UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GOOGLE LLC

Petitioner

v.

TJTM TECHNOLOGIES, LLC

(record) Patent Owner

IPR2025-00586
Patent No. 8,958,853

DECLARATION OF DR. HENRY HOUH

GOOGLE EXHIBIT 1002

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1. I, Henry Houh, hereby declare as follows:

I. ENGAGEMENT AND COMPENSATION

2. I have been retained by Google LLC ("Petitioner") as an expert in the *inter partes* review proceeding described above. I have been asked to provide my technical review, analysis, insights, and opinions regarding the references that Petitioner's counsel have provided to me that form the basis for the grounds of unpatentability set forth in the Petition for *inter partes* review of U.S. Patent No. 8,958,853 ("the '853 patent"). For this service, my billing rate is my standard hourly consulting fee and I am reimbursed for actual expenses. My compensation in no way depends on the outcome of this matter.

3. This declaration sets forth my analyses and opinions based on the materials I have considered thus far and the bases for my opinions. My opinions are also based on my education and experience. I understand that this declaration will be used in the above mentioned inter partes review. In forming my opinions, I have considered the following Exhibits:

Exhibit No.	Description
1001	U.S. Patent No. 8,958,853 ("**the '853 patent**")
1004	U.S. Patent No. 8,275,351 B1 ("**Cazanas**")
1005	U.S. Patent Application Pub. No. 2012/0282906 A1 ("**Frye**")
1006	U.S. Patent Application Pub. No. 2014/0277932 A1 ("**Prakah-Asante**")

1007	U.S. Patent No. 8,433,291 B1 (**"Hertzfeld"**)
1008	U.S. Patent Application No. 2011/0294520 A1 ("**Zhou**")
1009	First Amended Complaint, Google in *TJTM Technologies, LLC v. Google LLC*, No. 3-24-cv-01232 (N.D. Cal.)
1010	File History of U.S. Application No. 14/515,477
1011	File History of U.S. Application No. 14/176,107
1012	File History of Provisional Application No. 61/835,234
1013	U.S. Patent No. 8,290,480 B2 ("**Abramson**")
1015	*TJTM Technologies, LLC v. Google LLC*, No. 3-24-cv-01232 (N.D. Cal.), Joint Claim Construction Position and Prehearing Statement (Dkt. 44)
1016	IPR2019-00434, Decision Denying Institution, Paper 6
1025	U.S. Patent No. 8,805,349
1026	U.S. Patent No. 8,971,927
1028	Friesen, Jeff. *Learn Java for Android Development*. Apress, 2010
1029	Laurie, Ben, et al. *Apache: The Definitive Guide*. O'Reilly & Associates, Inc., 1997

II. SUMMARY OF OPINIONS

4. It is my opinion that:

Ground 1: Claims 1–7 are obvious over Cazanas and Frye.

Ground 2: Claims 8–9 are obvious over Cazanas, Frye, and Zhou.

III. QUALIFICATIONS

5. I hold a Ph.D. in electrical engineering and computer science from the Massachusetts Institute of Technology ("MIT"), awarded in 1998. I also hold a Master's Degree in electrical engineering and computer science from MIT, awarded in 1991, and two Bachelor's degrees (the first in electrical engineering and computer science and the second in physics) also from MIT, awarded in 1989 and 1990, respectively.

6. I have approximately 25 years of work experience related to topics in software development, networking, Internet communications, Web development, mobile device applications, and Internet advertising. I am currently a technical consultant specializing in Social Networking, Web 2.0, Web Site Development, Data Networking, Optical Networking, Telecommunications, Media Streaming and Voice over IP.

7. I have extensive experience with Web programming. From 1994-1996, I was the founder and CEO of Agora Technology Group, where I conceived and oversaw development of targeted advertising-supported web sites. From 1997-1999, I was a Software Engineer and Senior Scientist and Engineer for NBX (acquired by 3Com), where I worked on IP telephony (telephony using Internet protocol). From 1999-2004, I worked for Teradyne and later its spinout (Empirix). During this period, I held the position of Chief Technologist, Engineering Manager, of the Web

Application Test Group. In that position, I was the Chief Architect for all Web testing products, re-architected the core testing product, and helped write a JavaScript interpreter.

8. In 2006, I was the Vice President of Operations and Technology for PodZinger Inc. There, I upgraded the capability of a consumer-facing search site and redeployed a web site from the company to a co-location facility. I was also responsible for evaluating advertisement models of revenue. From 2007-2008, I was Vice President of Technology for the Delta Division of BBN Technologies, where I oversaw the development and deployment of a new fully-featured social networking web site. One of the projects I worked on during this time related to the "BodyLAN" technology developed by BBN. The BBN BodyLAN included networking technology that was designed to connect devices worn on a person's body to a central computing node also on the person. This technology involved protocols for attaching and detaching devices from the network. From 2008-2009, I was the Chief Technology Officer for Eons. With Eons, I integrated a product I created at BBN that Eons acquired. I integrated the product into the Eons social networking platform. I also helped evaluate advertisement platform offerings and brought the "Boom Network" advertising network to market.

9. My qualifications and publications are set forth more fully in my curriculum vitae, attached as Ex-1003.

IV. MY UNDERSTANDING OF THE RELEVANT LAW

A. Claim Construction

10. I understand that a claim term in an *inter partes* review is to be interpreted according to standards applied by district courts. First, the language of the claims themselves is of primary importance in the effort to determine precisely what it is that is patented. The terms used in a claim are generally given the ordinary and customary meaning that the terms would have to a person of ordinary skill in the art in question at the time of the alleged invention, unless the term is expressly defined in the patent. The person of ordinary skill in the art reads the claim in the context of the entire patent, including the specification. Next to the language of the claims, the specification is the single best source for interpreting the claim terms. The claims may also be interpreted using the record of correspondence between the patent applicant and the Patent Office, and also with reference to other sources of evidence that can help to define the meaning of terms to a person of ordinary skill in the relevant time frame. I define the relevant time frame in §VII, below.

B. Anticipation

11. I understand that a claim in an issued patent can be invalid if it is anticipated. In this case, "anticipation" means that there is a single prior art reference that discloses every element of the claim, arranged in the way required by the claim.

12. I understand that an anticipating prior art reference must disclose each of the claim elements expressly or inherently. I understand that "inherent" disclosure means that the claim element, although not expressly described by the prior art reference, must necessarily be present based on the disclosure. I understand that a mere probability that the element is present is not sufficient to qualify as "inherent disclosure".

C. Obviousness

13. I understand that a claim in an issued patent can be invalid if it is obvious. Unlike anticipation, obviousness does not require that every element of the claim be in a single prior art reference. Instead, it is possible for claim elements to be described in different prior art references, so long as there is motivation or sufficient reasoning to combine the references.

14. I understand that a claim is invalid for obviousness 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 before the effective filing date of the claimed invention to a person having ordinary skill in the art to which said subject matter pertains.

15. I understand, therefore, that when evaluating obviousness, one must consider obviousness of the claim "as a whole". This consideration must be from the perspective of the person of ordinary skill in the relevant art, and that such

perspective must be considered as of the effective filing date of the claimed invention.

16. The level of ordinary skill in the art is discussed in §VIII, below.

17. The relevant time frame for determining obviousness is discussed in §VII, below.

18. I understand that in considering the obviousness of a claim, one must consider four things. These include the scope and content of the prior art, the level of ordinary skill in the art at the relevant time, the differences between the prior art and the claim, and any "secondary considerations". I understand that these four things were specified by the U.S. Supreme Court in a case called *Graham v. John Deere*, and are therefore called the "*Graham* factors".

19. I understand that "secondary considerations" include real-world evidence that can tend to make a conclusion of obviousness either more probable or less probable. For example, the commercial success of a product embodying a claim of the patent could provide evidence tending to show that the claimed invention is not obvious. In order to understand the strength of the evidence, one would want to know whether the commercial success is traceable to a certain aspect of the claim not disclosed in a single prior art reference (i.e., whether there is a causal "nexus" to the claim language). One would also want to know how the market reacted to disclosure of the invention, and whether commercial success might be traceable to

things other than innovation, for example the market power of the seller, an advertising campaign, or the existence of a complex system having many features beyond the claims that might be desirable to a consumer. One would also want to know how the product compared to similar products not embodying the claim. I understand that commercial success evidence should be reasonably commensurate with the scope of the claim, but that it is not necessary for a commercial product to embody the full scope of the claim.

20. Other kinds of secondary considerations are possible. For example, evidence that the relevant field had a long-established, unsolved problem or need that was later provided by the claimed invention could be indicative of non-obviousness. Evidence that others had tried, but failed to make an aspect of the claim might indicate that the art lacked the requisite skill to do so. Evidence of copying of the patent owner's products before the patent was published might also indicate that its approach to solving a particular problem was not obvious. Evidence that the art recognized the value of products embodying a claim, for example, by praising the named inventors' work, might tend to show that the claim was non-obvious.

21. I further understand that prior art references can be combined where there is an express or implied rationale to do so. Such a rationale might include an expected advantage to be obtained, or might be implied under the circumstances. For

example, a claim is likely obvious if design needs or market pressures existing in the prior art make it natural for one or more known components to be combined, where each component continues to function in the expected manner when combined (i.e., when there are no unpredictable results). A claim is also likely invalid where it is the combination of a known base system with a known technique that can be applied to the base system without an unpredictable result. In these cases, the combination must be within the capabilities of a person of ordinary skill in the art.

22. I understand that when considering obviousness, one must not refer to teachings in the specification of the patent itself. One can, however, refer to portions of the specification admitted to be prior art, including the "Background" section. Furthermore, a lack of discussion in the patent specification concerning how to implement a disclosed technique can support an inference that the ability to implement the technique was within the ordinary skill in the prior art.

D. Written Description

23. I understand that a patent claim needs to be described in the application for a patent that was filed with the United States Patent and Trademark Office. I understand to "describe" a claim, the patent application needs to provide sufficient written description to reasonably convey to those skilled in the art that the inventor had 'possession' of the claimed subject matter as of the filing date. This involves an objective inquiry into the four corners of the specification from the perspective of a

person of ordinary skill in the art. Based on that inquiry, the specification must describe an invention understandable to that skilled artisan and show that the inventor actually invented the invention claimed. I further understand that while a patent specification can support a claim even if it does not need to use exactly the same words as the claim, this does not extend into the realm of "obviousness". That is, a patent specification that *merely* renders a claim obvious does not provide written description support for that claim.

V. TECHNICAL INTRODUCTION

A. The '853 Patent Disclosure

24. I have reviewed the '053 patent. The '853 patent is titled "Mobile Device Inactive Mode and Inactive Mode Verification." Ex-1001. The '853 patent describes its "subject matter" as "relat[ing] generally to a mobile device including functionality for suppressing user notifications of communications received by the mobile device and notifying the sender of the communication that the user is not receiving communications." Ex-1001, 1:14-18.

25. According to the '853 patent, "[u]ser distraction caused by mobile devices has become a serious problem in modern society. For example, motor vehicle accidents caused by distracted driving are on the rise and have become as serious as driving while intoxicated. Many drivers are aware of the risks of distracted driving but may lack the resolve to avoid trying to respond to incoming

communications." Ex-1001, 1:22-28. The '853 patent asserts that "[w]hat are needed are mechanisms to limit user communication distractions without forcing the user to power down a mobile device and miss essential communications." Ex-1001, 1:32-35.

26. The '853 patent also describes its "subject matter" as "relat[ing] generally to systems and methods for verifying that a user was not receiving communications during a particular period of time." Ex-1001, 1:18-21. It states that "the proliferation of accidents cause [sic] by distracted driving has created a need to prove that one was not operating a communications device during operation of a vehicle. What are needed are mechanisms to show that a user was not using a communications device during an accident while operating a vehicle." Ex-1001, 1:36-46.

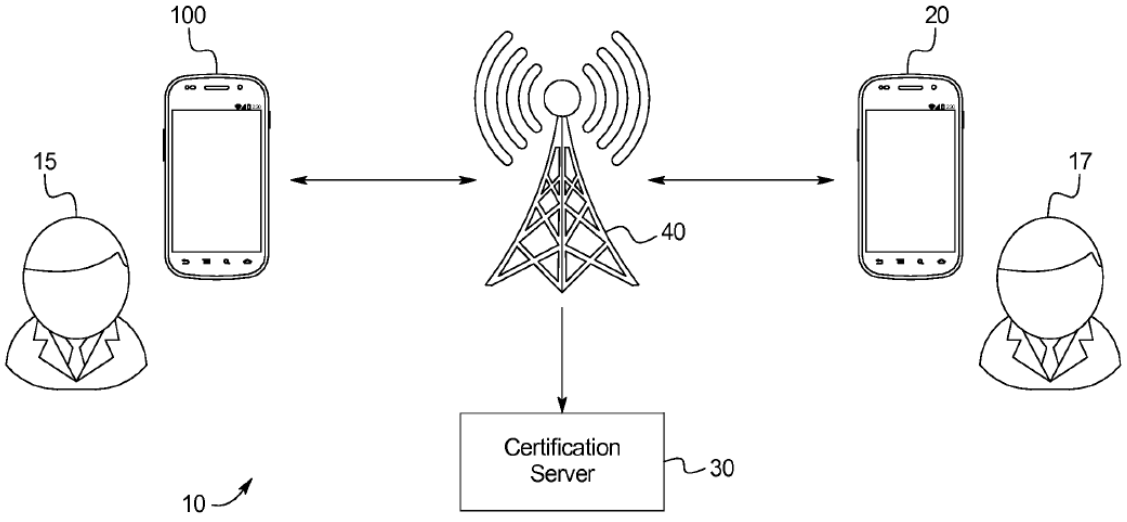
27. According to the '853 patent, "[t]o meet the needs described above and others, the present disclosure provides a mobile device including functionality for suppressing communications to a user and systems for verifying that a user was not receiving communications during a particular period of time." Ex-1001, 1:50-54.

28. The '853 patent generally describes a "mobile device application" which can be installed on a mobile device. Ex-1001, 1:59-65. "A user may enable an inactive mode of the device to suppress notification of incoming phone calls, text, emails, etc. and automatically notify the sender with an away message. By

suppressing the communications distracted driving may be reduced." Ex-1001, 1:66-2:3; *see also* Fig. 3.

29. Figure 1 of the '853 patent depicts "the ecosystem 10 of an example of a mobile device 100 including functionality for suppressing communications using an inactive mode." Ex-1001, 6:48-56. Figure 1 is reproduced below:

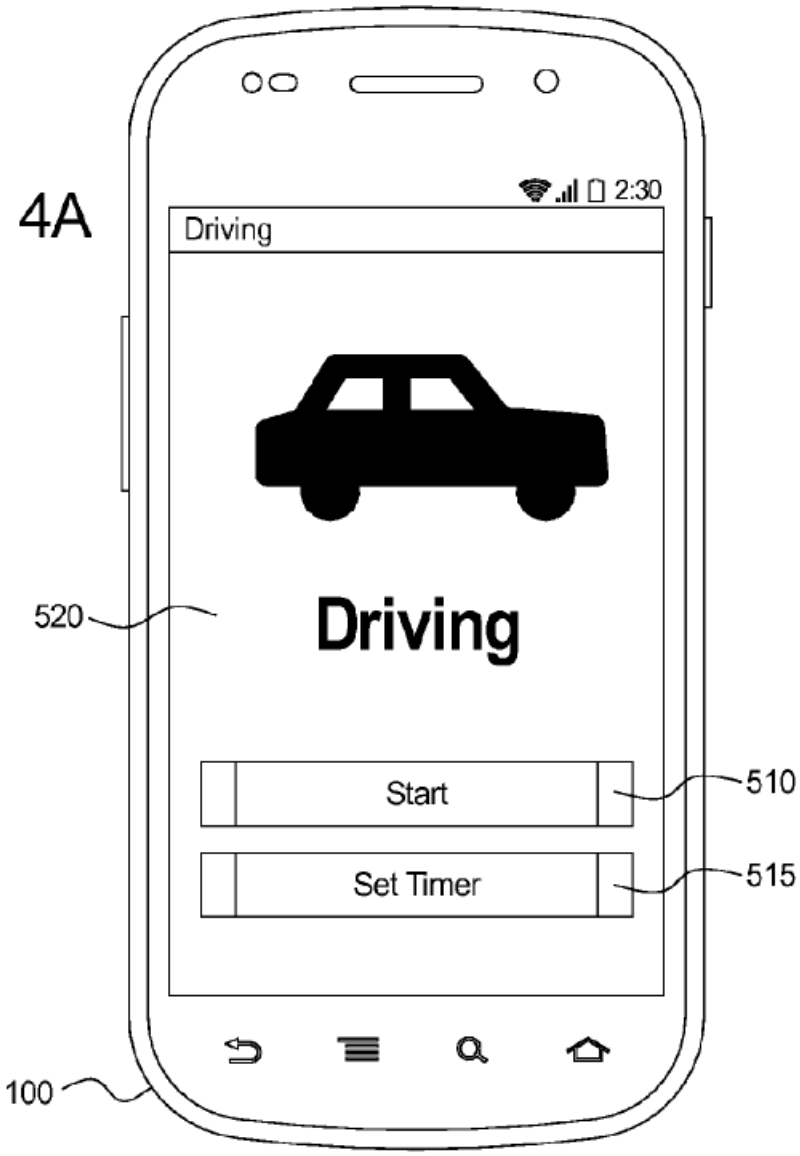
FIG. 1



Ex-1001, Fig. 1, 6:48-56. "As shown in FIG. 1, the ecosystem 10 includes a communications network 40 which provides communications functionality to the mobile device 100, other communication devices 20 which other users may use to communicate to the mobile device 100, and a certification server 30 that may verify that a user 15 was not receiving communications during a particular period of time." *Id.*

30. Figure 4A of the '853 patent depicts "an example mobile device user interface showing a start screen used to begin the inactive mode." Ex-1001, 6:10-11, 7:47-51. Figure 4a is reproduced below:

FIG. 4A



Ex-1001, Fig. 4A. As one option for configuring the device, "the inactive mode may be automatically initiated upon the pairing of the mobile device and a vehicle." Ex-

1001, 2:35-37; 7:58-61, Fig. 4D. The '853 patent identifies pairing via Bluetooth as an example. *Id.* The '853 patent does not provide further details regarding pairing. According to the '853 patent, in addition, "the device may communicate with a certification server to 'certify' that a mobile device was not operational during a certain period as evidence that the phone was not used during driving." Ex-1001, 2:9-11.

B. Overview of Challenged Claims

31. The '853 patent has one independent claim and eight dependent claims. Independent claim 1 is directed to a "mobile device." Independent claim 1 is reproduced below, with bracketed numbering added to each claim limitation:

1[a]. A mobile device, comprising:

[1b] a wireless communication module;

[1c] a processor, controlling the wireless communication module; and

[1d] a memory controlled by the processor, the memory including instructions that when executed by the processor cause the processor to perform the steps of:

[1e] providing a graphical user interface through which a user customizes one or more functions of the mobile device when placed in an inactive mode;

[1f] receiving a user selection to automatically initiate the inactive mode in response to the pairing of the mobile

device with a vehicle;

[1g] receiving a user selection of an away message to use when the mobile device is in inactive mode;

[1h] in response to the pairing of the mobile device and the vehicle, automatically initiating a process to place the mobile device in inactive mode;

[1i] when the mobile device is in inactive mode, in response to receiving a communication from the wireless communication module, transmitting the user selected away message via the wireless module and

[1j] suppressing one or more sound, visual, or vibration communication cues that would have accompanied the communication had the mobile device not been in inactive mode.

Ex-1001, claim 1.

32. The mobile device of claim 1 can execute instructions which cause the mobile device to perform certain actions. The mobile device automatically initiates an "inactive mode" of the mobile device in response to the pairing of the mobile device with a vehicle. When the mobile device is in inactive mode, the mobile device transmits a user-selected away message in response to receiving a communication. While the device is in inactive mode, the mobile device also suppresses one or more sound, visual, or vibration communication cues.

33. Dependent claim 2 requires that "all" sound, visual, or vibration communication cues be suppressed. Dependent claim 3 provides for a notification of communications upon completion of the inactive mode. Dependent claims 4–6 are directed to the type of communication received (SMS message, email, cellular phone call, respectively). Dependent claim 7 provides for customization of the away message. Finally, dependent claims 8 and 9 are directed to providing a notification to a "certification server" when the mobile device enters or exits the inactive mode, respectively. Ex-1001, claims 2–9.

34. In my opinion, the '853 patent claims nothing inventive over the prior art. First, the problem identified in the '853 patent—user distraction by mobile devices while driving—was well-known prior to the earliest possible priority date of the '853 patent (June 14, 2013). *See, e.g.*, Ex-1005, ¶¶0003-0004, ¶0018; Ex-1004, 1:23-31; Ex-1013, 1:25-2:3; Ex-1008, ¶¶0001-0002. Indeed, the problem of distracted driving was so well known (as of at least 2012) that it was called "a problem of **near epidemic proportions**." Ex-1013, 1:25-2:3.[1] It was also known that the problem was not simply that drivers used their hands to place or answer calls; instead, the problem was known to be that drivers found themselves distracted

[1] Emphasis added throughout, unless otherwise stated.

by **communication themselves**, regardless of whether the driver used the mobile device in a hands-free or hand-held manner:

> Researchers have shown that using mobile phones while driving is four times as likely to get into crashes, and the increased crash risk is **similar for hands-free and hand-held phones**.

Ex-1008, ¶0001; *see also* Ex-1013, 1:25-2:3.

35. It was also known that state law bans on mobile device usage while driving are often ignored and not effective:

> Many states explicitly prohibit talking, text-messaging or playing video games on hand-held mobile phones while driving. Additionally, a number of states, such as California, have passed laws banning or restricting young drivers (under age 18) from using mobile phones, or other types of mobile devices while driving. However, a recent study in North Carolina finds that teenagers seem to ignore such restrictions. A ban on the use of wireless devices by teenagers while driving was enacted in the spring of 2007. The study found that approximately 11% of teenage drivers observed departing 25 high schools were using mobile phones during the two months before the restrictions were enacted, while about 12% of teenage drivers were observed using mobile phones during the five months after the enactment of the restrictions.

Ex-1008, ¶0002.

36. As another prior art document explained, "studies have shown that the temptation to use a cellular phone for texting, talking, and other activities while operating a vehicle is not limited to younger drivers—adult drivers have been shown to text more often than younger ones." Ex-1013, 1:39-44; *id.* 1:25-2:3 ("[S]tatistics show that accidents arising from cellular phone based distractions are increasing as the popularity of such devices increases" despite bans.).

37. Not only was the problem known, but so was Patent Owner's alleged solution. As set forth in detail below, the **Cazanas** prior art reference (relied upon herein in Grounds 1 and 2) discloses a system wherein a "mobile station" (e.g., mobile device such as a mobile phone) running a "'Do Not Disturb' Application (DNDA)" can automatically respond to messages received while a user of the mobile station is driving and where the DNDA can be activated automatically in response to pairing the mobile device with a vehicle. Ex-1004, Abstract, 1:15-2:38, 4:48-67, 3:62-66, 5:28-35, 12:34-39. Cazanas explains that "[s]uch an application provides, for example, increased safety when the end-user of the mobile station is operating a vehicle." Ex-1004, 3:58-4:8.

38. Furthermore, Do Not Disturb functionality associated with mobile phones was known to include silencing of notifications. As one prior art patent, assigned to Google, explained:

> [W]hen the DND [Do Not Disturb] mode is activated, the ringer may

> be **silenced**, **all incoming calls may be blocked** or directed to voicemail, the mobile phone 106 may be placed into vibrate, **hibernate** or stand-by mode or powered off, or any other action may occur that **absolutely or selectively minimizes disturbance** of the mobile phone 106 to [a user].

Ex-1007, 4:51-58.

39. **Frye**, also relied upon below in Grounds 1 and 2, describes a system including an application which can adjust the functionality of a mobile device (*e.g.*, a mobile phone) when a user is driving, including by suppressing notifications of received communications. Ex-1005, ¶0005, ¶0014, ¶¶0045-0046, ¶¶0133-0134, ¶0020, ¶0025. Frye also discloses that the functionality of the vehicle audio and/or mobile device can be adjusted in response to pairing of the mobile device. Ex-1005, ¶¶0018-0019, ¶0029, ¶¶0025-0027, ¶¶0041-0042, ¶¶0045-0046, ¶0080, ¶¶0014-0016. Frye states that, as a result of its methods, "[i]t is believed that the user may focus all of his/her attention on the activity that he/she is then-currently engaged in (such as driving a vehicle) rather than answering voice calls, reading and responding to incoming text messages, and/or the like." Ex-1005, ¶0018.

40. As set forth herein, in my opinion, the claims of the '853 patent are directed to nothing more than known mobile device functionality that the prior art recognized to be useful in connection with reducing distracted driving.

VI. EXAMINATION HISTORY OF THE '853 PATENT

41. I understand that the '853 patent issued on February 17, 2015, from an application filed on October 15, 2014 (14/515,477)("the '477 Application") which claims priority to two earlier applications: U.S. Provisional App. No. 61/835,234 ("the '234 Provisional") filed on June 14, 2013, and U.S. Non-Provisional Application 14/176,107 ("the '107 Application") filed on February 9, 2014. Ex-1001.

42. I also understand that during prosecution of the application leading to the '853 patent, a Track One Request for Prioritized Examination was filed and granted. Ex-1010, 50. I understand that no rejections ever issued during prosecution. Instead, an interview took place on December 1, 2014, where, according to an Examiner-Initiated Interview Summary, two pieces of prior art were discussed—Cai[2] and Bauchot[3]. Ex-1010, 37. The Examiner's sole comment regarding the substance of the interview was as follows: "Applicant needs to highlight the novel aspect of the invention." *Id.*

43. I understand that a Notice of Allowance, accompanied by an Examiner's Amendment, followed the interview shortly thereafter on December 29,

[2] U.S. Patent Application Publication 2011/0039581.

[3] U.S. Patent Application Publication 2005/0119002.

2014. Ex-1010, 33-36. The Examiner did not set forth any reasons for allowance on the record. It is not clear whether and to what extent Applicant ever "highlight[ed] the novel aspect of the invention" according to the Examiner's Interview Summary comment. Furthermore, I understand that a limited amount of prior art was considered during prosecution—I note that only five references are listed on the face of the patent.

44. I understand that the application that led to the '853 patent is a continuation of the '107 Application. Ex-1011. A first Office Action in the '107 Application was not mailed until after the '853 patent had already issued. The '107 Application was eventually abandoned after failure to respond to a Final Office Action. Ex-1011, 1-2.

VII. RELEVANT TIMEFRAME FOR DETERMINING OBVIOUSNESS

45. I understand that obviousness must be evaluated at the time before the effective filing date of the claimed invention. From the first page of the '853 patent, I understand that the first patent application (a provisional application) was filed on June 14, 2013. However, as I explain below in §X of this declaration, I do not believe that the claims of the '853 patent are entitled to the benefit of the provisional application's filing date and, instead, the earliest effective filing date for the '853 patent is February 9, 2014. My opinions regarding Grounds 1 and 2 in this declaration do not change depending on any of the claimed priority dates of the '853

patent. I will assume for the purpose of this declaration that June 14, 2013, is the effective filing date of the claimed invention, with the understanding that my testimony will also be applicable to some time prior to June 14, 2013. I may refer to this time period as the "relevant time frame," and my testimony concerning obviousness is directed to this timeframe, even if I occasionally do not explicitly use a past tense.

VIII. LEVEL OF ORDINARY SKILL IN THE ART

46. I understand that the legal question of obviousness must be assessed from the perspective of a person having ordinary skill in the art ("PHOSITA") at the time of the invention. In my opinion, a PHOSITA would have been someone with at least an undergraduate degree or equivalent in electrical engineering, computer engineering, or computer science, or a master's degree in information science, but relevant practical experience could offset less or different education. I understand that the Patent Trial and Appeal Board has previously adopted this definition in connection with the '853 patent, and I adopt it here as it is consistent with my experience. *See also* Ex-1016, 7-8 (Board adopting this definition). My testimony concerning obviousness is offered from this perspective even if I do not explicitly state so.

47. In my opinion, I would have met this standard as of the relevant time (June 14, 2013) and continue to do so today. To the extent I exceed the minimum

qualifications of a PHOSITA during the relevant time period, my opinions in this declaration are presented from the perspective of a PHOSITA.

IX. CLAIM CONSTRUCTION

48. In my opinion, no claim construction is necessary here and all claim terms should take their plain and ordinary meaning.

49. I am informed that in a prior proceeding, IPR2019-00434, the Patent Trial & Appeal Board considered the term "inactive mode," as recited in claim 1 of the '853 patent, and found: "we find that the correct construction of 'inactive mode' at least encompasses a mode in which user notifications relating to incoming communications are suppressed." Ex-1016, 9. I am also informed that citing to the above construction, the parties in a co-pending litigation submitted a joint claim construction adopting the Board's construction of "inactive mode." Ex-1015, 2.

50. I am also aware of Patent Owner's First Amended Complaint in the litigation *TJTM Technologies, LLC v. Google LLC*, No. 3-24-cv-01232 (N.D. Cal.) (filed Feb. 29, 2024). Ex-1009. I am informed that Patent Owner's infringement allegations are set forth in paragraph 42 of the Complaint and reflect Patent Owner's apparent understanding of the challenged claims.

X. CLAIMS 1-9 ARE NOT ENTITLED TO PROVISIONAL FILING DATE

51. In my opinion, claims 1–9 of the '853 patent are not entitled to the benefit of the '234 Provisional application because the '234 Provisional lacks

sufficient written description. Accordingly, in my opinion, the earliest priority date for the '853 patent is February 9, 2014. *See* Ex-1001 (date Application No. 14/176,107 filed).

52. Claim 1 of the '853 patent recites "receiving a user selection to automatically initiate the inactive mode in response to the pairing of the mobile device with a vehicle." Ex-1001. However, the '234 Provisional does not disclose pairing a mobile device with a vehicle or automatically initiating inactive mode based on pairing. Ex-1012, ¶¶0011, 0018, 0022.

53. The '853 patent explicitly describes pairing-based initiation in its "Brief Summary of the Invention" (Ex-1001, 2:35-37), "Summary of the Invention" (Ex-1001, 5:23-24), and "Detailed Description" (Ex-1001, 7:58-60, 9:56-57), but the '234 Provisional contains no corresponding disclosure. Ex-1012.

54. In my opinion, because the '234 Provisional lacks any disclosure of (1) pairing a mobile device with a vehicle or (2) automatically initiating inactive mode based on pairing, it cannot provide written description support for claim 1 or the other claims (all of which depend from claim 1) of the '853 patent, Therefore, I understand that the '853 patent cannot claim priority to the '234 Provisional, making February 9, 2014, the earliest possible priority date.

XI. DETAILED EXPLANATION OF THE REASONS FOR UNPATENTABILITY

Ground 1. Claims 1–7 are obvious over Cazanas and Frye

55. It is my opinion that claims 1–7 are obvious over U.S. Patent No. 8,275,351 ("**Cazanas**")(Ex-1004), in view of U.S. Patent Application Publication No. 2012/0282906 A1 ("**Frye**")(Ex-1005).[4]

56. Cazanas is a U.S. patent that issued on September 25, 2012. The application leading to the issuance of the Cazanas patent was filed on May 26, 2010. Ex-1004, (22), (45).

57. Frye is a U.S. patent application publication that published on November 8, 2012. The application leading to the Frye publication was filed on August 3, 2011. Ex-1005, (22), (43).

58. I understand that Cazanas and Frye are both prior art even to the earliest possible priority date for the '853 patent (June 14, 2013).

59. I understand that neither Cazanas nor Frye was cited during prosecution of any application leading to the '853 patent.

[4] Frye later issued as U.S. Patent No. 8,805,349. Ex-1025.

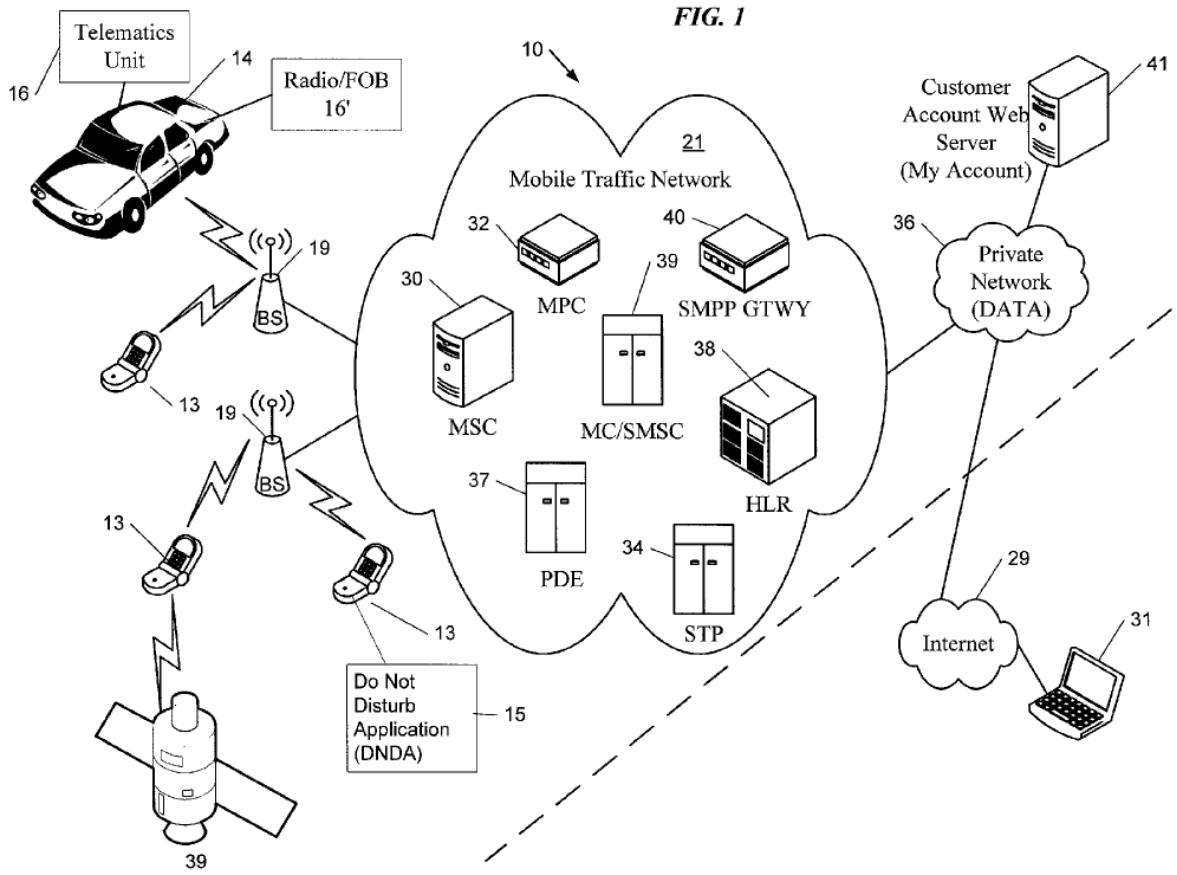
A. Overview of the Ground

60. In my opinion, the challenged claims are obvious over the combination of **Cazanas** and **Frye**. Cazanas discloses or renders obvious the elements of independent claim 1 alone. Additionally, certain elements of claim 1 are obvious in view of Frye. In my opinion, to the extent that Cazanas alone does not disclose or render obvious specifically **receiving a *user selection* to automatically initiate the inactive mode**, it would have been obvious to permit a user to select the specific conditions for activation of Cazanas' DNDA, including for the user to select that the DNDA should automatically initiate the inactive mode in response to the pairing of the mobile device with a vehicle, in view of Frye's teachings. Furthermore, to the extent that Cazanas alone does not render obvious **suppressing sound, visual, or vibration communication cues** when the device is in a restricted operation mode, it would have been obvious to incorporate Frye's teachings of suppression of notifications, so that Cazanas' DNDA would not only send away message but also suppress communication cues when the DNDA is executed (thus also rendering Cazanas' DNDA "an **inactive mode**": "a mode in which user notifications relating to incoming communications are suppressed"). Ex-1016, 9.

1. Overview of Cazanas

61. Cazanas discloses a system wherein a "mobile station" (e.g., mobile device such as a mobile phone) running a "'Do Not Disturb' Application (DNDA)"

can automatically respond to messages received while a user of the mobile station is driving. Ex-1004, Abstract, 1:15-2:38, 4:48-67. Cazanas' overall system is depicted below in Figure 1:



Ex-1004, Fig. 1. Cazanas explains that "FIG. 1 illustrates a mobile communication network 10 as may be operated by a carrier or service provider to provide a wide range of mobile communication services and ancillary services or features to its subscriber customers and associated mobile station (MS) users." Ex-1004, 4:11-15. Cazanas teaches that "mobile stations 13 typically take the form of portable

handsets, smart-phones or personal digital assistants." Ex-1004, 4:47-51.

62. Mobile station 13 "can include a 'Do Not Disturb' Application (DNDA) 15, that can be downloaded to the mobile station 13 or added thereto in some other way. The DNDA 15 is provided in a mobile station 13 that otherwise provides normal mobile communications services of the network 10 to a user of the mobile station." Ex-1004, 4:50-56. The "DNDA can be activated to enable the mobile station 13 to begin automatically responding to incoming messaging services messages" when a user is driving. Ex-1004, 5:23-35. Cazanas explains that "[s]uch an application provides, for example, increased safety when the end-user of the mobile station is operating a vehicle." Ex-1004, 3:58-4:8.

63. Cazanas teaches that "the mobile station can include a Bluetooth transceiver" which "can be used to pair the mobile station 13 with a portion of the vehicle 14." Ex-1004, 10:35-38, 5:17-22, 5:28-35, 12:34-39, 13:20-29, 3:62-67, 2:5-9. The DNDA application can be automatically activated in response to the "pairing" of the mobile device with a vehicle. As Cazanas explains:

> Various illustrated examples reference a 'do-not-disturb' application that is executed on a mobile station. The application can be triggered to **automatically execute** based on numerous factors such as the rate of travel of the mobile station, the **pairing of the mobile station with a portion of a vehicle**, or in response to a predetermined schedule.

Ex-1004, 3:62-66, 5:28-35, claim 3; *see also id.*, 12:34-39 ("[T]he application can be executed in response the mobile station 13 being paired to the vehicle 14.").

2. Overview of Frye

64. Much like Cazanas, Frye also describes a system 10 including an application which can adjust the functionality of a mobile device 98 (e.g., a mobile phone) when a user is driving. Ex-1005, ¶0005, ¶0014, ¶¶0045-0046, ¶0123, ¶¶0127-0128, ¶¶0133-0134, ¶0137, ¶0020, ¶0025. Frye's overall system is illustrated in Figure 1:

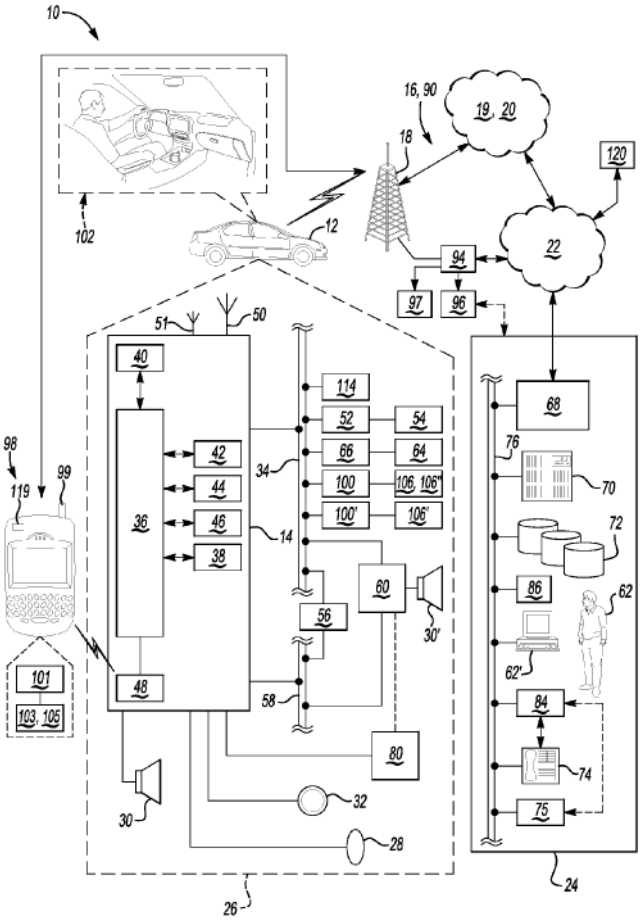


Fig-1

Ex-1005, Fig. 1.

65. Frye explains that the system can "be used to discourage a driver from using his/her mobile communications device in a non-hands-free manner while operating a vehicle." Ex-1005, ¶0014, ¶0016, ¶0018. Frye explains that, for example, its system "discourages the driver from using the device in a manner requiring the use of the driver's hands by automatically adjusting a functionality of an audio component disposed inside the vehicle in response to recognizing, via a telematics unit, that the device is not located in or at a predefined location inside a cabin area of the vehicle." Ex-1005, ¶0014. The "predefined location" can be, for example, a device "specifically designed to hold the mobile device." Ex-1005, ¶0015.

66. A user of Frye's application can select the precise conditions for the adjustment of the functionality of the operation of the mobile device. *See, e.g.*, Ex-1005, ¶0052, ¶¶0132-0134. By accessing a webpage, a user may input his or her "user preferences (e.g., user-selected adjustments to user-selected functionalities of the mobile device 98 [and] user-selected (i.e., preset) operational modes of the vehicle 12" into a "user profile." Ex-1005, ¶0052. Frye explains:

> [T]he information from the user profile may be used, by the processor 101 while executing the application 103 resident [on the mobile device], to determine i) which functionality of the device 98 should be adjusted and ii) how the functionality is to be adjusted. As

> used herein, a "functionality" of the mobile device 98 that may be adjusted refers to an element or attribute of the mobile device 98 that is configured to perform a particular function.

Ex-1005, ¶0133; *see also* Ex-1005, ¶¶0127-0148, Fig. 8.

67. Similar to Cazanas, Frye also discloses that the functionality of the mobile device can be adjusted in response to "pairing" of the mobile device. Specifically, Frye teaches adjusting the functionality of the mobile device and/or vehicle audio when a mobile device is "pair[ed]" with a vehicle telematics unit but when the mobile device is not present in the "predefined location" such as a mobile device holder. Ex-1005, ¶¶0018-0019, ¶0029, ¶¶0025-0027, ¶¶0041-0042, ¶¶0045-0046, ¶0080, ¶¶0014-0016, ¶0123, ¶¶0132-0135, ¶0137. "[U]pon pairing the mobile device with the telematics unit of the vehicle . . . and thereafter each time the paired mobile device is connected to the telematics unit . . . the adjustment of the functionality of the audio component [of the vehicle system] may be accomplished on command by an in-vehicle telematics unit upon detecting that the mobile device is not located in or at a predefined location inside the vehicle."). Ex-1005, ¶0019. For example, in Frye's system, "each time the user removes the device from the predefined location (e.g., from the holder), the audio component [of the vehicle system] is automatically adjusted until, for example, the user places the device back to the predefined location (e.g., back in the holder)." Ex-1005, ¶0018. Frye states

that, as a result, "[i]t is believed that the user may focus all of his/her attention on the activity that he/she is then-currently engaged in (such as driving a vehicle) rather than answering voice calls, reading and responding to incoming text messages, and/or the like." *Id.*

B. Rationale (Motivation) Supporting Obviousness and Reasonable Expectation of Success

68. In my opinion, Cazanas discloses or renders obvious the elements of independent claim 1 alone as set forth in the detail in the "Claim Mapping" section below. Nonetheless, this combination is also presented in view of Frye, which, in my opinion, together with Cazanas, renders obvious the challenged claims. The rationale supporting obviousness, including motivation to combine and reasonable expectation of success is discussed in detail in the "Claim Mapping" below.

C. Graham Factors

69. The **level of ordinary skill** in the art is as set forth above in §VIII.

70. The **scope and content of the prior art** are discussed throughout the Ground.

71. The differences between the prior art and the claims are discussed throughout the Ground.

72. I am not aware of any **secondary considerations** that would make an inference of non-obviousness more likely.

73. This discussion of Graham factors applies to all Grounds.

D. Analogous Art

74. In my opinion, Cazanas and Frye are analogous art because they are in the same field as the '853 patent (mobile devices and associated systems, including wireless network communications) (Ex-1001, 1:14-21, Abstract), and their methods would have been reasonably pertinent to the problems facing the named inventors, because both references concern reducing distracted driving caused by driver operation of mobile devices by controlling mobile device communications (Ex-1001, 1:14-46; Ex-1004, Abstract, 1:5-67; Ex-1005, Abstract, ¶¶0002-0004).

E. Claim Mapping

75. This section maps the challenged claims to the relevant disclosures of Cazanas and Frye, where the claim text appears in bold-italics, and the relevant mapping follows.

CLAIM 1

"1[a]. A mobile device, comprising:"

76. Cazanas discloses a **mobile device**. Cazanas' overall system contains one or more "mobile stations" which are **mobile device**[s]. Cazanas explains that "[m]obile stations 13 typically take the form of portable handsets, smart-phones or personal digital assistants." Ex-1004, 4:48-50, 9:40-56, Fig. 1, Fig. 2; *see also* Ex-1004, 5:44-50 (mobile station can be "a binary runtime environment for mobile

(BREW-based) mobile station, a Windows Mobile based mobile station, android, I-Phone, Java Mobile, or RIM based mobile station").

77. Cazanas' Figure 2, reproduced below, depicts an exemplary mobile station 13:

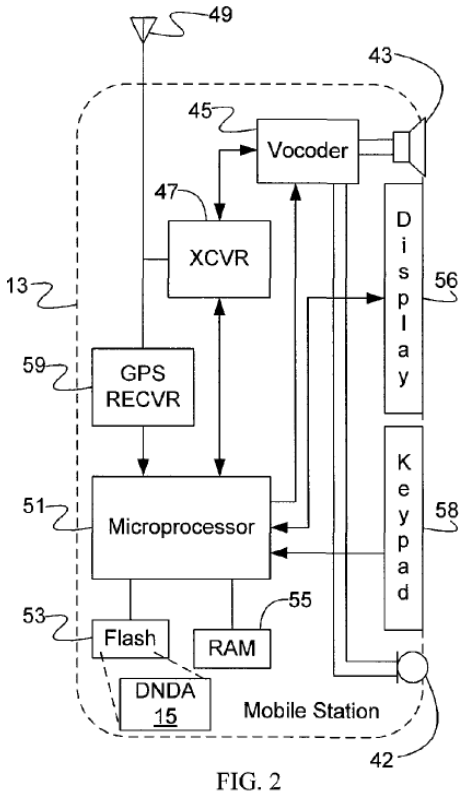


FIG. 2

Ex-1004, Fig. 2, 3:37-38, 4:48-54, 4:44-50.

"[1b] a wireless communication module;"

78. In my opinion, Cazanas' mobile station (**mobile device**) contains **a wireless communication module** in the form of a digital transceiver. Cazanas explains that "[f]or digital wireless communications, the mobile station 13 []

includes a digital transceiver (XCVR) 47." Ex-1004, 9:57-10:21; *see also* Ex-1004, Fig. 2 (depicting digital transceiver (XCVR) 47). The digital transceiver facilitates **wireless communications**. Cazanas states that "[t]he concepts discussed here encompass embodiments of the station 13 utilizing any digital transceivers that conform to current or future developed digital wireless communication standards." *Id.* "The transceiver 47 provides two-way wireless communication of information, such as vocoded speech samples and/or digital message information." *Id.*

"[1c] a processor, controlling the wireless communication module; and"

79. Cazanas' mobile station (**mobile device**) contains **a processor**. The mobile device contains "microprocessor 51" which is a processor. Ex-1004, 2:49-51, 10:22-24, claim 10; *see also* Ex-1004, Fig. 2 (depicting microprocessor 51). Cazanas explains that "microprocessor 51 serves as the programmable controller in that it controls all operations of the mobile station 13 in accord with programming that it executes." Ex-1004, 10:22-24. Since Cazanas' digital transceiver (XCVR) 47 (i.e., the claimed "wireless communication module") is part of mobile station 13 (Ex-1004, 9:57-10:21, Fig. 2), Cazanas' microprocessor 51 controls all operations of the digital transceiver. In my opinion, Cazanas thus discloses a processor, **controlling** the **wireless communication module**.

"[1d] a memory controlled by the processor, the memory including instructions that when executed by the processor cause the processor to perform the steps of:"

80. Cazanas' mobile station (**mobile device**) contains one or more **memor[ies].** "The mobile station 13 [mobile device] [] includes flash type program memory 53 and/or a non-volatile random access memory (RAM) 55, for storing various software routines and mobile configuration settings." Ex-1004, 10:22-34, 2:49-52, 11:27-32, claim 10; *see also* Ex-1004, Fig. 2 (depicting memories).

81. Cazanas discloses that these memories are **controlled by the processor** (microprocessor 51). Ex-1004, 10:22-34, claim 10, Fig. 2. Cazanas' memory **includ[es] instructions that when executed by the processor cause the processor to perform** process **steps**. As Cazanas explains, the mobile device "includes a machine readable storage medium and executable program instructions embodied in the machine readable storage medium that when executed by a mobile station causes the system to perform various functions." Ex-1004, 2:65-3:3. Specifically, among other things, the processor executes the "Do Not Disturb" Application (DNDA) stored in memory. Ex-1004, claim 10, claim 18, 2:49-53 ("The memory stores an automated response application. The processor executes the automated response application."), 10:22-34, 10:39-41, 2:65-3:17. The memory also "stores an operating system, device driver software, call processing software and vocoder control software; and the memory may store any of a wide variety of other

applications, such as client browser software and short message service software." Ex-1004, 10:22-34, 14:12-16, 14:42-44.

82. It would have been obvious to a PHOSITA to program Cazanas' mobile device's **memory** to include **instructions** to perform claim steps [1e]-[1j], as set forth in the following sections. Specifically, it would have been obvious to program Cazanas' memory to implement any modification discussed herein, such as including the features of Frye specifically discussed throughout the claim mapping section. A PHOSITA would have been motivated to do so in order for the mobile device to implement the relevant functionality. A PHOSITA would understand that any such program instructions should be stored in the mobile device's memory so that they can be appropriately and easily retrieved by the processor from the local memory (i.e., the claimed "memory controlled by the processor") during the process of executing a program.

83. A PHOSITA would have had a reasonable expectation of success in programming the instructions in Cazanas' memory, including all steps performed by Cazanas' DNDA application, according to Frye's teachings. Doing so would involve nothing more than standard mobile device programming. I understand that a "reasonable expectation of success" is required only for the limitations actually recited in the claims. The relevant art in the relevant timeframe was predictable and the proposed modifications involve nothing more than standard electronic device

programming and functionality. *See* Ex-1004, 13:40-53; 14:45-51, 3:49-58. A PHOSITA would have been able to modify the operation of Cazanas' DNDA and associated server with little difficulty, particularly in light of Cazanas' instruction that "the memory may store any of a wide variety of other applications, such as client browser software and short message service software." Ex-1004, 10:22-34. In my opinion, the '853 patent's general and high-level disclosures support this understanding of the relevant art.

"[1e] providing a graphical user interface through which a user customizes one or more functions of the mobile device when placed in an inactive mode;"

84. In my opinion, this claim element is disclosed, or alternatively rendered obvious, by Cazanas alone or with Frye.

85. As set forth above, Cazanas' "Do Not Disturb" Application (DNDA) executes on the mobile device and controls the operation of the mobile device during certain periods of time when it is desirable that a user not be disturbed, including when a user is operating a motor vehicle. Ex-1004, 3:58-4:8, 1:15-37. Cazanas explains that "[s]uch an application provides, for example, increased safety when the end-user of the mobile station is operating a vehicle." Ex-1004, 3:58-4:8. When the DNDA application is active (ON), the mobile device is in an **inactive mode**. This is because the DNDA reduces the likelihood that a user will be distracted by

the mobile device while the DNDA is activated, as the "Do Not Disturb" message serves to deter would-be callers from disturbing the driver during the time that the DNDA is active. Cazanas explains that a "Do Not Disturb" message is sent to "anyone who sends the customer a SMS message while the 'Do Not Disturb' option is active (ON)." Ex-1004, 1:54-67, Fig. 3, 5:36-43, 10:39-54. As explained below in the mapping of the "suppressing" step of claim element [1j], Cazanas alone teaches or renders obvious an inactive mode, based on Cazanas' "Do Not Disturb" message serving as a deterrent to would-be callers from disturbing the driver during the time that the DNDA is active. Such deterrence results in a net reduction in the number (suppression) of incoming calls and messages that a driver receives when the DNDA is active as compared to when the DNDA is not active. Thus, Cazanas' DNDA is in an **inactive mode** when the 'Do Not Disturb' option is active (ON).

86. To the extent that the claim language "**inactive mode**" itself requires suppressing communication cues that Cazanas does not expressly disclose, then in my opinion, it would have been obvious to include Frye's suppression functionality (*e.g.*, Ex-1005, ¶¶0123-0137) into Cazanas' DNDA for the reasons discussed in the claim mapping below for element [1j] (reciting "suppressing one or more sound, visual, or vibration communication cues"). Thus, the combination of Cazanas and Frye teaches or suggests an **inactive mode** in which user notifications relating to incoming communications are suppressed. Ex-1005, ¶0134 ("[T]he message

notification function is restricted so long as the device 98 is in an adjusted functionality (in this case, disabled) operational mode. As such, incoming messages will be received by the mobile device 98, however the user will not know that the messages have been received….”); Ex-1016, 9 (Board stating that “the correct construction of ‘inactive mode’ at least encompasses a mode in which user notifications relating to incoming communications are suppressed.”).

87. Cazanas makes clear that **a user can customize** the use of the DNDA application using a “**graphical user interface**” on the mobile device itself (display 56 and keypad 58). Ex-1004, 11:33-56, 9:35-39, 12:26-31, 10:35-54; 5:36-43. As Cazanas explains,

> The display 56 and keypad 58 are the physical elements providing a textual or **graphical user interface**. In addition to normal telephone related input/output, these elements are also used for display of menus and other information to the user and **user input of selections**. For example, these elements can be used t**o input information related to the response message or to configure other parameters of the DNDA 15**. Also, the SMS options panel provided on certain mobile stations can be used to input information related to the response message. Of course other **user interface** elements may be used, such as a stylus and touch sensitive display screen, as in a PDA or mobile smartphone.

Ex-1004, 11:33-56; *see also* Ex-1004, 9:29-39 (Operation of DNDA schedule “can

also be configured on the mobile station 13 via the DNDA 15. Further, one or more response messages can be configured, created, or edited using . . . the user interface on the mobile station and the DNDA."), 10:34-54, 1:54-67. Cazanas thus discloses that **customization can be performed by a user** using a **graphical user interface** of the mobile device. Furthermore, in my opinion, a PHOSITA would have found it obvious to facilitate user interaction with and customization of the functionality of the DNDA via a graphical user interface on the mobile device because doing so merely represents standard mobile device application functionality as of the relevant time.

88. Cazanas also discloses *online* graphical user interface options through which a user can customize functions of the mobile device when placed in an inactive mode. Ex-1004, 9:14-39 ("[O]ne or more response message[s] can be configured, created, or edited using ***the web site*** or the user interface on the mobile station and the DNDA."). Cazanas explains that a service provider or mobile carrier "offer[s] its subscribers on-line access to a variety of functions related to the subscribers' accounts." Ex-1004, 9:14-39. Cazanas states that "the carrier in our example operates a customer account web server 43, offering a 'My Account' (Now MyVerizon) type subscriber interface via the Internet" and that the carrier operates a "My Account web site accessible through the Internet 29." *Id.*. "[T]he website provides secure user access to **configure the operation of the DNDA** 15." *Id.*; *see*

also Ex-1004, 11:33-56. A user can access this online information via a mobile device and thus can use a **graphical user interface** of the mobile device to customize the use of the DNDA in this manner as well.

89. Via either the website accessed on a mobile device or the DNDA user interface, Cazanas teaches multiple options for user **customization**. For example, "[t]he response message can be user configurable each time the DNDA 15 application is executed. Also, predetermined responses can be created or provided and used. Also, response messages can be customized based on the sender of the incoming message." Ex-1004, 5:39-43, 11:33-56, 12:40-43, 10:39-54. A user can "set-up a schedule of activating and deactivating the DNDA 15. For example, if the account holder and user of the DNDA 15 has a regularly scheduled meeting, they can configure the DNDA 15 to execute during that period using the web site." Ex-1004, 9:29-39.

90. Finally, as set forth under claim element [1d], the processor of Cazanas' mobile device executes **instructions** stored in **memory**, which include instructions to execute the DNDA application. Ex-1004, 10:39-41 ("[T]he stored program software will also include the Do-Not-Disturb Application (DNDA)."). In my opinion, these instructions also obviously include instructions associated with the provision of and user interaction with a graphical user interface through which a user can customize the function of the mobile device when placed in an inactive mode.

Ex-1004, 10:39-47 ("[T]he stored program software will also include the Do-Not-Disturb Application (DNDA) 15. The DNDA 15 provides various functionality during its operation. For example, the DNDA 15, when active, enables the mobile station to automatically respond to incoming messaging service messages with a response message such as 'I am not available to respond at this time.' Of course, the response message is user configurable both via the mobile station 13 and via the above-described web site."); *see also id.*, claim 10, claim 18, 2:49-53, 10:22-34, 2:65-3:17; 9:35-39, 12:26-31, 11:33-56; *see also* claim element [1d] (discussing motivation and reasonable expectation of success to program instructions into Cazanas' memory).

"[1f] receiving a user selection to automatically initiate the inactive mode in response to the pairing of the mobile device with a vehicle;"

91. In my opinion, Cazanas discloses and renders obvious this claim element. Cazanas teaches that "the mobile station can include a Bluetooth transceiver .... The Bluetooth transceiver can be used to **pair the mobile station 13 with a portion of the vehicle 14**." Ex-1004, 10:35-38, 5:17-22, 5:28-35, 12:34-39, 13:20-29, 3:62-67, 2:5-9. I note that the use of Bluetooth short range wireless technology was well known as of the relevant time and had been incorporated into numerous mobile devices. *See, e.g.*, Ex-1004, 5:17-19, 10:35-38, 3:53-57. Cazanas

thus discloses that the mobile station (**mobile device**) can be **pair[ed] with a vehicle**.

92. It is also my opinion that Cazanas discloses that the DNDA application can be automatically initiated (**automatically initiat[ing] the inactive mode**) in response to the pairing of the mobile device with a vehicle. As Cazanas explains:

> Various illustrated examples reference a 'do-not-disturb' application that is executed on a mobile station. The application can be triggered to **automatically execute** based on numerous factors such as the rate of travel of the mobile station, the **pairing of the mobile station with a portion of a vehicle**, or in response to a predetermined schedule.

Ex-1004, 3:62-66, claim 3; *see* Ex-1004, 5:28-35 ("Also, the DNDA 15 can be **activated upon pairing** the mobile station 13 **with the telematics unit 16**. Further, the **activation** can occur when the mobile station 13 is **paired** with a Bluetooth communication unit (e.g., a hands-free unit or radio with Bluetooth capabilities 16′) **with the vehicle 14**."); 12:34-39 ("[T]he application can be **executed in response** [to] the mobile station 13 **being paired** to the vehicle 14."). In each of these quoted disclosures, the act of pairing the mobile device to the vehicle is sufficient to trigger DNDA 15. In my opinion, Cazanas thus discloses and renders obvious that pairing is *sufficient* to trigger the initiation of the inactive mode, and a PHOSITA would thus understand Cazanas as teaching that a user may select any or all of these options as

independent triggers for the activation of the DNDA (which results in **initiat[ion]** of **inactive mode**).

93. Cazanas further explains that the conditions for activation of the DNDA can be **select[ed]** by a **user**. Cazanas teaches that the conditions for activation of the DNDA can be **select[ed]** by a user, either on a website or on the mobile device itself. Ex-1004, 9:29-39 ("[T]he web site provides secure **user access to configure** the operation of the DNDA 15, for example, to set-up a schedule of **activating and deactivating the DNDA** 15. . . . . Of course, this can also be **configured on the mobile station** 13 via the DNDA 15."). Cazanas provides an "example" of a user selection, explaining that a user can

> configure the operation of the DNDA 15, for example, to set-up a schedule of activating and deactivating the DNDA 15. For example, if the **account holder and user** of the DNDA 15 has a regularly scheduled meeting, **they can configure** the DNDA 15 to execute during that period using the web site.

Ex-1004, 9:29-39; *see also* Ex-1004, 11:34-56 (discussing "**user** input of **selections**"); 12:20-39. In my opinion, Cazanas thus generally teaches **user selection** of the conditions for operation of the DNDA, an example of which is user selection of a schedule of operation.

94. In my opinion, a PHOSITA would further appreciate that the DNDA can also be configured to permit a **user** to **select** for the application to be "triggered

to automatically execute based on numerous factors such as the rate of travel of the mobile station, **the pairing of the mobile station with a portion of a vehicle**, or in response to a predetermined schedule." Ex-1004, 3:62-66. Each one of these options is presented as an alternative (using "or") and thus a PHOSITA would readily appreciate Cazanas to be teaching that each option can be selected to serve as a trigger for the operation of the DNDA. In my opinion, a PHOSITA would further recognize triggering upon pairing to be the most conservative (and thus safest) option. Cazanas thus itself discloses, or at least renders obvious, **receiving a *user selection* to automatically initiate the inactive mode in response to the pairing of the mobile device with a vehicle**.

95. Furthermore, in my opinion, it would have been obvious to a PHOSITA to permit a user to select the specific conditions for activation of the DNDA, including for the **user** to **select** that the DNDA should automatically initiate the inactive mode in response to Cazanas' "pairing of the mobile station with a portion of a vehicle." Ex-1004, 3:62-66. A PHOSITA would have been motivated and it would have been obvious to do so for numerous reasons. First, allowing the user to make this selection maximizes flexibility and customization of the application, thus allowing it to best accommodate a user's specific preferences for operation. Second, allowing the user to select when the DNDA should be activated allows for different conditions to be selected for DNDA activation depending on the driver. For

example, users may wish to select different triggers for different drivers. On a teenager's phone, for example, it may be desirable for the parent to make a selection on that phone to always trigger the DNDA whenever the phone is perceived to be in or near the car; whereas an adult may wish to disable that trigger on their own phone, or a passenger (not driving) would also wish to disable triggering DNDA upon pairing. *See* Ex-1008, ¶¶0023, 0040. Third, allowing the user to make this selection on their mobile device represents nothing more than an obvious design choice in view of Cazanas' teachings. Indeed, there are only two options—either (1) the application provider makes the selection for the user, resulting in the functionality always being always enabled for all users, or (2) the user is given the option to select whether and when to enable this functionality for themselves. *See also* claim element [1d] (discussing motivation and reasonable expectation of success to program instructions into Cazanas' memory).

96. In my opinion, this claim element is also obvious in view of Frye, which specifically teaches that a user can **select** the conditions for the operation of an inactive mode on a mobile device. *See, e.g.*, Ex-1005, ¶0052, ¶¶0132-0134. By accessing a webpage, a user may input his or her "user preferences (e.g., **user-selected adjustments to user-selected functionalities** of the mobile device 98 [and] user-selected (i.e., preset) operational modes of the vehicle 12" into a "user profile." Ex-1005, ¶0052. Frye explains:

> the information from the user profile may be used, by the processor 101 while executing the application 103 resident thereon, to determine i) which functionality of the device 98 should be adjusted and ii) how the functionality is to be adjusted. As used herein, a 'functionality' of the mobile device 98 that may be adjusted refers to an element or attribute of the mobile device 98 that is configured to perform a particular function.

Ex- 1005, ¶0133; *see* Ex-1005, ¶¶0123-0148.

97. Frye further discloses that the functionality of the vehicle audio and/or mobile device can be adjusted in response to the mobile device being **paired** with a **vehicle** telematics unit but when the mobile device is not present in a specific location (*e.g.*, a location designed to hold the mobile device). Ex-1005, ¶¶0018-0019, ¶0029, ¶¶0025-0027, ¶¶0041-0042, ¶¶0045-0046, ¶0080, ¶0123, ¶¶0132-0135, ¶¶0014-0016 ("[U]pon pairing the mobile device with the telematics unit of the vehicle . . . and thereafter each time the paired mobile device is connected to the telematics unit . . . the adjustment of the functionality of the audio component [of the vehicle system] may be accomplished on command by an in-vehicle telematics unit upon detecting that the mobile device is not located in or at a predefined location inside the vehicle."). For example, in Frye's system, "each time the user removes the device from the predefined location (e.g., from the holder), the audio component [of the vehicle system] is automatically adjusted until, for example, the user places

the device back to the predefined location (e.g., back in the holder)." Ex-1005, ¶0018. Frye states that, as a result, "[i]t is believed that the user may focus all of his/her attention on the activity that he/she is then-currently engaged in (such as driving a vehicle) rather than answering voice calls, reading and responding to incoming text messages, and/or the like." *Id.*

98. In my opinion, to the extent that Cazanas alone does not already disclose or render obvious this claim element, it would have been obvious to a PHOSITA to permit the ***user*** to **select** the specific conditions for activation of the DNDA, including for the ***user*** to select that the DNDA should automatically initiate the inactive mode in response to the pairing of the mobile device with a vehicle in view of Frye's teachings. A PHOSITA would have been motivated to and would have found it desirable to incorporate user selection of conditions for activation of an inactive mode in order to maximize choice, flexibility, and user customization of the application, thus best accommodating user preferences. In my opinion, doing so would represent nothing more than the predictable use of prior art elements to achieve similar results. One of the reasons it would have been obvious to a PHOSITA to allow **user selection** of the precise conditions for the inactive mode is because a parent may wish to make selections to restrict the operation of a teenager's phone. *See* Ex-1008, ¶¶0023, 0040; *see also* Ex-1005, ¶0014, ¶¶0095-0096, ¶0101. For example, on a teenager's phone, it may be desirable for the parent to make a

selection on that phone to always trigger the DNDA upon pairing. A parent can also thus be the claimed **user** with respect to a teen driver's phone.

99. Finally, as set forth under claim element [1d], the processor of Cazanas' mobile device executes instructions stored in memory which include instructions to execute the DNDA application. As set forth under claim element [1d], it would have been obvious to program Cazanas' **memory** to include **instructions** to perform the method of the combination as set forth herein, including performing the claimed functionality as set forth under claim element [1f]. *See* claim element [1d] (discussing motivation and reasonable expectation of success to program instructions into Cazanas' memory).

"[1g] receiving a user selection of an away message to use when the mobile device is in inactive mode;

100. In my opinion, Cazanas discloses and renders obvious this claim element. Cazanas explains that a **user** can **select** different response messages (**away message[s]**) **to use when the mobile device is in inactive mode**. Ex-1004, 2:44-46, 11:45-54 ("The response message content can be **selected** from one or more stored response message content."). Cazanas explains:

> The response message indicates that the end user of the mobile station 13 is traveling and can not respond at this time. The response message can be an SMS message back to the sender of the incoming

> SMS message. The response message can be **user configurable** each time the DNDA 15 application is executed. Also, predetermined responses can be created or provided and used. Also, response messages can be **customized** based on the sender of the incoming message.

Ex-1004, 5:36-43; Ex-1004, 1:66-67 (system can "automatically activate a **custom** or default Do Not Disturb message"); *see also* Ex-1004, 9:36-39, 10:41-47, 11:29-31, 12:40-51, claim 8, claim 16). As can be seen in the quotations above, Cazanas allows a user to create, customize, and select a response message, and Cazanas also permits a user to select a predetermined message. The system **receives** the user selections and implements an away message as directed by the user. In my opinion, it would be further obvious for the system to receive the user selection in order to implement the user's preferences.

101. Finally, as set forth under claim element [1d], the processor of Cazanas' mobile device executes instructions stored in memory which include instructions to execute the DNDA application. Ex-1004, 10:39-41 ("the stored program software will also include the Do-Not-Disturb Application (DNDA) 15"). These instructions also obviously include instructions associated with user selection of an away message to use when the mobile device is in inactive mode. Ex-1004, 10:39-47 ("[T]he DNDA 15, when active, enables the mobile station to automatically respond to incoming messaging service messages with a response message such as 'I am not

available to respond at this time.' Of course, the response message is user configurable . . ."). Additionally, as set forth under claim element [1d], it would have been obvious to program Cazanas' **memory** to include **instructions** to perform the method of the combination as set forth herein, including performing the claimed functionality as set forth under claim element [1g]. *See* claim element [1d] (discussing motivation and reasonable expectation of success to program instructions into Cazanas' memory).

"[1h] in response to the pairing of the mobile device and the vehicle, automatically initiating a process to place the mobile device in inactive mode;"

102. *See* claim element [1f]. As explained under claim element [1f], Cazanas discloses, or at least, renders obvious, that **in response to the pairing of the mobile device and the vehicle**, the DNDA **automatically initiat[es] a process to place the mobile device in inactive mode**. *See, e.g.*, Ex-1004, 3:62-67 ("The application can be triggered to **automatically execute** based on . . . the pairing of the mobile station with a portion of a vehicle."); *see also, e.g.*, Ex-1004, 9:29-39, 12:34-35, 13:20-39.

103. Furthermore, as set forth under claim element [1d], the processor of Cazanas' mobile device executes instructions stored in memory, and these instructions include instructions to execute the DNDA application. Ex-1004, 10:39-

41. As set forth under claim element [1d], it would have been obvious to program Cazanas' **memory** to include **instructions** to perform the method of the combination as set forth herein, including performing the claimed functionality as set forth under claim element [1h]. *See* claim element [1d] (discussing motivation and reasonable expectation of success to program instructions into Cazanas' memory).

"[1i] when the mobile device is in inactive mode, in response to receiving a communication from the wireless communication module, transmitting the user selected away message via the wireless module and"

104. *See* claim element [1f]. In my opinion, Cazanas discloses and renders obvious this claim element. During periods where the DNDA is activated (ON) (**the mobile device is in inactive mode**)(*see* claim element [1f]), when the mobile device **receiv[es] a communication**, the DNDA **transmit[s]** a response message (**user selected away message**)(*see* claim element [1g]) indicating that a user is unavailable in response to communications. As Cazanas explains:

> [T]he DNDA 15, when active, enables the mobile station to automatically respond to incoming messaging service messages with a response message such as "I am not available to respond at this time."

Ex-1004, 10:42-45, 5:23-43. Communications are **receiv[ed]** and **transmitted** via the wireless communication module. *See* claim element [1b] (discussing the

wireless communication module, transceiver 47); *see also* Ex-1004, 4:23-32. "The transceiver 47 provides **two-way wireless communication of information**, such as vocoded speech samples and/or digital message information." Ex-1004, 10:4-6. Cazanas specifically explains that "[c]ommunications via the transceiver 47 and the antenna 49 also include **various SMS, EMS and/or MMS messages**, **including the automatic response messages controlled by execution of the DNDA 15**." Ex-1004, 10:12-15.

105. Finally, as set forth under claim element [1d], the processor of Cazanas' mobile device executes instructions stored in memory which include instructions to execute the DNDA application. Ex-1004, 10:39-41. As set forth under claim element [1d], it would have been obvious to program Cazanas' **memory** to include **instructions** to perform the method of the combination as set forth herein, including performing the claimed functionality as set forth under claim element [1i]. *See* claim element [1d] (discussing motivation and reasonable expectation of success to program instructions into Cazanas' memory).

"[1j] suppressing one or more sound, visual, or vibration communication cues that would have accompanied the communication had the mobile device not been in inactive mode."

106. In my opinion, this claim element was obvious in view of Cazanas alone or in combination with Frye. As set forth above, Cazanas' "Do Not Disturb"

Application (DNDA) executes on the mobile device and controls the operation of the mobile device during certain periods of time when it is desirable that a user not be disturbed, including, when a user is operating a motor vehicle. Ex-1004, 3:58-4:8, 1:15-37. Cazanas explains that "[s]uch an application provides, for example, increased safety when the end-user of the mobile station is operating a vehicle." Ex-1004, 3:58-4:8. Cazanas explains that a "Do Not Disturb" message is sent to "anyone who sends the customer a SMS message while the 'Do Not Disturb' option is active (ON)." Ex-1004, 1:54-67, Fig. 3, 5:36-43, 10:39-54.

107. As discussed above regarding the "inactive mode" in claim element [1e], Cazanas achieves a net reduction (**suppression**) of incoming calls and messages while the DNDA is turned on, because any would-be caller will see a "Do Not Disturb" message that will warn and deter the would-be caller from disturbing the driver, consistent with Cazanas' stated purpose of reducing disturbances to a driver. Ex-1004, 1:54-67, Fig. 3, 5:36-43, 10:39-54, 3:58-4:8, 1:15-37. Accordingly, when Cazanas' DNDA is on (i.e., the mobile device is in **inactive mode**), the natural and intended consequence of Cazanas' design is that the driver will receive fewer communication notifications than he or she would have received if the DNDA was off.

108. It is my opinion that, to the extent that Cazanas alone does not expressly teach suppressing communication cues when the DNDA is turned on, this

suppression function was obvious in view of Frye's express teachings. Frye describes an application that adjusts the functionality of a mobile device when a user is driving. Ex-1005, ¶0005, ¶0014, ¶¶0045-0046, ¶¶0133-0135, ¶0123, ¶0020, ¶0025. Frye's application, when executed on a mobile device, can adjust the functionality of the device by **suppressing all message notifications**. Ex-1005, ¶¶0132-0134. Frye teaches:

> [T]he processor 101 may **restrict the message notification function** so that the user will not be notified (via, e.g., a ring tone or a vibration of the device 98) of an incoming text message. Thus, the **disabling of the message notification function** includes the disabling of a ring mode or vibration mode of the user's device 98 whenever a new text message is received. In this example, **the message notification function is restricted** so long as the device 98 is in an adjusted functionality (in this case, disabled) operational mode. As such, incoming messages will be received by the mobile device 98, however the **user will not know that the messages have been received** until the user checks the device 98 for new messages.

Ex-1005, ¶0134; *see also* Ex-1005, ¶¶0123-0137, Fig. 8.

109. Frye thus discloses s**uppressing one or more sound, visual, or vibration communication cues that would have accompanied the communication had the mobile device not** been in a "disabled" operational mode (**inactive mode**). Incorporating Frye's teachings of suppression of notifications as

part of Cazanas' DNDA operation thus renders the DNDA an "**inactive mode**"—i.e., "a mode in which user notifications relating to incoming communications are suppressed." Ex-1016, 9.

110. In my opinion, a PHOSITA would have been motivated and would have had numerous reasons to incorporate Frye's teachings of suppression of notifications to ensure that Cazanas' DNDA would similarly suppress communication cues when the DNDA is activated.

111. First, doing so fulfills Cazanas' own stated purpose of providing "do not **disturb**" functionality that, among other things, will reduce the number of outside disturbances to the driver while operating a vehicle and thus promote safe driving. Ex-1004, 4:5-7. Indeed, as Frye expressly recognizes, distractions from incoming communication cues can be suppressed to such an extent that "the user will not know that the messages have been received" until the disabled notification function is restored. Ex-1005, ¶0134.

112. Second, silencing communication notifications would have been desirable because it was known increase driving safety by allowing the user to "focus all of his/her attention on the activity that he/she is then-currently engaged in (such as driving a vehicle)," a goal specifically recognized in Frye and throughout the art. Ex-1005, ¶0018; *see also* Ex-1004, 3:58-4:8; Ex-1005, ¶¶0003-0004, ¶¶0013-0014, ¶0110, ¶0117; Ex-1008, ¶¶0001-0002; Ex-1013, 1:25-2:3. Indeed, given the known

crash risk posed by both hands-free and hand-held mobile device use, combining Cazanas' away messages with Frye's suppression of communication cues would have been desirable in order to reduce or eliminate both incoming and outcoming mobile device communication use, whether hand-held or hands free. Ex-1008, ¶0001 ("Researchers have shown that using mobile phones while driving is four times as likely to get into crashes, and the increased crash risk is similar for hands-free and hand-held phones.").

113. Third, given that suppression was a known functionality as part of "Do Not Disturb" modes in the prior art, incorporating Frye's suppression functionality into Cazanas' DNDA application represents nothing more than an obvious design choice, and the simple combination of prior art elements to achieve predictable results—namely, a DNDA application that both sends an away message and suppresses incoming communication cues. Notably, Do Not Disturb functionality associated with mobile phones already included suppression of notifications:

> [W]hen the **DND [Do Not Disturb] mode** is activated, the **ringer may be silenced**, **all incoming calls may be blocked** or directed to voicemail, the mobile phone 106 may be placed into vibrate, **hibernate** or stand-by mode or powered off, or any other action may occur that **absolutely or selectively minimizes disturbance** of the mobile phone 106 to [a user].

Ex-1007, 4:51-58 (prior art patent to Google). Thus, in my opinion, the addition of notification suppression to Cazanas' DNDA would have been trivial and well within the ability of a PHOSITA.

114. In my opinion, a PHOSITA would have had a reasonable expectation of success in adding Frye's notification suppression functionality into Cazanas' DNDA as proposed above. I understand that a reasonable expectation of success is required only for the limitations actually recited in the claims. The relevant art in the relevant timeframe was predictable and it would have been well-within the exercise of ordinary skill to incorporate notification suppression into Cazanas' DNDA. In my opinion, the '853 patent's general and high-level disclosures confirm that implementing the combination was within the level of ordinary skill. Implementing such notification suppression would be trivial and could, for example, merely involve using an internal variable to track whether notifications should be suppressed, and then within any notification functions themselves, checking the internal variable and skipping activating any notifications if the notification should be suppressed—all of which would merely add only a few lines of code to functions that activate a notification. *E.g.*, Ex-1028, pp. 62-66.

115. Finally, as set forth under claim element [1d], the processor of Cazanas' mobile device executes instructions stored in memory which include instructions to execute the DNDA application. Ex-1004, 10:39-41. As set forth under claim

element [1d], it would have been obvious to program Cazanas' **memory** to include **instructions** to perform the method of the combination as set forth herein, including performing the claimed functionality as set forth under claim element [1j]. *See* claim element [1d] (discussing motivation and reasonable expectation of success to program instructions into Cazanas' memory).

CLAIM 2

> ***"2. The mobile device of claim 1 wherein the memory further includes instructions that when executed by the processor cause it to perform the step of:***
>
> ***when the mobile device is in inactive mode, in response to receiving the communication from the wireless communication module, suppressing all sound, visual, and vibration communication cues that would have accompanied the communication had the mobile device not been in inactive mode."***

116. *See* claim element [1j]. Claim 2 is similar to claim element [1j] except that it further requires that ***all*** **sound, visual, and vibration communication cues** be suppressed.

117. Cazanas alone or in view of Frye renders obvious this claim element for similar reasons as set forth under claim element [1j]. Frye expressly teaches "**disabling**" and "**restrict[ing]**" the message notification function to the fullest extent, such that "incoming messages will be received by the mobile device 98, however **the user will not know that the messages have been received** until the

user checks the device 98 for new messages." Ex-1005, ¶¶0132-0134; *see also* Ex-1005, ¶0110, ¶¶0135-0137.

118. In my opinion, it would have been obvious to a PHOSITA to suppress **all sound, visual, and vibration communication cues**, to the fullest extent as taught by Frye, in order to facilitate Cazanas and Frye's goals of minimizing distractions to a driver while a vehicle is operating and thereby improving driver safety. Ex-1004, 3:58-4:8; Ex-1005, ¶¶0002-0004; ¶¶0013-0014, ¶0018, ¶0110; *see also* analysis for claim 3.

CLAIM 3

"3. The mobile device of claim 1 wherein the memory further includes instructions that when executed by the processor cause it to perform the step of:

providing a notification of the communications upon completion of the inactive mode."[5]

119. In my opinion, Cazanas discloses or renders obvious this claim element. Once the DNDA is deactivated (**completion of the inactive mode**), Cazanas teaches that the user has received and can then respond to messages received when the DNDA was engaged (i.e., in **inactive mode**). *See, e.g.*, Ex-1004, 1:54-67, 3:11-17,

[5] I note that this claim language recites "communications" but that claim 1 only refers to "a communication."

3:58-4:7, 11:5-17, 12:20-22, 12:49-61, 13:11-31. A PHOSITA would thus appreciate that the user has been **notifi[ed]** of a communication in order for the user to be able to determine that a communication has in fact been received so that the user can respond to that communication. *See, e.g.*, Ex-1006, ¶¶0048–0049 (creating and reporting a log of missed calls/messages to the driver), ¶¶0057–0068 (same). It it would thus be obvious to a PHOSITA in view of Cazanas' teachings to **provid[e] a notification of the communications upon completion of the inactive mode**.

120. This claim element would have been further obvious to a PHOSITA in view of Frye. Frye teaches providing a **notification of the communications upon completion of** a restricted communication mode (an **inactive mode**). As Frye explains:

> If, for example, the functionality is a message notification function of the user's mobile device 98, the processor 101 may restrict the message notification function so that the user will not be notified (via, e.g., a ring tone or a vibration of the device 98) of an incoming text message. Thus, the disabling of the message notification function includes the disabling of a ring mode or vibration mode of the user's device 98 whenever a new text message is received. In this example, the message notification function is restricted so long as the device 98 is in an adjusted functionality (in this case, disabled) operational mode. **As such, incoming messages will be received by the mobile device 98, however the user will not know that the messages have been received until the user checks the device 98**

for new messages.

Ex-1005, ¶¶0132-0134. A PHOSITA would appreciate and understand that the user has been **notifi[ed]** of a communication in order to determine whether any communications have been received when the user checks the device for new messages. It would thus also be obvious in view of Frye's teachings to **provid[e] a notification of the communications upon completion of the inactive mode**.

121. Furthermore, to the extent Patent Owner contends that this claim requires that a notification of a communication received during inactive mode is provided *only* upon completion of the inactive mode,[6] doing so is similarly obvious to a PHOSITA in view of Cazanas and Frye. A PHOSITA would have found it obvious to do so in order to facilitate Cazanas and Frye's goals of eliminating distractions to a driver while a vehicle is operating and thereby enhancing driver safety. Ex-1004, 3:58-4:8; Ex-1005, ¶¶0002-0004, ¶¶0013-0014, ¶0018, ¶0110; *see also* analysis for claim 2.

CLAIM 4

"4. The mobile device of claim 1 wherein the communication received from the wireless communication module is an SMS

[6] In my opinion, the plain meaning of this claim language contains no such restriction.

message."

122. In my opinion, Cazanas discloses or renders obvious this claim element. Cazanas explains that **received communication[s]** can be "messaging service messages (e.g., simple messaging service messages (SMS), enhanced messaging service messages (EMS), and multi-media messaging service messages (MMS)) received at the mobile station 13." Ex-1004, 4:48-67, 6:46-7:9, 7:29-34. Cazanas explicitly states that "[c]ommunications via the transceiver 47 [**wireless communication module**] and the antenna 49 also include various **SMS**, EMS and/or MMS messages, including the automatic response messages controlled by execution of the DNDA 15." Ex-1004, 10:4-15.

CLAIM 5

"5. The mobile device of claim 1 wherein the communication received from the wireless communication module is an email."

123. This claim element would have been obvious to a PHOSITA over the combination of Cazanas and Frye. While Cazanas does not specifically state that the communication received from the wireless communication module can be an e-mail message, Cazanas expressly contemplates the applicability of its teachings to different types of communications. Cazanas states:

> Those skilled in the art will recognize that the present teachings are amenable to a variety of modifications and/or enhancements. For example, although some aspects of the present disclosure describe

> the DNDA 15 responding only to messaging service messages, it is possible to extent the teaching to respond to incoming voice telephone calls with messaging service messages as well.

Ex-1004, 14:45-51. Cazanas also expressly recognizes that "**e-mailing** and texting" while driving have been banned as distracting to a driver. Ex-1004, 1:15-31. In my opinion, a PHOSITA would thus be motivated to extend Cazanas' teachings to other kinds of communications, including **e-mail,** which Cazanas expressly mentions and which is no less distracting to a driver than reading and typing SMS messages (*see* claim 4 above). Cazanas also specifically teaches that digital transceiver (XCVR) 47 (**wireless communication module**) can be used to send and receive a wide variety of "digital message information," which a PHOSITA would recognize would carry email communications. Ex-1004, 9:57-10:6.

124. Furthermore, Frye specifically teaches that "**electronic mailing (or e-mail) capabilities**" can be controlled using its system. Ex-1005, ¶0133, ¶0025, ¶0108. Thus, in my opinion, a PHOSITA would be motivated to incorporate control of emails into Cazanas' system in view of Cazanas and Frye's teachings, particularly in light of Cazanas' own statement that "e-mailing" while driving has been banned. Ex-1004, 1:15-31. A PHOSITA would have had a reasonable expectation of success in doing so, because Cazanas' DNDA is already programmed to automatically respond to "various SMS, EMS and/or MMS messages" (Ex-1004, 10:4-15), and

adding automatic responses to e-mail communications would merely involve wrapping portions of the e-mail functionality with the same code used to automatically respond to the SMS, EMS, and/or MMS messages. *See also* claim element [1d] (discussing motivation and reasonable expectation of success).

CLAIM 6

"6. The mobile device of claim 1 wherein the communication received from the wireless communication module is a cellular phone call."

125. This claim element would have been obvious to a PHOSITA over Cazanas alone or further in view of Frye. Cazanas expressly contemplates the applicability of its system to different types of communications. Cazanas states:

> Those skilled in the art will recognize that the present teachings are amenable to a variety of modifications and/or enhancements. For example, although some aspects of the present disclosure describe the DNDA 15 responding only to messaging service messages, **it is possible to extend the teaching to respond to incoming voice telephone calls with messaging service messages as well**.

Ex-1004, 14:45-51. Cazanas also specifically teaches that digital transceiver (XCVR) 47 (**wireless communication module**) can be used to send and receive voice communications. Ex-1004, 9:57-10:3, 9:49-56; *see also* Ex-1004, 4:23-32.

126. Frye also specifically teaches that "**voice calling** capabilities" can be controlled using its system. Ex-1005, ¶0133, ¶0025, ¶0018, ¶0055, ¶0090, ¶0108,

¶0110; *see also* Ex-1005, ¶¶0002-0004. Frye states that, as a result of limiting the function of the device/communication systems while a user is driving, "[i]t is believed that the user may focus all of his/her attention on the activity that he/she is then-currently engaged in (such as driving a vehicle) rather than answering voice calls." Ex-1005, ¶0018. In my opinion, a PHOSITA would be motivated to incorporate control of voice calling into Cazanas' system such that the system can control and respond to a **cellular phone call** in view of Cazanas and Frye's teachings, particularly Cazanas' express motivation to "extend the teaching to respond to incoming voice telephone calls with messaging service messages." Ex-1004, 14:45-51. Moreover, in my opinion, a PHOSITA would have had a reasonable expectation of success in doing so. Frye explicitly teaches control of voice calls and assumes that a PHOSITA would have been able to implement such functionality. Indeed, Cazanas' DNDA is already programmed to automatically respond to "various SMS, EMS and/or MMS messages" (Ex-1004, 10:4-15), and adding automatic responses to cellular phone calls would merely involve augmenting portions of cellular phone call processing functionality with the same code used to automatically respond to the SMS, EMS, and/or MMS messages.

CLAIM 7

"7. The mobile device of claim 1 wherein the user selected away message is a user customized away message."

127. *See* claim element [1g]. In my opinion, Cazanas discloses and renders obvious this claim element. Cazanas allows a user to create, **customize**, and select a response message to use (a **user customized away message**). Ex-1004, 1:54-67 (system can "automatically activate a **custom** or default Do Not Disturb message"); *see also* Ex-1004, 5:36-43 ("response messages can be **customized**"), 2:44-46, 11:45-52.

Ground 2. Claims 8 and 9 are over Cazanas, Frye, and Zhou

128. In my opinion, claims 8 and 9 are obvious over Cazanas, Frye, and U.S. Patent Application Publication No. 2011/0294520 ("**Zhou**")(Ex-1008).[7] Zhou was filed on June 28, 2011 and published on December 1, 2011. Ex-1008.

129. I understand that Zhou is prior art even to the earliest possible priority date for the '853 patent (June 14, 2013).

130. I understand that Zhou was not cited during prosecution of the '853 patent.

A. Overview of the Ground

131. Claim 8 depends from claim 1 and specifies that the instructions in the device's memory include the step of: "when the mobile device is placed in inactive

[7] Zhou issued as U.S. Patent No. 8,971,927. Ex-1026.

mode, provide a notification to a **certification server** that the mobile device is in inactive mode." Claim 9 depends from claim 8 and adds the step of: "when the mobile device exits inactive mode, provide a notification to a **certification server** that the mobile device exited inactive mode."

132. I note that a "certification server" is not defined in the '853 patent. The specification mentions that the certification server's intended use is "to 'certify' that a mobile device was not operational during a certain period as evidence that the phone was not used during driving." Ex-1001, 2:9–18. Using such evidence that the phone was in inactive mode, a driver might "qualify for discounts from an insurance company," and "parents may use such records to verify that teenage drivers are not being distracted." Ex-1001, 2:9–18.

133. As I discuss below, **Cazanas** and **Frye** each discloses a server that communicates with a mobile device that sends information about the device's usage to the server. The combination of Cazanas and Frye renders obvious sending a notification to the server each time the mobile device enters or exits an inactive mode. However, to the extent the claimed "certification server" further requires the server to be used in a process to certify that the mobile device was paired with a vehicle at a particular time, Zhou discloses a certification server used for the very same purpose as in the '853 patent: an insurance company adjusting a driver's premiums based on the driver's use of his/her mobile phone while driving.

1. Overview of Zhou

134. Similar to Cazanas and Frye, Zhou discloses a system for monitoring and controlling the use of a mobile device when the user is engaged in an activity, such as driving. Ex-1008, Abstract, ¶¶0006-0009, ¶0023, ¶¶0028-0033, ¶0038. Zhou explains that its system utilizes "GPS and accelerometer sensors embedded in mobile phones to monitor driving safety performance … to detect and prevent unsafe driving behavior such as talking on or texting with mobile phones while driving." Ex-1008, ¶0023. Zhou further explains that "driving safety data can be recorded in mobile phones and then transmitted to a centrally managed data server through wireless communication links." Ex-1008, ¶0023.

135. For example, Zhou's system includes a "client 110 unit on a GPS-enabled mobile phone 106 [to establish] a wireless connection 108 to the **driving safety data server 104** in a computer network." Ex-1008, ¶0027. "When a call is made or received using a mobile phone 106, the mobile phone client 110 can record location, speed and acceleration data from sensors embedded in the wireless device, such as a GPS sensor 114 and accelerometer 116. The data can be recorded to a local motion data cache 118 for further processing," such as providing "sufficient information for a user activity mode recognition program 120." Ex-1008, ¶0028. Thereafter, the "motion data and activity mode estimation results of a user of the

mobile phone 106 can be transmitted to the driving safety data server 104." Ex-1008, ¶0031.

136. Zhou further explains the server can include "[a] driving safety evaluation module . . . to perform a statistical analysis on collected raw driving data" and "calculate corresponding safety scores." Ex-1008, ¶0023. "Through a data exchange server or a data exchange interface, a system user can share the safety score of the user of the mobile phone 106 with a third party such as an **insurance company 130** to obtain insurance premiums." Ex-1008, ¶0033.

137. Zhou's overall system is illustrated in Figure 1, with a red box added to highlight the "driving safety data server 104" and the "insurance company 130":

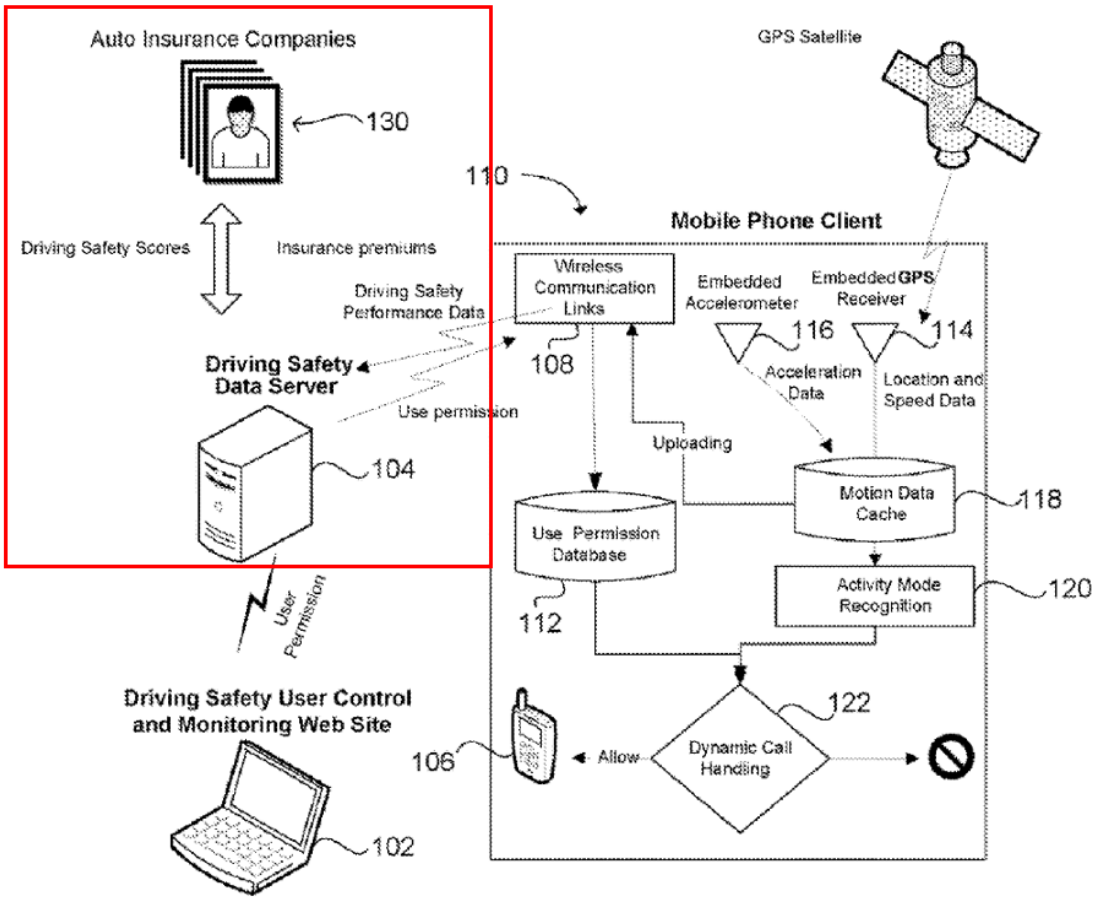


FIG. 1

Ex-1008, Figure 1 (red box added).

138. As Zhou explains, "[t]he cost of the insurance premium for the user can be reduced or increased based on the safety score of the user." Ex-1008, ¶0033. In some cases, a user "can be offered incentives based on the operator's safety score, thereby encouraging the vehicle operator to operate the vehicle within acceptable parameters." *Id.* Zhou states that, "by monitoring and sharing the driving safety performance data between insurance policyholders and insurance companies, the invention provides more incentives in terms of credits or discounts for insurance

policyholders and insurance companies to work together to improve driver safety performance. The system can prevent countless motorized vehicle accidents and deaths, thereby enabling a significant amount of money to be saved for the mobile phone owner and insurance company." Ex-1008, ¶0038.

B. Rationale (Motivation) Supporting Obviousness and Reasonable Expectation of Success

139. The rationale supporting obviousness, including motivation to combine and reasonable expectation of success, is discussed in detail in the "Claim Mapping" below.

C. Analogous Art

140. Zhou is analogous art because it is in the same field as the '853 patent (mobile devices and associated systems, including wireless network communications) (Ex-1001, 1:14-21, Abstract), and its methods would have been reasonably pertinent to the problems facing the named inventors. Both references concern reducing the use of mobile devices during operation of a vehicle and incentivizing safer driving with lower insurance premiums. Ex-1001, 1:14–46, 2:9-18; Ex-1008, Abstract, ¶¶0001-0002, ¶0007, ¶0023.

D. Claim Mapping

141. This section maps the challenged claims to the relevant disclosures of Cazanas, Frye, and Zhou, where the claim text appears in bold-italics, and the relevant mapping follows.

CLAIM 8

"8. The mobile device of claim 1 wherein the memory further includes instructions that when executed by the processor cause it to perform the step of:

when the mobile device is placed in inactive mode, provide a notification to a certification server that the mobile device is in inactive mode."

CLAIM 9

"9. The mobile device of claim 8 wherein the memory further includes instructions that when executed by the processor cause it to perform the step of:

when the mobile device exits inactive mode, provide a notification to a certification server that the mobile device exited inactive mode."

142. In my opinion, claims 8 and 9 are rendered obvious by the combination of Cazanas, Frye, and Zhou.

143. As explained in Ground 1 (incorporated herein in its entirety), Cazanas and Frye render obvious claim 1. Cazanas further teaches that its mobile station 13 (**mobile device**) can communicate with a "customer account **web server 43**" that stores, for example, "usage data." Ex-1004, 9:7–25, 4:8–22. Cazanas' "usage data" relates to the use of mobile station 13, as well as billing statements and other on-line information about a subscriber's account. Ex-1004, 9:7–25. Server 43 also gives the user access to configure the operation of the DNDA running on the mobile

station. *Id.* In this manner, Cazanas' **server** collects and stores information related to the usage of mobile station 13, including operation of the DNDA.

144. Frye also teaches a mobile device that can communicate information to a server. In Frye, **mobile device 98** communicates with "**host server 94**." Ex-1005, ¶¶0030-0031. Frye's system "may be configured to send data messages" (**notification**) "each time an RFID connection is established" between a mobile device and an associated holder "and each time the RFID connection is broken." Ex-1005, ¶0157, ¶0153. These messages are automatically sent to an "outside entity," such as the driver's parent, a public safety facility, or uploaded onto "**host server 94**." Ex-1005, ¶0014, ¶0019, ¶0074 ("stored data" on "host server 94" "may be used … to determine a **history of the usage** of the mobile device 98 by the driver while operating the mobile vehicle 12"), ¶0146, ¶¶0150–0151. Thus, Frye's host server 94 receives a notification each time the mobile device is placed in or removed from a predefined location in the vehicle.

145. In the combination with Cazanas' DNDA (**inactive mode**) that is triggered upon "pairing with . . . vehicle" in Ground 1 (Ex-1004, 3:62–66), Frye renders obvious sending a notification to a server each time the mobile device **enters or exits inactive mode**. In this combination, Frye's notification is sent each time Cazanas' activating step 310 is triggered upon "pairing" the mobile device with the vehicle (Ex-1004, 12:23–35) or deactivated per Cazanas' step 350 (Ex-1004, 13:11–

29), so that the server would maintain a "history of the usage of the mobile device [] by the driver while operating the mobile vehicle []" (Ex-1005, ¶0074). Frye recognizes that "automatically" sending such notifications to an "outside entity" can deter distracted driving and motivates the user to focus all his/her attention on driving. Ex-1005, ¶0018.

146. Cazanas and Frye do not expressly disclose that the notifications sent to the server are subsequently used to "certify" that the mobile device was in inactive mode at a particular time, such as in a certification process that allows the driver "to qualify for discounts from an insurance company." Ex-1001, 2:14–15. However, Zhou expressly discloses storing a driver's mobile phone usage data on a "driving safety data server 104" so that the driver may qualify for lower insurance premiums from an "insurance company 130" (see Figure 1 below).

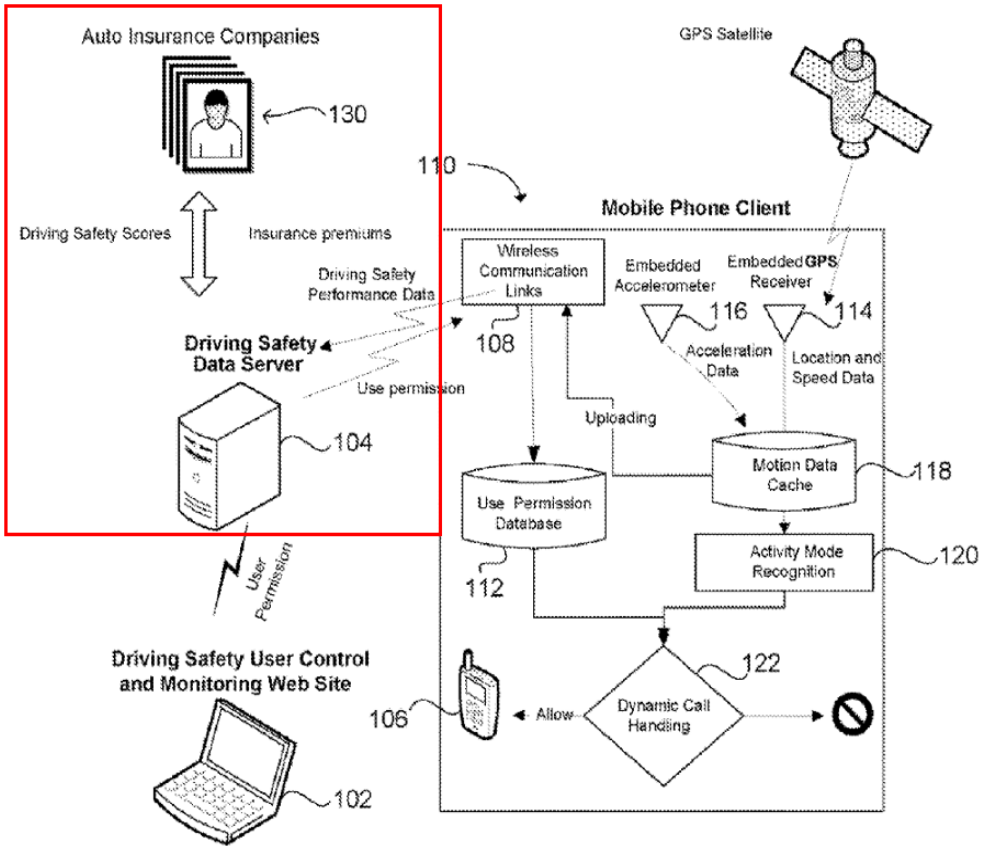


FIG. 1

Ex-1008, Figure 1 (red box added).

147. As seen above, Zhou teaches a system in which "client 110 unit on a GPS-enabled mobile phone 106 [**mobile device**] establishes a wireless connection 108 to the driving safety data server 104 in a computer network." Ex-1008, ¶0027. Zhou further teaches the "motion data and activity mode estimation results of a user of the mobile phone 106 can be transmitted to the driving safety data **server 104**." Ex-1008, ¶0031. The transmission of data to server 104 is a **notification**. Server 104 is a **certification server** as contemplated in the '853 patent. Ex-1001, 2:9–18.

Zhou's server 104 receives and stores activity data from the mobile phone 106 for the same purpose as the one in the '853 patent: to "share the safety score of the user of the mobile phone 106 with a third party such as an insurance company 130 to obtain insurance premiums," where premiums "can be reduced or increased based on the safety score of the user." Ex-1008, ¶0033, ¶0038, ¶0023.

148. It would have been obvious to a PHOSITA to program Cazanas' mobile device's memory to include instructions to transmit a notification to a server to indicate the status of Cazanas' DNDA (**inactive mode**) on the mobile device—specifically, a notification sent to Zhou's certification server each time the DNDA is activated upon pairing (Cazanas' step 310) and unpairing (Cazanas' step 350) the mobile device with the vehicle. A PHOSITA would have been motivated to program Cazanas' mobile device's memory to include instructions to transmit a notification to a server including the functionality of Zhou (**certification server**) and Frye each time Cazanas' DNDA is activated (per claim 8) and each time the DNDA is exited (per claim 9). Doing so would allow the server to contain a certified record showing all the times the mobile device's DNDA was activated and deactivated, and this record can then be used to adjust the owner's insurance premiums as taught by Zhou. A PHOSITA would have had several reasons to make this combination.

149. First, Frye expressly discloses sending **notifications** to an outside entity (including server 94) each time a mobile device is not located in a predefined

location within a vehicle for the purpose of deterring use of the device while driving. Ex-1005, ¶0157, ¶0153. Frye explains that "the transmission of the information to the outside entity when the RFID connection is broken may deter the vehicle driver (i.e., the owner/possessor of the mobile device 98) from using the device 98 while operating the vehicle 12." Ex-1005, ¶0153. Transmission of Frye's data messages to an outside entity includes "automatically upload[ing] the data message as a post on the host server 94," where the server will maintain "a history of the usage of the mobile device 98 by the driver while operating the mobile vehicle 12." Ex-1005, ¶0146, ¶0074; *see id.* ¶0150-0151. A PHOSITA would have been motivated to implement this functionality to deter the use of mobile devices during driving in order to increase driving safety, by allowing the user to focus all of his/her attention on driving. Ex-1005, ¶0018.

150. Second, Zhou expressly discloses using a dedicated server to store information about a mobile phone's usage while driving, so that a verifiable record of the device's usage can be shared with the driver's parent or with a third party such as an insurance company. Ex-1008, ¶0007. The data is faithfully maintained on the server for a period of time so that, in the case of an insurance company, the driver's "premium cost may be adjusted periodically based on the user's safety score during the previous period." Ex-1008, ¶0033. Zhou's use of a certification server is consistent with the automatic uploading of data messages from the mobile device

onto Frye's host server 94, which Frye teaches may be used "to determine a history of the usage of the mobile device 98 by the driver while operating the mobile vehicle 12." Ex-1005, ¶0074. A PHOSITA would have been motivated to utilize the functionality of Zhou's certification server for the stated benefits of encouraging "insurance policyholders and insurance companies to work together to improve driver safety performance," "prevent[ing] countless motorized vehicle accidents and deaths," and "enabling a significant amount of money to be saved for the mobile phone owner and insurance company." Ex-1008, ¶0038.

151. Third, a PHOSITA would have found combining Zhou's certification server functionality with the teachings of Cazanas and Frye to be a simple combination of known elements according to known methods yielding predictable results. No element performs a different or unexpected purpose in the combination than its purpose in the prior art. A PHOSITA would readily appreciate that information used to evaluate the safety score of a user in Zhou is not limited to motion data or estimates of a user's activity but instead can include any available information about the phone's use that indicates either safe or unsafe driving behavior, including all the times when the device was paired or unpaired from the vehicle. Indeed, Frye teaches that sending a notification "each time" the mobile device is placed or removed from a predefined location within the vehicle serves as a deterrent to using the device while driving. Ex-1005, ¶0157, ¶0153. In the

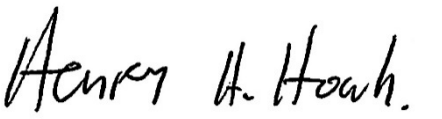
combination, a record of all the times when the mobile device was paired and unpaired is indicative of the activity of the DNDA, consistent with Cazanas' transmission of device usage data to a server (Ex-1004, 9:14–39), as well as Frye's server 94 containing a history of the usage of the mobile device while driving (Ex-1005, ¶0074).

152. In my opinion, a PHOSITA would have had a reasonable expectation of success in combining the teachings of Cazanas, Frye, and Zhou as proposed herein. I understand that a reasonable expectation of success is required only for the limitations actually recited in the claims. The relevant art in the relevant timeframe was predictable, and sending a notification of each pairing and unpairing event is simpler than Zhou's tracking and storage of location, speed, and acceleration data. *See* Ex-1008, ¶0043, ¶0031. It would have been well-within the exercise of ordinary skill to, for example, associate the inactivation or deactivation of the DNDA with a timestamp which notes the precise time that the application was activated or deactivated. It was common practice before 2013 to include timestamps in logging messages that are recorded on a server. *See, e.g.*, Ex-1029, p. 31. In my opinion, the '853 patent's general and high-level disclosures confirm that implementing the combination was within the level of ordinary skill.

XII. OATH

153. This declaration and my opinions herein are made to the best of my knowledge and understanding, and based on the material available to me, at the time of signing this declaration. I declare under penalty of perjury under the laws of the United States of America that all statements made of my own knowledge are true and that all statements made on information and belief are believed to be true. I understand that willful false statements and the like are punishable by fine or imprisonment, or both (18 U.S.C. 1001) and may jeopardize the validity of the application or any patent issuing thereon.

March 5, 2025
Date



Dr. Henry Houh