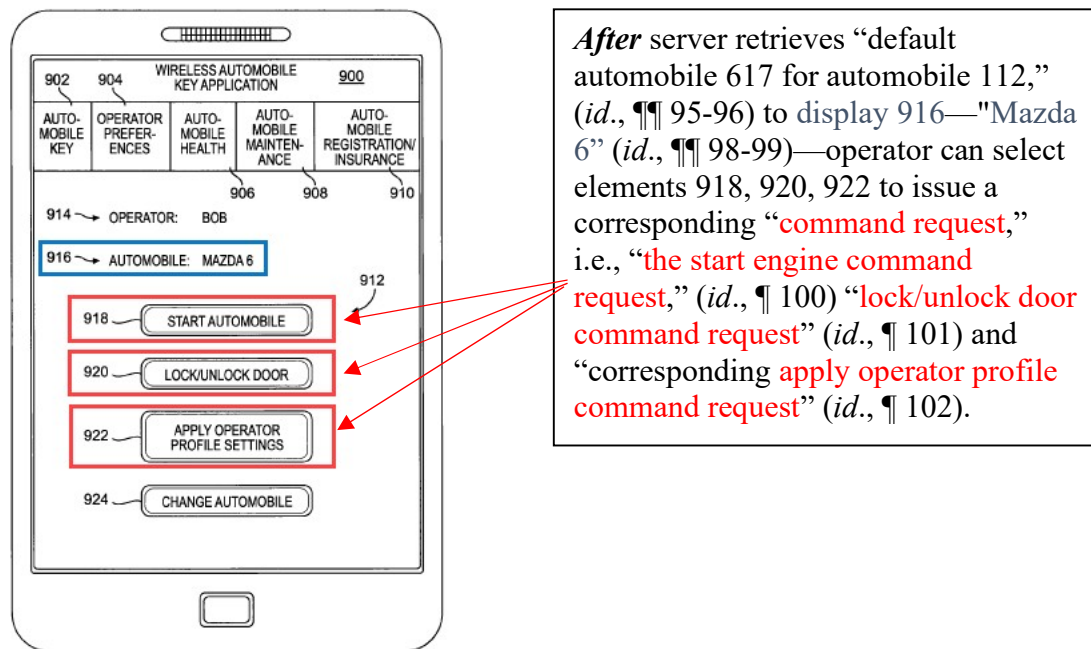


FIG. 9

EX1010, Fig. 9 (annot.), ¶¶ 95-96, 98-102; Pet. 19-24. It is therefore my opinion that the Petition cannot show that at least elements 10[a] and 10[b] are disclosed by Xiao in the order claimed because when Xiao's server receives a “command request” (relied on for element 10[a]), the vehicle displayed as “‘automobile name display 916’ that ‘may indicate the name of the automobile 112 currently selected’ (Mazda 6)” (relied on for element 10[b]) has already been selected. *Id.*, ¶¶ 77, 95-102, Fig.

9; Pet. 19-24. In other words, the disclosure relied on for element 10[b] concerns a selection that Xiao confirms is made before any command request can even be issued, and certainly before a command request can be received by the server.

6. **Xiao fails to disclose elements required of Claims 17, 18 and 19.**

115. It is my opinion that Xiao fails to disclose the “sub-user accounts” recited in claims 17 and 19. Claim 17 recites “the method of claim 10, further comprising: associating one or more **sub-user accounts** to the user profile, the sub-user accounts having predefined privileges for the selected vehicle” EX1001, 34:16-20. Claim 19, dependent on claim 18, further requires that “particular **sub-user accounts** enable access to specific information concerning the selected vehicle . . . wherein said particular **sub-user accounts** are accessible over the Internet for viewing or control using a password.” EX1001, 34:35-42.

116. The Petition and Dr. Almeroth point to Xiao’s disclosure of a family account, with multiple operators, as allegedly disclosing the recited “sub-user accounts” of claims 17 and 19. Pet. 39-41 (citing EX1010, ¶¶ 66, 76). However, neither Xiao’s disclosure of a “family account,” nor Xiao’s storage of “information about each automobile operator on *the* wireless automobile key service *account*,” discloses the recited “sub-user accounts” of claims 17 and 19. EX1010, ¶¶ 66, 76 (emphases added). Also, Xiao does not provide any disclosure of “child accounts,” as argued by the Petition and Dr. Almeroth. *Id.* In Xiao, there is no disclosure of

“child accounts.” *Id.* Rather, Xiao instructs that “[o]perator information 602” may “include automobile permissions 616 associated with each operator on *the account*.” *Id.*, ¶ 76. For example, Xiao’s “family account” may include a “father and mother,” who “may have permission to operate every automobile 112 on *the account*.” *Id.* “Whereas a child may only have permission to operate the child’s automobile 112 or the family automobile 112.” *Id.*

117. Accordingly, as explicitly disclosed by Xiao, the relied upon family members are simply different operators on *one account*—i.e., “the account”—as opposed to the recited “sub-user *accounts*” of claims 17 and 19. *Id.*

118. Likewise, for paragraph 66, Xiao teaches that its system may store information about multiple operators on a single account, as opposed to any “sub-user accounts.” Pet. 39-41 (citing EX1010, ¶ 66) (“operator information 602 may contain information about each automobile operator on *the* wireless automobile key service *account*”). It is my opinion that claims 17 and 19 are not anticipated by Xiao. Xiao’s lone family account fails to disclose the “sub-user accounts” recited by claims 17 and 19. *Id.*, ¶¶ 66, 76.

119. It is my opinion that Xiao fails to disclose the required “administrator account” recited in claim 18. For claim 18, whether “the vehicle is associated with a car sharing system” (element 18[a]), or “the vehicle is a private vehicle” (element 18[b]), claim 18 requires “**using an administrator account.**” EX1001, 34:21-35.

The '268 patent demonstrates that an administrator account is one in which the administrator can create logins for additional users and users with specific “roles,” and per the express language of both 18[a] and 18[b], the “administrator account” must *at least* be able to “enable or disable settable settings of the selected vehicle.” EX1001, 34:24-27 (“the settable settings of the selected vehicle can be enabled or disabled using an administrator account”), 34:28-32 (“the settable settings of the selected vehicle can be enabled or disabled using an administrator account”). It is my opinion that Xiao provides no such disclosure.

120. For claim 18, the Petition and Dr. Almeroth again rely upon Xiao’s disclosure of a “family account,” wherein different account operators may have different limited “permissions,” however Xiao fails to disclose any administrator account, nor any account capable of *enabling or disabling the settable settings of the selected vehicle*, as required by claim 18. EX1001, (claim 18); EX1010. The relied upon “permissions” of Xiao refer to *which* automobile(s) an operator may operate, not anything regarding “settable settings of the selected vehicle.” EX1010, ¶ 76. Rather, Xiao teaches that the “automobile permissions 616 associated with each operator” may “identify the automobile(s) 112 the operator is permitted to operate.” EX1010, ¶ 76. These “permissions” as to which “automobile(s) 112 the operator is permitted to operate” fails to disclose “settable settings of the selected

vehicle [that] can be enabled or disabled.” EX1001, claim 18. Accordingly, it is my opinion that Xiao does not anticipate claim 18.

B. Patenaude does not disclose the required “sending” operation of element 12[c], therefore Grounds 3a and 3b both fail.

121. Grounds 3a and 3b each rely upon Patenaude for alleged disclosure of element 12[c]: “sending the learned settings to the user profile for use or transfer to the selected vehicle.” EX1001, 33:38-39 (claim 12[c]). In my opinion, Patenaude fails to disclose or suggest at least element 12[c], and therefore the obviousness combinations of Grounds 3a and 3b fail.

122. The Petition and Dr. Almeroth rely on Patenaude’s disclosure of “retrieval” operations, however “retrieving” is not the required “sending” operation of element 12[c]. Specifically, the Petition relies on Patenaude’s “processor 122 in the telematics unit 120” which “*retrieves* the user-specific entertainment selection profile stored in the in-vehicle memory” (Pet. 52, citing EX1011, ¶ 73), and “during stage S612, the telematics unit 120 powers-up at least one entertainment unit . . . based on the *retrieved* user-specific entertainment selection profile” (Pet. 53, citing EX1011, ¶ 74). However, neither of these “retrieval” disclosures of Patenaude is the recited “*sending* the learned settings *to* the user profile . . .” EX1001, 33:38-39. In fact, these disclosures cannot even suggest the required “sending” operation, as a

POSITA in this field would conclude that there is a significant difference between data being pushed (i.e., sending), versus data being pulled (i.e., retrieving).

C. Hayashi Fails to Cure the Deficiencies of Xiao.

123. For Grounds 2, 3b, 4b, and 5, the Petition and Dr. Almeroth point to a combination of Xiao and Hayashi only for alleged disclosure/suggestion of the server / processor check for compatibility of settings required of element 10[c] and 20[a]. Pet. 45 (proposing combination with “feature” of Hayashi for alleged disclosure of element 10[c]’s recited limitation: “compatible with settings that are settable in the selected vehicle”), 66-67 (same as to 20[a]: “determining certain user settings are compatible for use with the vehicle, it would have been obvious to implement this feature based on Hayashi”).

124. But Hayashi does not cure Xiao’s failure to disclose the claimed “the user profile, defining one or more settings that are preferred to be set in vehicles if the vehicles support the settings,” which is defined in element 10[a] and required by antecedent basis in at least elements 10[b] and 10[c], and the Petition makes no argument to the contrary. Pet. 45, 66-67. Nor does Hayashi remedy Xiao’s failure to disclose elements 10[a] and 10[b] as arranged in claim 10, and again the Petition offers no argument to the contrary. *Id.*

125. As I mentioned above, claim 10 requires “determining, by the server, applicable settings ... that are preferred to be set as identified in the user profile and

are compatible with settings that are settable in the selected vehicle.” Similarly, independent claim 20 requires “the user profile having user settings for the vehicle, wherein certain of the user settings are determined to be compatible for use with the vehicle.” As I discuss in Section VI.B above, both of these limitations require the server/cloud processing system to determine whether the user settings from the user profile are compatible against the settings that are available on the specific vehicle. And I discussed in Section VIII.A and IX.A.1.a.-b., Xiao does not teach, disclose or suggest this claimed functionality.

126. In my opinion, Hayashi fails to cure the deficiencies of Xiao. As an initial matter, it is my opinion that a POSITA would not have combined the two references as proposed. Moreover, even if the references could be combined, the combination would still fail to teach or suggest the claimed functionality.

1. **A POSITA would not have been motivated to combine Xiao and Hayashi as Dr. Almeroth proposes**

127. In my opinion, Dr. Almeroth fails to show that a POSITA would have found it obvious to combine Xiao and Hayashi as proposed. Indeed, it is my opinion that a POSITA would not have been motivated to combine the two references.

128. I disagree with Dr. Almeroth and the statements in the Petition, alleging that the Hayashi reference is analogous art and in the same field of endeavor as the ’268 Patent and Xiao. *E.g.*, Pet., 45-50, 64-67; EX1009, ¶¶ 189-192, 241-254. As

described in Section VIII.B above, Hayashi identifies a problem where a driver “mis-operates a vehicle he/she does not normally use,” such as a rental car, but it is “usually not possible for the driver to check the manual while driving.” EX1013, ¶¶ 2, 4. Hayashi offers a solution to that problem by giving the driver “operating instructions” for unfamiliar functions in the automobile. *Id.*, ¶¶ 2, 4, 123, 120, Abstract. Hayashi identifies when operating methods on a vehicle, such as a rental car, are unfamiliar to the driver, then offers guidance to that driver on how to operate the vehicle’s functions. *Id.*; *id.*, ¶ 122. Hayashi’s solution is a “driving support apparatus,” which provides the driver with visual and audio instructions on how to use unfamiliar vehicle functions. *Id.*, ¶ 123. Hayashi’s solution lets the driver manually implement these instructions. *Id.*, ¶ 123. Hayashi gives examples of some vehicle functions for which it gives the driver instruction, such as the vehicle’s shift lever or parking brake. *Id.*, ¶ 120. Hayashi describes the operating methods as instructions for how to use the vehicle functions, such as where to find the car’s shift lever or parking brake. *Id.*, ¶ 122.

129. Dr. Almeroth and Toyota claim that Hayashi is “applying settings to automobiles based on user preferences” but the reference does not support this claim. Pet., 45-50, 66; EX1009, ¶¶ 188-192; EX1013. Hayashi does not mention or suggest these or related concepts like “profiles,” “settings,” or “user preferences.” EX1013. Hayashi does not offer any teaching or suggestion about “applying settings to

automobiles based on user preferences.” EX1013. Hayashi does not involve a user profile wherein the user defines settings that a user prefers to be set in a vehicle. Therefore, Hayashi is not “applying settings to automobiles based on user preferences,” as the Petition and Dr. Almeroth contend. *E.g.*, Pet., 45-50, 66.

130. Again, as described above, Hayashi’s “driving support apparatus” provides the driver with visual displays and voice guidance. That guidance instructs the driver how to manually operate unfamiliar vehicle functions. EX1013, ¶¶ 2, 4, 123. For example, Hayashi instructs the driver on how to engage a parking brake. *Id.* Therefore, the teachings of Hayashi do not pertain to “applying settings to automobiles based on user preferences,” as the Petition and Dr. Almeroth state. Pet., 45-50, 66.

131. I also disagree with the assertion that Hayashi is “pertinent to the problem” of “improving convenience in applying settings to automobiles.” Petition, 45; EX1009, ¶ 192. As described above, Hayashi does not mention or relate to user settings, or applying any user settings, and does not offer any teaching about the transfer of settings that a user prefers to be set in vehicles, e.g., as identified from a user profile. EX1013. Hayashi is not “improving convenience in applying settings to automobiles” by guiding a driver through the manual implementation of tasks such as where to find and how to use a parking brake or shift lever. *Id.*; Pet., 45; EX1009, ¶ 192; EX1013, ¶¶ 122-123.

132. Neither the Petition nor Dr. Almeroth identifies any disclosure in either Xiao or Hayashi that would suggest to a person of ordinary skill in the art to seek out the other reference to solve the problem of automatically transferring user preferred settings that are compatible with settable settings on the vehicle. While both the Petition and Dr. Almeroth contend that Xiao's server should "not attempt to command vehicles to do things they cannot do, potentially resulting in unexpected and/or undesired vehicle configurations or errors" (Pet., 46; EX1009, ¶190), there is no disclosure in Xiao which states or suggests this concern. Similarly, neither the Petition nor Dr. Almeroth identifies any suggestion from the prior art to change the database of command information in Xiao, or to change the database of operating methods in Hayashi, such that a person of ordinary skill in the art would be led to the tables that have been created and reproduced in the Petition and Dr. Almeroth's declaration. Petition, 48, 66; EX1009, ¶¶ 195-196, 247-254.

133. The Petition fails to show, therefore, that a POSITA would ever combine Hayashi with Xiao, as they are not analogous art or in the same field of endeavor.

2. **Even if Hayashi was properly combinable, it does not teach or suggest Xiao's failures**

134. Even if the references were properly combined, it is my opinion that Hayashi would nevertheless fail to cure the deficient disclosures and teachings of

Xiao. The Petition and Dr. Almeroth rely on Hayashi in an attempt to cure the compatibility determination limitations of claims 10 and 20. It is my opinion that neither Hayashi nor the Xiao/Hayashi combination teaches or suggests those limitations.

135. Even if a POSITA were to make the Petition’s “minor modification” of Xiao, using Hayashi’s alleged disclosure of “compatible with settings that are settable in the selected vehicle” (Pet. 45), the result would not disclose or suggest element 10[c] or 20[a]. Rather, a POSITA would have recognized that combining Xiao and Hayashi as proposed by the Petition and Dr. Almeroth would be nonsensical and nevertheless fail to teach or disclose elements 10[c] or 20[a]. Indeed, the nonsensical result achieved by the combination would be that Xiao’s server, at best, in response to the command request issued by the operator, could “look up” a command code to apply a vehicle-specific setting to that automobile 112, only to find that there is “none.” Pet. 48, 67. Such a result nonetheless fails to disclose or suggest elements 10[c] and 20[a], let alone perform the compatibility check that enables the transfer of the user profile settings to multiple vehicles, as claimed in the ’268 patent.

136. In light of the detailed description of Xiao’s static, vehicle-specific system, it is not surprising that Xiao never contemplates the notion of compatibility. In Xiao, each setting, each server “look up” operation, each server “retrieval”

operation, and each server “generate command” operation is vehicle-specific—so there is no need to perform a compatibility check: each setting is already known to be compatible with its specific vehicle. Therefore, even by combining certain features of Hayashi when Xiao’s server retrieves command codes, as Petitioner proposes, the end result would not enable a server to determine applicable settings as defined in element 10[c] or the compatibility determination of element 20[a]. Pet. 48, 67. Instead, the addition of Hayashi, at best, would only apply in a scenario when there are *no* applicable settings because “none” may be stored in Xiao’s table 606 in lieu of “a command code 632 associated with each command that may be issued to the automobile 112” (Pet. 45, 67; EX1010, ¶ 88)—thus no “applicable settings” would be “determined” (or sent to the selected vehicle), as required by claim 10 or claim 20.

137. The Petition treats “the concept of compatibility determination” in a vacuum, while ignoring claim 10’s specific requirement that the server must determine “applicable settings for the selected vehicle.” EX1001, 33:11-15. For element 10[c] the server determines “applicable settings,” the applicable settings being *the user profile settings* from element 10[a] that “*are compatible with*” *the settable settings* from 10[b]:

Element 10[a]

Element 10[b]

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

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

EX1001, 33:1-15.

138. In Petitioner’s proposed Xiao/Hayashi combination, the server of Xiao retrieves or looks up a particular command code or “appropriate command codes,” an operation that is constrained by the vehicle specific “automobile ID 628” and vehicle-specific “command ID 630” contained in each **command request** (e.g., “start engine,” “lock/unlock door” and “apply operator profile settings”). EX1010, ¶¶ 88, 100-103. And working backward, that **command request** cannot be issued by an operator, i.e., via key menu elements 918, 920, 922, until *after* the server has retrieved “**automobile name display 916**” “**to indicate the name of automobile 112 currently selected for providing the disclosed wireless automobile key service,**” as shown in annotated Figure 9 below:

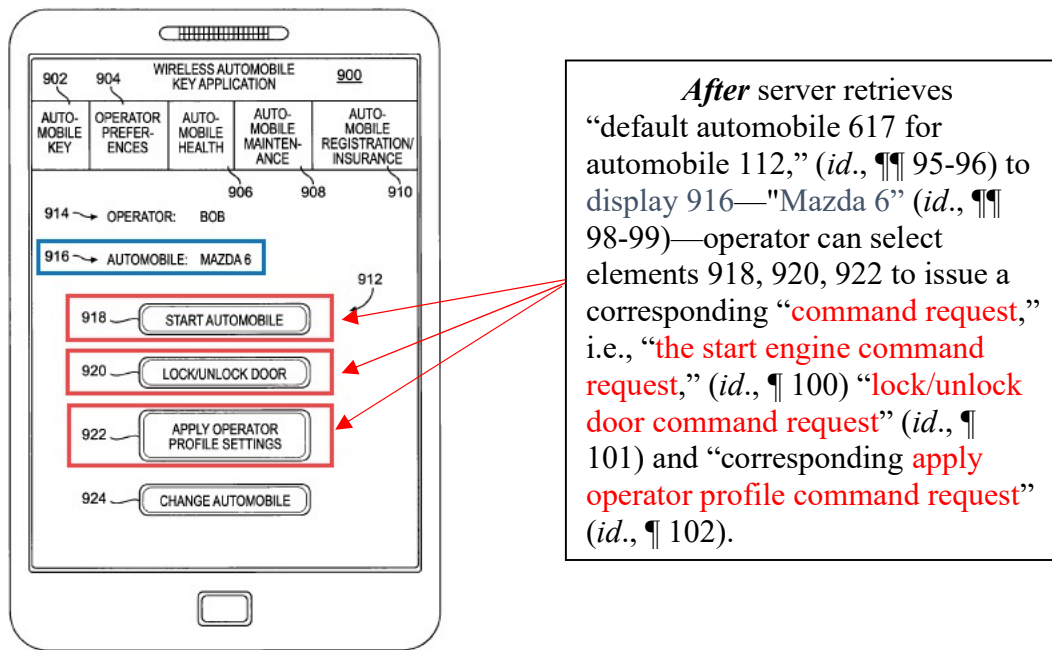


FIG. 9

EX1010, Fig. 9 (annot.), ¶¶ 95-96, 98-102. Xiao’s vehicle-specificity is required before any command request can be issued. Accordingly, Xiao can only retrieve command codes for one, specific vehicle.

139. In the proposed modification, Petitioner seeks to supplement this functionality of Xiao in view of Hayashi “to indicate that certain commands are compatible/incompatible with certain automobiles.” Pet. 48, 67. But this combination remains vehicle specific, as demonstrated in the table prepared by Petitioner below:

AUTOMOBILE COMMAND INFORMATION		
AUTOMOBILE ID	COMMAND ID	COMMAND CODE
—	—	—
—	—	—
—	—	—
1234	Abcd	None

Annotated Excerpt of Fig. 6 of *Xiao*

Pet. 48, 67 (annotated table prepared by Petitioner). Therefore, as an initial matter, the required compatibility determination of element 10[c] is not performed at least because, even when modified, *Xiao* has no “settings preferred to be set *in vehicles*.” *Id.*; EX1001, 33:1-5. Additionally, regardless of the proposed modification by Hayashi, each item of table 606 above remains vehicle-specific—that is, the server of *Xiao* will still use the vehicle-specific automobile ID 628 and the vehicle-specific command ID 630 in the vehicle-specific command request to look up the command code 632. The only additional operation achieved by Petitioner’s proposed combination is that the server will sometimes retrieve “none” when there is no such command code. Petitioner admits this vehicle-specific limitation: “[f]or example there may be an automobile having an automobile ID 628 for which a certain command ID 630 has no corresponding command code 632.” Pet. 49.

140. A POSITA would not have been motivated to include added functionality to *Xiao*. When *Xiao* pulls command codes using the vehicle ID, a

POSITA implementing the system would know the command codes are compatible with the vehicle, since they are specific to the vehicle. *Id.* Thus, all settings are compatible, and there would have been no reason to perform some sort of “compatibility check” to determine that none exist. *Id.*

141. And even if a person of ordinary skill in the art were motivated to combine Xiao with Hayashi, the proposed additional functionality of Hayashi would not have satisfied the claims. At best, Petitioner’s added operation to Xiao tells the server there is *no* “appropriate” or “particular” command code corresponding to the “automobile ID 628 and command ID 630” contained in the vehicle-specific command request. But this would not teach “determining ... applicable settings” or “sending ... the applicable settings ... to the selected vehicle”: there are no applicable settings. *See* EX1001, 33:1-26 (claim 10[c]). The combination would likewise fail to teach “certain of the user settings are determined to be compatible for use with the vehicle,” as recited by element 20[a], since “none” would at best tell the server that there is no command code corresponding to the vehicle specific command request. EX1001, 34:48-51 (claim 20[a]). Such a combination would not teach “determining” “certain of the user settings: there are no compatible user settings.

142. Accordingly, even with the added feature of Hayashi, as proposed by the Petition, Xiao's operator would still be left with a system that can only apply vehicle-specific settings to the vehicle already selected and displayed via page 900:

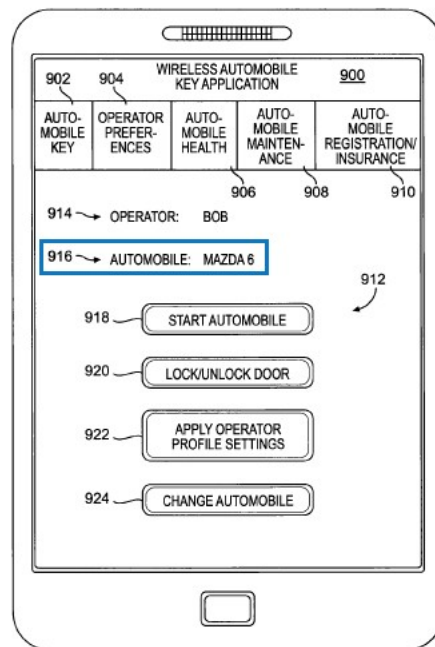


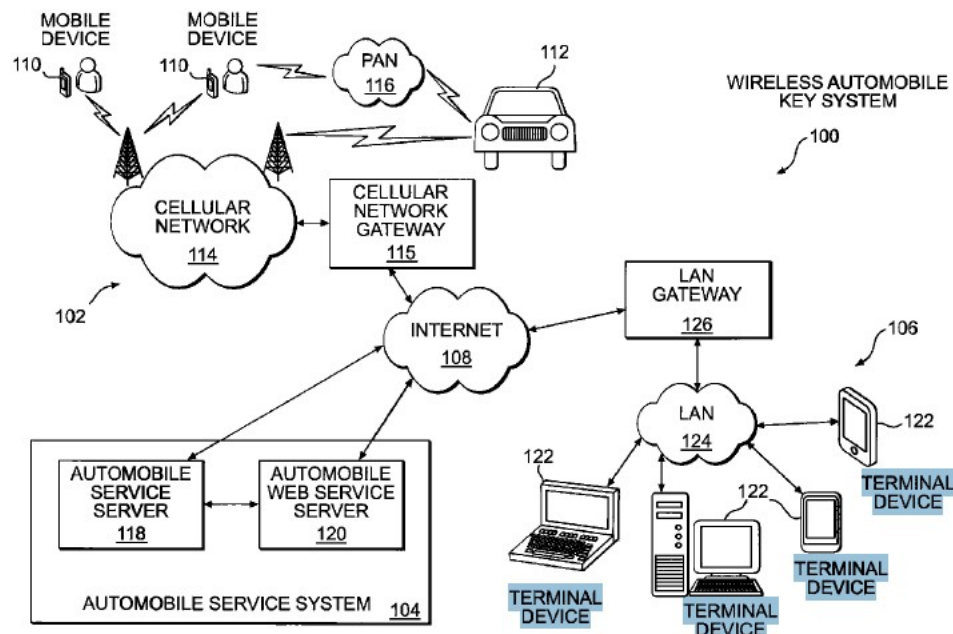
FIG. 9

EX1010, Fig. 9 (annot.), ¶¶ 95-96, 99.

143. Therefore, even when Xiao were combined with Hayashi in the manner Petitioner proposes, there is no operation disclosed or suggested to determine that the settings from “the user profile”—“settings that are preferred to be set *in vehicles*”—“are compatible with settings that are settable on the selected vehicle.” EX1001, 33:1-5, 11-15.

D. Ground 5 fails to disclose or suggest claim 20 because Xiao fails to disclose or suggest “communicating . . . by the vehicle,” as required by element 20[b].

144. The Petition and Dr. Almeroth rely on Xiao alone for alleged disclosure of element 20[b]. It is my opinion that the Petition fails to identify any disclosure from Xiao to meet the recited limitation of “communicating . . . *by the vehicle*, changes to user settings,” as required by element 20[b]. EX1001, 34:52-53. The Petitioner and Dr. Almeroth rely on Xiao’s disclosure at paragraph 106, which states that a “**mobile device 110 (or terminal device 112)** may send a message to server 118 to update the operator’s profile information 614[.]” Pet. 68-69. However, both Petitioner and Dr. Almeroth misidentify Xiao’s “terminal device” as a vehicle. Pet. 68 (“by the vehicle (e.g., automobile 112)”); EX1009, ¶ 255 (same verbatim). Xiao makes clear that a “**terminal device**” is not a vehicle:



EX1010, Fig. 1 (annot.).

145. The preceding paragraph of Xiao describes an “operator preferences menu UI element 904,” which, when selected by the operator, “mobile device 110 (or terminal device 122) may display an operator preference page (not shown)”:

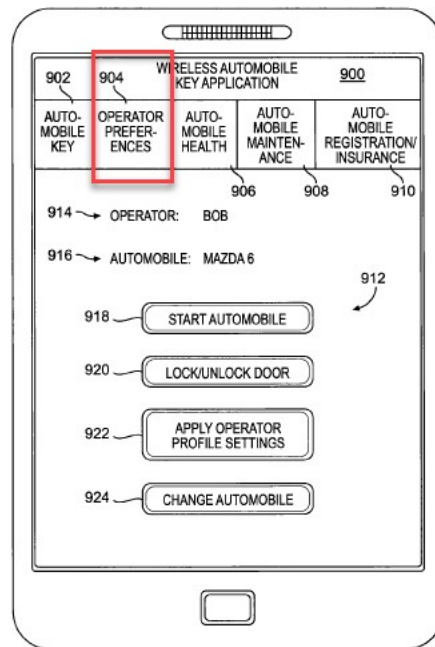


FIG. 9

EX1010, Fig. 9 (annot.). Xiao teaches that this UI element 904 is only available via a “mobile device 110” application or web browser of a “mobile device 110” or “terminal device 122.” *Id.*, ¶¶ 95-97. Accordingly, the relied upon changes to “operator preferences,” described in Xiao (*id.*, ¶¶ 105-106), may *only be sent via a “mobile device 110” or “a terminal device 122,”* neither of which is a vehicle. *Id.*, ¶¶ 95-97, Fig. 9.

146. It is my opinion, therefore, that Xiao fails to disclose a vehicle “communicating” changes to user settings, as required by element 20[b], and therefore Ground 5 fails.

E. The Additional References Do Not Cure the Deficiencies of Xiao or the Xiao/Hayashi Proposed Combination.

147. In my opinion, the additional references that Dr. Almeroth proposes to combine with Xiao or Xiao and Hayashi do not cure any of the deficiencies I identified above. While Dr. Almeroth proposes to add “Patenaude” or “Singh” to Xiao and/or Xiao/Hayashi, he does so in an attempt to show that other limitations would have been obvious. Neither “Patenaude” nor “Singh” (or both together) cure the deficiencies that I discuss herein, and Dr. Almeroth offers no opinion to the contrary. It is therefore my opinion that every ground fails and there is no likelihood of success that any challenged claim is anticipated or obvious.

X. CONCLUSION

148. This declaration reflects my opinions as currently held. However, my analysis may continue such that I may consider additional information that may result in additional observations.

149. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further 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 Section 1001 of Title 18 of the United States Code.

Executed this 16th day of January, 2025, at Irvine, California.



Dr. Sam Malek