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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GENERAL MOTORS LLC

Petitioner

v.

EDWARD H. NORTRUP

Patent Owner

Case IPR2023-00994

Patent 10,444,028

PATENT OWNER'S PRELIMINARY RESPONSE

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Pursuant to 37 C.F.R. § 42.107, Patent Owner Edward H. Nortrup (“Nortrup” or “Patent Owner”), submits this Preliminary Response (“POPR”) to Petitioner General Motors LLC’s (“Petitioner”) Petition seeking *inter partes* review (“IPR”) of Claims 1-31 of U.S. Patent No. 10,444,028 (Ex. 1001, the “’028 Patent”).

The Petition asserts seven grounds of invalidity: (1) Claims 1-7, 9-10, 12-21, 25-26, 29, and 31 are obvious over U.S. Patent Pub. No. 2003/0055542 to Knockeart *et al.* (Ex. 1004, “*Knockeart*”) in view of U.S. Patent Pub. No. 2005/0026278 to Feldman *et al.* (Ex. 1005 “*Feldman*”), (2) Claims 7 and 8 are obvious over *Knockeart* in view of *Feldman* and U.S. Patent Pub. No. 2005/0096840 to Simske (Ex. 1006 “*Simske*”), (3) Claims 10, 11, and 31 are obvious over *Knockeart* in view of *Feldman* and U.S. Patent No. 7,203,598 to Whitsel (Ex. 1007, “*Whitsel*”), (4) Claims 14 and 22-24 are obvious over *Knockeart* in view of *Feldman* and U.S. Patent No. 6,615,133 to Boies *et al.* (Ex. 1008 “*Boies*”), (5) Claim 14 is obvious over *Knockeart* in view of *Feldman*, Boies, and U.S. Patent No. 5,845,227 to Peterson (Ex. 1009 “*Peterson*”), (6) Claims 27 and 28 are obvious over *Knockeart* in view of *Feldman* and Peterson, and (7) Claim 31 is obvious over *Knockeart* in view of *Feldman* and U.S. Patent No. 7,027,915 to Craine (Ex. 1010 “*Craine*”).

This POPR focuses exclusively on Claim 1 (the single independent claim in the ’028 Patent) and Ground 1 (the only Ground alleging invalidity of Claim 1). If the Board finds Patent Owner’s arguments below persuasive, the remaining claims

of the '028 Patent (i.e., dependent claims 2-31) are necessarily valid in light of Petitioner's failure to prove independent Claim 1 obvious. *See In re Fine*, 837 F.2d 1071, 1076 (Fed. Cir. 1988) ("Dependent claims are nonobvious under 35 U.S.C.S. § 103 if the independent claims from which they depend are nonobvious.") and MPEP § 2143.03.

I. SUMMARY OF ARGUMENTS PRESENTED IN THE PRELIMINARY RESPONSE

This POPR addresses only a few of the clear distinctions between Claim 1 and the *Knockeart/Feldman* combination (the combination that Petitioner relies upon in Ground 1 to allege that Claim 1 is obvious). As the initial observation, a POSITA would not combine *Knockeart* and *Feldman* as suggested by Petitioner. A POSITA would not combine a *Feldman* cell phone with *Knockeart's* in-vehicle system because it would result in a loss of functionality and/or duplicative and wasteful use of resources. Likewise, a POSITA would not populate *Knockeart's* databases with *Feldman's* traffic data because the inclusion of such data goes well beyond what data can be used in *Knockeart's* databases.

Beyond the impropriety of the *Knockeart/Feldman* combination, Petitioner argues that a POSITA would modify the cell phones of *Feldman* with the enablement/disablement scheme described in *Knockeart*. This modification is nonsensical as the enablement/disablement scheme described in *Knockeart* is for an in-vehicle system (i.e., not cell phones) and is specifically directed to two data

collection modes that are wholly absent in *Feldman*'s phones. If that was not enough, *Feldman* already describes a comprehensive network-driven method by which the privacy of a user's phone location data can be protected.

Continuing, the alleged enablement/disablement scheme pointed to by Petitioner as corresponding to the last claim element in Claim 1 does not at all prevent access to a user's location data. Claim 1 requires that "each of the plurality of cell phones further has a user initiated permission set comprised of a list of authorizations that permit a user to selectively *enable or disable access* to user cellphone location data." (Emphasis added). Petitioner ultimately relies on a single sentence in *Knockeart* to disclose this feature – "[t]he operator of the vehicle has the option of **enabling or disabling either mode of data collection through the user interface** of the in-vehicle system" to disclose the concept recited in Claim 1 that a user can enable or disable access to user cell phone location data. Petition at 23 (emphasis in original, quoting *Knockeart* at [0324]). But, immediately following this sentence, in the same paragraph, *Knockeart* states:

Also, the server system can enable (or request) either type of collection. For instance, the server system can enable more vehicles if it needs more data, and disable data collection in some vehicles if it is receiving more data than it needs.

Knockeart at [0324]. Thus, *Knockeart* discloses that while a user can enable or disable the two modes of data collection, it also discloses that the server system can

enable these same modes of data collection if it so chooses. This is antithetical to the plain language of Claim 1 of a user enabling or disabling *access* to the user's cell phone location data. In *Knockeart*, if the server wants data, it gets it, regardless of the vehicle operator's prior enablement/disablement setting. As such, Petitioner's allegations on this point also fail.

Finally, the *Knockeart/Feldman* combination fails to suggest Claim 1, as properly construed, concerning *multiple entities'* access to a user's cell phone location data that can be enabled or disabled. This concept (at least with respect to one party) is explicitly recognized by Petitioner at the very outset of its Petition:

The '028 patent further describes allowing a user to “enable, disable, or otherwise control the access of the mobile communication facilities location” for the user giving “the user the ability to selectively turn on or off *another part[y's]* ability to access an associated location.”

Petition at 3-4 (emphasis added, citing the '028 Patent at 45:66-46:2, noting that in the '028 patent, Petitioner's “part[y's]” above is “parties”). To give meaning to the claim term's “list of authorizations” and “selectively enable or disable access” language requires the user to choose between more than one entity or other “thing” (i.e., person, service, application, computing device, etc.) when allowing access to the “user cellphone location data.” *Knockeart* fails to disclose this concept because only one entity is accessing the user's location data – *Knockeart's* server. Thus, there is no “list of authorizations” from which a user can “*selectively* enable or

disable access.” This additional deficiency is yet another reason why the *Knockeart/Feldman* combination fails to suggest Claim 1 as set forth in the Petition.

II. THE ’028 PATENT AND THE CHALLENGED CLAIMS

A. The ’028 Patent

The ’028 Patent claims priority to provisional applications filed on February 5, June 10, and October 12, 2004, and issued on October 15, 2019. It has 63 figures and 51 columns of disclosure. The ’028 Patent is but one of a family of patents that have issued from the original disclosures. *See* ’028 Patent, 1:6-18 (listing related applications and patents).

The ’028 Patent describes many embodiments and inventions related to “locating positions, determining route information and providing information to users.” ’028 Patent, 1:26-27. Some examples of these various embodiments include providing various routing information to travelers, including the shortest route, *id.* at 22:56-67, how to assess traffic conditions to update the routing information, *id.* at 5:15-25; adjusting routing information based on the traveler’s habits (e.g., typical driving speed as compared to the actual speed limit) *id.* at 27:4-18, warning travelers of hazardous conditions near them, *id.* at 27:19-28, etc. In short, the ’028 Patent describes a variety of location-based services, with a focus on routing and directions.

B. '028 Patent, Claim 1

The '028 Patent contains a single independent claim, Claim 1. This claim generally describes a computer program product that allows for the reception of a current location (e.g., the current location of a vehicle) (“automatically receiving a current location”) and the presentation of a map of roads in the areas near the current location, where the map contains a route to a destination that is based, at least in part, on the current traffic conditions (“presenting a roadway map of an area proximate the current location, wherein the map includes at least one route from the current location to a destination based at least in part on a traffic condition”).

Relating to the “receiving” limitation of Claim 1, the '028 Patent describes how this can be done by receiving a GPS signal, for example. *See, e.g., id* at Fig. 7 and 20:11-35. Related to the “presenting” limitation, the '028 Patent describes a system that includes a location facility that can store the current location of a device such as a cell phone, a traffic information database that may include information relating to such things as “route traffic, alternate routes, route times, route time predictions, typical route performance or other information relating to routes and or directions”, and a destination database. *Id.* at 29:45-30:7. These facilities and databases are used by a route information facility to provide traffic information to a traveler. *Id.* at Fig. 39 and accompanying description. Claim 1, from the perspective of a suitable electronic product, is directed to the computer program product, for

example the software on the electronic product, which when executed by the processor(s) in the product, allows for the reception and presentation of the various information.

The next portion of Claim 1 further relates to the “traffic condition” on which the “route” is at least partially based. This portion of Claim 1 requires “the traffic condition is at least in part based on a plurality of cell phone speeds estimated through an assessment of multiple locations of each of a plurality of cell phones.” The ’028 Patent discloses several ways in which the location of a cell phone can be determined, including the use of GPS signals. *Id.* at 20:43-21:11. This information can then be utilized to develop the traffic information that is used to determine the route presented. *Id.* at 20:61-64.

The final portion of Claim 1 describes how the cell phones that are used to, in part, develop the traffic information have the ability to enable or disable access to the location data of the cell phone (“each of the plurality of cell phones further has a user initiated permission set comprised of a list of authorizations that permit a user to selectively enable or disable access to user cellphone location data”). This limitation will be discussed in more detail below in Section III. Generally, this limitation requires that the users of the cell phones that are used to determine, in part, the traffic conditions in which the presented route is (in part) based have the ability

to enable or disable access to the location of the cell phone, thereby providing an amount of privacy to the users of the cell phones.

III. PATENT OWNER’S PROPOSED CLAIM CONSTRUCTION

Patent Owner believes the construction of the phrase “each of the plurality of cell phones further has a user initiated permission set comprised of a list of authorizations that permit a user to selectively enable or disable access to user cellphone location data” from Claim 1 will assist the Board in coming to the correct decision regarding the ‘028 Patent. Patent Owner refers to this entire phrase below as the “list of authorizations” phrase for the sake of brevity.

Patent Owner proposes that the phrase set forth above be construed as “each of the plurality of cell phones further has a user-initiated permission set comprised of a list of authorizations that permit a user to selectively enable or disable the *entities’ set forth in the list of authorizations* access to user cell phone location data.” Inclusion of the phrase “entities’ set forth in the list of authorizations” is helpful on two points.

First, this construction makes clear who/what has “access” enabled/disabled to the user cell phone location data. As will be discussed below, the ’028 Patent clearly spells out that it is the entities associated with the list of authorizations whose access to the user cell phone location data is being enabled/disabled.

Second, this construction makes clear that there is more than one entity whose access is being enabled/disabled. The terms “permission set” and “list” certainly suggest that more than one entity is contemplated. But the term “authorizations” is the clincher. It explicitly makes clear that there is more than one entity whose access to user cell phone location data is being enabled/disabled.

The portion of the '028 Patent that is most helpful in construing the list of authorizations phrase is Figure 54 (reproduced below) and the corresponding discussion of this Figure ('028 Patent at 45:26-46:37).

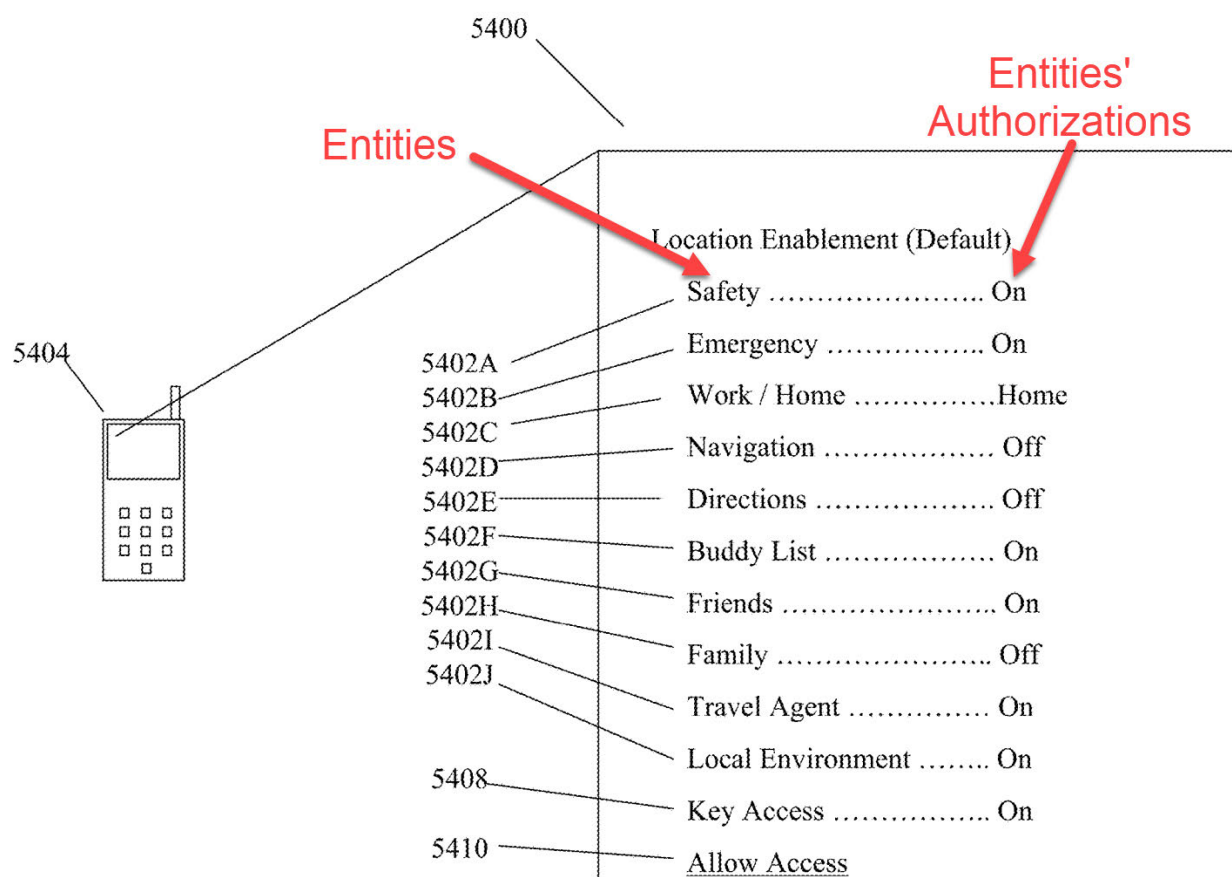


Fig. 54

'028 Patent, Fig. 54 (annotations in red added). [Note: The text of the '028 Patent uses reference numbers 202A-J and 210 to refer to items 5402A-J and 5410 as shown in Fig. 54.] The '028 Patent describes Fig. 54 as follows:

FIG. 54 illustrates a secure location based service user interface 5400. The user interface 5400 may be presented through a mobile communication facility 5404 by providing a user with a software generated interface. In this embodiment, the user interface is presented with a menu of selectable and or alterable selections 202A-J [5402A-J in Fig. 54]. . . . In embodiments, groups of people or entities are presented through a link. For example, a user may have a 'buddy list' where known people or entities are known and this group may be identified with link 202F [5402F in Fig. 54]. The user may enable or disable this group's access to information in the mobile communication facility (e.g. location information). Other group examples include work, colleagues, home, family, navigation facilities, direction facilities, traffic facilities, friends, agents, travel agent, lawyer, or other groups, entities, and or individuals. Links such as emergency and safety may also be provided to allow the user control of emergency and or safety facilities access to information.

To summarize this portion of the '028 Patent, Fig. 54 presents the user with lists of entities (Safety, Emergency, Work/Home, Navigation, etc.) and the authorizations of those entities to access "information in the mobile communication facility (e.g. location information)." '028 Patent, 45:37-8. Both the list of entities and the list of authorizations associated with those entities are identified in red in Fig. 54 above.

The '028 Patent then describes the specific example of a “buddy list” (element 5402F/202F) and describes how a “user may enable or disable this group’s access to information in the mobile communication facility (e.g. location information).” *Id.*

Fig. 54 and the accompanying description are the portions of the intrinsic record that support Patent Owner’s proposed construction of the authorization list phrase. This portion of the record shows/describes all aspects of the claim language as well as Patent Owner’s proposed construction that ties the entities associated with the list of authorizations to the enabling/disabling access feature recited in Claim 1.

Patent Owner proposes this construction because Petitioner has applied a materially different one in its invalidity analysis. Petitioner believes that the ability to enable/disable “multiple modes of location data collection” correspond to the claimed list of authorizations and accordingly that *Knockeart’s* description of the ability to enable/disable these data collection modes of operation corresponds to the claim language “permit a user to selectively enable or disable access to user cellphone location data.” Petition at 24-25.

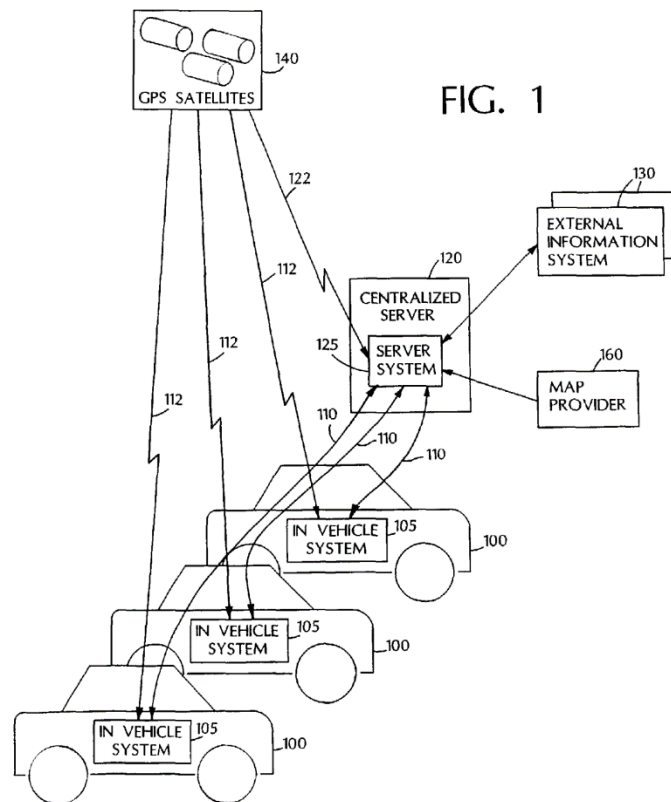
Perhaps viewing the list of authorizations phrase in a vacuum one could come to this conclusion. But that is not the proper way to construe patent claims under the *Phillips* standard. The '028 Patent simply does not discuss enabling/disabling different modes of data collection related to a single entity’s access to user cell phone location data and a POSITA would not have understood Claim 1 to cover such.

Instead, a POSITA, at the time of the invention, reading Claim 1 and with access to Fig. 54 and the accompanying text, would have come to the conclusion as to what Patentee meant by the list of authorizations phrase, namely that this phrase concerns enabling/disabling various entities' access to user cell phone location data.

IV. SUMMARY OF THE REFERENCES

A. *Knockeart*

Knockeart is a patent application published on March 20, 2003, that contains 420 paragraphs in its disclosure. *Knockeart's* primary disclosure relates to an in-vehicle navigation system and related components. See, e.g., *Knockeart* at [0071] and Fig. 1 (reproduced below).



Knockeart's system makes use of a traffic database that “includes typical link speeds that it uses for route planning.” *Knockeart* at [0170].

Knockeart's traffic database contains traffic data from “probe” vehicles. Probe vehicles are “some or all [of] vehicles 100 [shown in Fig. 1].” *Id.* at [0318]. These probe vehicles collect traffic information and send it to *Knockeart's* traffic database, where that information, along with other information, is used to plan routes. “In this way, the vehicle navigation system can be a source of traffic information in addition to, or instead of, being a consumer of traffic information from external information system 130.” *Id.*

i. *Knockeart's Two Modes of Data Collection*

Knockeart describes two modes of operation used by the probe vehicles to collect data:

First, ongoing traffic “profile” data is collected by the in-vehicle systems in probe vehicles. Occasionally, the probe vehicles upload their collected data to the server system and the server system updates its traffic database based on the uploaded information. In the second mode, the in-vehicle systems in the probe vehicles detect when the vehicle's speed is significantly slower than would be expected based on the class of road being traveled, or based on traffic related data that is stored in the vehicle and which relates the expected speed to the road segment being traveled on. When the in-vehicle system detects that the vehicle's speed is slower than expected, that is, it detects any exception from expected traffic conditions, it immediately reports the

exception to the server system so that the server system can update its traffic database 524 to reflect unexpected traffic conditions.

Id. at [0319].

In the first mode of operation, a probe vehicle stores in its “link speed log” “the time the vehicle takes to travel from one end to the other of the link, . . . a reference to the link, the time of day, and the speed traveled along the link” *Id.* at [0322]. This information is sent to *Knockeart*’s server system (e.g., server system 125 in Fig. 1) “[o]ccasionally, for example when vehicle leaves the main roads network, or periodically, such as daily” *Id.* at [0323]. This mode of operation is meant to keep the traffic database updated generally, but not in a real-time fashion (that is the purpose of the second mode of operation, described below). *Id.* at [0325] (explaining a use of the first mode of operation - “[f]or example, the navigation application incorporates the reported speeds for a particular link into an average speed for that link that is stored in its traffic database.”).

The purpose of the second mode of operation is to report in real-time (or near real-time) significant deviations from the average time it takes to traverse a link, as encountered by the probe vehicles (e.g., a traffic jam caused by an accident). As disclosed by *Knockeart*:

As in the profile data collection mode [the first mode of data collection], the in-vehicle system of a probe vehicle tracks the location of the vehicle using GPS location estimates as it traverses links of the main

roads network, and detects when the vehicle traverses particular links in the main roads network. The in-vehicle system detects that a traffic exception has occurred if a travel speed along a link is substantially slower or faster than expected . . . for that link at that time of day.

Id. at [0337]. As shown above, *Knockeart* refers to these deviations in actual speed along a link, as measured by a probe vehicle, from the average speed of the link as a “traffic exception.”

“When a traffic exception occurs, the in-vehicle system establishes a communication session with the server system by placing a cellular telephone call to the server system.” *Id.* at [0339]. Although not explicitly disclosed in this portion of *Knockeart*, it is clear from the context of the disclosure that these telephone calls are to happen as soon as the traffic exception is detected. *See, e.g., id.* at [0343] (disclosing an alternative embodiment of the second mode of data collection – “[E]xceptions are logged *rather than immediately reported to the server system*. The in-vehicle system then uploads the logged exceptions to the server system in the same way that it can upload logged profile data [the first mode of operation].” (emphasis added)).

The same type of data sent to the server in the first mode of operation is sent in the second mode of operation, namely the identity of the link and the travel speed along the link. The one difference is data noting that this transmission is a traffic exception. *Id.* at [0338] (second sentence).

In sum, the only substantial difference between *Knockeart's* first data collection mode and its second has to do with the timing of when the collected information about the time to travel a particular link is reported to the server. In the first mode, timing is not critical, as the data is combined with other data to maintain a database of the expected time it takes to traverse a link. In the second mode, timing is important because the reports are used to route vehicles around unexpected traffic backups. But, in both cases, the essence of what is reported is the identity of a link and the time it took the vehicle to traverse it.

ii. *Knockeart's Enablement/Disablement of the Data Collection Modes*

Knockeart discloses that “[t]he operator of the vehicle has the option of enabling or disabling either mode of data collection through the user interface of the in-vehicle system. *Id.* at [0324] (first sentence). But, the rest of the paragraph states:

Also, the server system can enable (or request) either type of collection. For instance, the server system can enable more vehicles if it needs more data, and disable data collection in some vehicles if it is receiving more data than it needs.

Id. at [0324] (second and third sentences). Petitioner relies heavily on the first sentence of Paragraph 324 to disclose the last element of Claim 1, but never discusses the second sentence. *See, e.g.*, Petition at 23 (stating “[f]urthermore, “[t]he operator of the vehicle has the option of ***enabling or disabling either mode of data collection through the user interface*** of the in-vehicle system.”) (emphasis in

original). The reason for Petitioner's conspicuous omission is clear - *Knockeart's* disclosure is that while a vehicle operator can enable/disable data collection, *so can the server*.

Further, there is no doubt that the server can override the vehicle operator's settings. The only reason a server would need to enable the data collection modes is that the data collection modes were disabled to start with. *Knockeart* makes clear that if the server needs more data, it can enable more vehicles' data collection. If it needs less, it can disable vehicles' data collection.

B. *Feldman*

Feldman describes a system "for modeling and processing vehicular traffic data and information, and using the modeled and processed vehicular traffic data and information for providing a variety of vehicular traffic related service applications to end users." *Feldman* at [0017]. *Feldman's* disclosure is more directed to the details of modeling a road network than it is on describing how cell phones can be used. *See, e.g., Feldman* at [0021]-[0029] (the paragraphs of *Feldman* summarizing the eight figures presented in *Feldman*).

Like the '028 Patent, *Feldman* directly addresses the privacy issues surrounding tracking individuals' cell phones.

Another main aspect of the present invention relates to techniques for protecting the privacy of individuals associated with or hosting the sources, that is, the mobile sensors or electronic devices, of vehicular

traffic data and information which are acquired, collected, or gathered, using techniques based on GPS and/or cellular telephone types of mobile wireless communications networks or systems.

Feldman at [0037]. In the next sentence, *Feldman* goes as far to state that “the inventors are unaware of any prior art teaching for performing this in the field of vehicular traffic data and information.” *Id.* This statement is recognition that at the time of *Feldman* (priority date of August 28, 2000, three and one-half years before the '028 Patent), privacy issues related to the tracking of users' phones for the purposes of acquiring traffic data were new.

Feldman addresses these privacy concerns not by allowing the user to control the access to a phone's location data, as described and claimed in the '028 Patent, but by anonymizing the data once collected. *Feldman* acknowledges that “[t]racking vehicles without the knowledge and consent of their drivers may be considered as violation of privacy” then present its solution - “method / system 10, in general, and technical architecture of method / system 10, in particular, are designed for *deleting identities of the associated sample units, and for deleting individual sensor tracks once their derived velocities are incorporated into calculations* and processing associated with the plurality of oriented road sections within oriented road section network 14.” *Id.* at [0064] (emphasis added). *Feldman* goes on to state that “[t]racked vehicles are not identified by using phone numbers. Even within the short

tracking times, mobile sensor identities are kept within the location of the cellular phone network, so that during the whole process, privacy of cellular phone users is protected.” *Id.* at [0065].

Between *Knockeart* and *Feldman*, *Feldman* is the reference that directly addresses the privacy issues surrounding collection of data for the purposes of analyzing traffic patterns. The solution *Feldman* presents stands in stark contrast to the corresponding solution disclosed in the ’028 Patent. In *Feldman*, the system removes user-identifiable information from the data collected from the phones, as compared to the solution presented in the ’028 Patent, where a user is allowed to “opt out” of the data collection process entirely.

V. APPLICABLE LEGAL STANDARDS

The Board may only grant a petition for IPR where “the information presented in the petition . . . shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a); 37 C.F.R. § 42.108(c). Petitioner bears the burden of showing that this statutory threshold has been met. *See* Office Patent Trial Practice Guide, 77 Fed. Reg. 48,756, 48,756 (Aug. 14, 2012).

Section 103 of the Patent Act provides that “[a] patent may not be obtained . . . if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at

the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.” 35 U.S.C. § 103(a). The obviousness analysis requires several threshold inquiries identified below.

A. Claims cannot be found obvious if an element is missing.

If a single element of the claim is absent from the prior art, the claim cannot be considered obvious. *See CFMT, Inc. v. YieldUp Int’l Corp.*, 349 F.3d 1333, 1342 (Fed. Cir. 2003) (“Obviousness requires a suggestion of all limitations in a claim.”) (citing *In re Royka*, 490 F.2d 981, 985 (C.C.P.A. 1974)); *In re Rijckaert*, 9 F.3d 1531, 1534 (Fed. Cir. 1993) (reversing obviousness rejection where the prior art did not teach or suggest all claim limitations); *Garmin Int’l, Inc. v. Patent of Cuozzo Speed Techs. LLC*, Case No. IPR2012-00001, Paper 15 at 15 (P.T.A.B. Jan. 9, 2013) (refusing to institute an IPR under 35 U.S.C. § 103 where the prior art did not disclose all claim limitations).

B. A Petition Must Address the *Graham* Factors.

Obviousness is resolved on a number of factual determinations including (1) the scope and content of the prior art, (2) any differences between the claimed subject matter and the prior art, and (3) the level of ordinary skill in the art. *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966). Petitions for IPR “must address the Graham factors.” *Eizo Corp. v. Barco N.V.*, Case No. IPR2014-00358, Paper 11 at 29-30 (P.T.A.B. July 23, 2014) (citing *Graham*, 383 U.S. at 17-18). For example,

the Board faulted the petitioner in *Eizo Corp.* for failing to identify the differences between the claimed subject matter and the prior art. *Id.* at 29-30. In particular, the Board found insufficient the petitioner’s “conclusory assertion” that “[t]o the extent [the first reference] may not explicitly teach” the limitation, the second reference “explicitly teaches this limitation.” *Id.* at 30. The Board explained that “such an assertion *fails* to resolve the exact differences sought to be derived from” the second reference. *Id.* (finding that petitioner had not shown a reasonable likelihood of prevailing on that ground). Other Board decisions have reached the same result. *See, e.g., Moses Lake Indus., Inc. v. Enthone, Inc.*, Case No. IPR2014-00243, Paper 6 at 18 (P.T.A.B. June 18, 2014); *Moses Lake Indus., Inc. v. Enthone, Inc.*, Case No. IPR2014-00246, Paper 6 at 17 (P.T.A.B. June 18, 2014); *eBay, Inc. v. Paid, Inc.*, Case No. CBM2014-00125, Paper 15 at 21 (P.T.A.B. Sept. 30, 2014).

C. A Petition Must Provide Articulated Reasoning with Rational Underpinning to Combine References.

The conclusion of obviousness based on a combination of references must also be supported with explicit analysis of a reason to combine those references. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007). The Federal Circuit has stated that such reasons must be more than “mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006); *accord Innogenetics, N.V. v. Abbott Labs.*, 512 F.3d 1363, 1374 (Fed. Cir.

2008) (agreeing with the district court’s reasoning that “some kind of motivation must be shown from some source, so that the jury can understand why a person of ordinary skill would have thought of either combining two or more references or modifying one to achieve the patented method”); *see also LG Elecs., Inc. v. Cellular Commc’ns Equip. LLC*, Case No. IPR2016-00197, Paper 7 at 7-11 (P.T.A.B. April 29, 2016) (faulting a petition’s obviousness analysis for lack of sufficient articulated reasons with rational underpinnings for modifying references to implement particular elements required in the claims).

VI. THE PETITION DOES NOT DEMONSTRATE THAT THE CHALLENGED CLAIMS ARE UNPATENTABLE UNDER GROUND 1.

Petitioner uses *Knockeart* and *Feldman* as the sole references to disclose the features of Claim 1. These references, however, fail to disclose or render obvious various limitations of Claim 1 for a variety of reasons as discussed below.

A. Patent Owner Disagrees that *Knockeart* Can Be Modified by *Feldman* in the Manner Proposed by Petitioner

As a general matter, Patent Owner takes issue with the *Knockeart-Feldman* combination as a whole. Petitioner puts forward two theories on how a POSITA can combine *Knockeart* and *Feldman*. First, Petitioner posits that “a POSITA [would] beneficially apply the teachings of *Feldman* to *Knockeart* to implement all or a portion of *Knockeart*’s in-vehicle systems as cellular phones for the purpose of collecting probe vehicle traffic data.” Petition at 9. Later, Petitioner gives

justifications for such an implementation – “[u]tilizing cell phones already in the possession of many if not most drivers, and the existing cellular phone infrastructure, to collect traffic data would have eliminated the need for users of the system to have multiple pieces of potentially expensive computing equipment—i.e., both a cell phone (for communication and other non-traffic/navigation related purposes) and a dedicated in-vehicle navigation/location system.” *Id.* at 12. Such an implementation, however, would remove features from the *Knockeart* invention and/or result in duplicative equipment.

Knockeart’s in-vehicle system is tightly integrated into the vehicle itself. *Knockeart* discloses that its in-vehicle system “is coupled to vehicle subsystems, such as the door locking subsystem, or the vehicle control subsystem.” *Knockeart* at [0381]. “This coupling can use standard vehicle data communication infrastructure found in many vehicles today, such as the SCP (the Standard Corporate Protocol) bus found in vehicles manufactured by the Ford Motor Company.” *Id.* Thus, *Knockeart*’s in-vehicle system is directly connected to a communication bus of the vehicle in which it resides. In turn, this arrangement allows, for example, the remote unlocking of the vehicle’s doors in the event the owner is locked out of the vehicle and the remote immobilization of the vehicle in the event the vehicle is stolen. *Id.* at [0382]-[0390]. To implement these features,

Knockeart requires the in-vehicle system to have the capability to establish a cellular connection over which data can be sent and received and a GPS receiver. *Id.*

Petitioner does not explain or even alleged that a cell phone from 2004 could implement either of these features by connecting to a vehicle's internal communication bus. Indeed, Patent Owner is not aware of how a state-of-the-art cell phone could implement these features today (without some cooperation of the vehicle's internal systems). Other obvious problems with implementing these features in a cell phone present themselves. If a vehicle is stolen and the cell phone is with the rightful owner, how could it possibly communicate with the vehicle to immobilize it? Petitioner does not address these fundamental issues in proposing to substitute cell phones in place of *Knockeart's* in-vehicle system.

In light of these facts, a POSITA would realize that implementing *Knockeart's* in-vehicle system as a cellular phone for the purpose of collecting probe vehicle traffic data would require one to strip out non-navigation features of *Knockeart's* in-vehicle system (*i.e.*, the remote door unlocking and vehicle immobilization systems) that cannot be performed on a cell phone. A POSITA would also realize that implementing just the navigation portion of *Knockeart's* in-vehicle system on a cell phone would only increase costs, as *Knockeart's* in-vehicle system would still have to have a cellular modem and transceiver to provide for cellular connectivity and a GPS receiver to implement the non-navigation features of *Knockeart's* in-vehicle

system. Such realizations would cause a POSITA to not integrate some or all of *Knockeart's* in-vehicle functionality in a cell phone as alleged by Petitioner.

Petitioner's second theory of why *Knockeart* and *Feldman* can be combined is more rational but still fails. Petitioner states "[a]lternatively or additionally [to the first theory discussed above], a POSITA would have been prompted to implement *Knockeart's* system to utilize *Feldman's* vehicular traffic data collected by tracking 'vehicle-carried' cellular telephones as one of the external traffic information sources expressly described in *Knockeart*." Petition at 9-10 (citing to *Knockeart's* external information system 130). *Knockeart's* external information system 130, however, is only disclosed as receiving traffic information "from a government run traffic monitoring authority, and from logging data obtained from probe vehicles" *Knockeart* at [0170] and [0317]. These types of information sources are materially different than some group of cell phones operating outside of *Knockeart's* own network. As such, a POSITA would not have found it obvious to incorporate *Feldman's* traffic data into *Knockeart's* external information system as alleged by Petitioner.

B. A POSITA Would Not Modify *Feldman's* Phones with *Knockeart's* "Permissions"

Petitioner would have one believe that a POSITA would combine *Knockeart's* in-vehicle system with *Feldman's* phones but would jettison the user location data privacy protection scheme described by *Feldman* for use with its phones in favor of

Knockeart's alleged privacy scheme designed for use with its in-vehicle system. In other words, Petitioner modifies *Knockeart's* in-vehicle system with *Feldman's* phones, but then turns around and modifies *Feldman's* phones with *Knockeart's* alleged privacy scheme. Such practices are textbook hindsight reconstruction.

A POSITA would not have modified *Feldman's* phones with *Knockeart's* ability to enable/disable its modes of data collection for several reasons. As an initial matter, *Feldman's* phones do not have such modes of data collection thus making implementation of *Knockeart's* enable/disable feature on *Feldman's* phones non-sensical. As discussed above, *Knockeart's* in-vehicle system has two modes of data collection, the first where link transit times are logged and transmitted to the server periodically, and the second where link transit times that deviate from expected transit times are logged and transmitted to the server as soon as possible. This is not at all like *Feldman's* system, where “[t]he tracking of the ‘moving’ phones is done by polling their locations in known time intervals.” *Feldman* at [0062]. *Feldman* doesn’t disclose concepts such as “links” and the time it takes to travel a link. Further, *Feldman's* phones are not logging link transit times and comparing actual link transit time to expected times in order to determine whether an exception exists. Instead, *Feldman's* server determines which phones in a network are moving and periodically queries their locations to develop traffic data. *Id.* at [0060-0063].

Given these stark differences, a POSITA would not have been at all motivated to graph *Knockeart's* ability to enable/disable certain modes of data collection onto *Feldman's* phones where such modes of data collection are wholly absent. Petitioner claims that such a motivation is driven by privacy concerns. Petition at 24. However, *Knockeart* does not ever mention protecting a user's privacy in discussing the ability to enable/disable its two modes of data collection. Instead, it is *Feldman* that addresses this issue head-on.

A POSITA would continue to use the privacy scheme described in *Feldman* to protect the user location data maintained by *Feldman's* phones. As discussed above, this scheme relies on anonymizing user data and is directed to protecting a user's location data. *See Feldman* at [0064-65] (stating “a main aspect of the present invention relates to techniques for protecting the privacy of individuals associated with, or hosting, the sources 62 (FIG. 2) of the mobile sensors or electronic devices, of the vehicular traffic data and information which are acquired, collected, or gathered, using techniques based on GPS and/or cellular telephone types of mobile wireless communications networks or systems.) As such, a POSITA would favor *Feldman's* approach for addressing privacy issues in cell phones because *Feldman* specifically describes a manner of protecting the privacy of user location data that is much more on point and actually works in the system described in *Feldman*.

C. *Knockeart* Fails to Suggest or Disclose a System Whereby One Can Selectively Enable or Disable Access to User Cell Phone Location Data.

Knockeart fails to disclose “enable[ing] or disabl[ing] access to user cellphone data.” Claim 1 (emphasis added). Petitioner’s arguments on this point center around *Knockeart*’s disclosure that “[t]he operator of the vehicle has the option of enabling or disabling either mode of data collection through the user interface of the in-vehicle system.” Petition at 23 and *Knockeart* at [0324]. Petitioner argues that “a POSITA would have recognized that a user interface that presents options for ‘enabling or disabling’ multiple modes of location data collection provides the claimed ‘list of authorizations’ *for selectively enabling or disabling access to user cellphone location data.*” Petition at 24 (emphasis added).

Although not explained in the Petition, the only entity “accessing” the data collected in the two data collection modes (*i.e.*, data corresponding to the claimed “cellphone location data”) is *Knockeart*’s server. *See generally Knockeart* [0316-0343] and Fig. 1 (reproduced above). Thus, when discussing how *Knockeart*’s “user interface that presents options for ‘enabling or disabling’ multiple modes of location data collection” corresponds to the claimed “selectively enabling or disabling access to user cellphone location data”, Petitioner can only be arguing that the entity whose access can be enabled/disabled is the server.

Petitioner's argument is completely belied by *Knockeart's* sentences in Paragraph 0324 - "[a]lso, the server system can enable (or request) either type of collection. For instance, the server system can enable more vehicles if it needs more data, and disable data collection in some vehicles if it is receiving more data than it needs." *Knockeart* at [0324]. In short, Petitioner is saying that a vehicle operator can enable/disable *access* of location data by the server when, in fact, *Knockeart* says exactly the opposite.

One could view these two sentences of *Knockeart* as contradictory and/or hard to reconcile. For example, one might question the utility of a user being able to enable/disable data collection if such actions can unilaterally be overridden by the server. But such apparent incongruous concepts are not, in fact, hard to reconcile. One can easily conceive of situations where the vehicle operator *preferentially* chooses not to continue to collect the transit times of various links, subject always to the server reenabling data collection.

Perhaps the vehicle operator is running short of minutes in her cell phone plan (a not unusual occurrence in 1998 – *Knockeart's* priority date) and doesn't want to continue to have her car dial *Knockeart's* server to report this data. *See Knockeart* [0323] (discussing sending the logged data to the server over a cellular telephone connection). Perhaps the vehicle operator is traveling and the sending of such data may cause the operator to incur enhanced roaming fees. Perhaps the vehicle operator

is running errands and making frequent stops and knows the data collected will not be representative of the average time it takes to travel a link or of actual traffic conditions. The list goes on. In such circumstances, the vehicle operator may prefer data not to be collected but *Knockeart* says that the server can enable such data collection, presumably if it needs it.

Knockeart does not disclose a system that prevents *access* by the server to location data under any reasonable meaning of the word “access.” A few examples make this point clear. A homeowner does not prevent a neighbor’s “access” to his home by locking the door if the homeowner knows the neighbor has a key. A parent does not prevent a child’s “access” to a gaming console by turning it off if the child can simply turn it back on. Likewise, in *Knockeart*, a vehicle operator does not prevent the server accessing location data by disabling collection when the server can simply reenable it.

For this very simple reason, *Knockeart* fails to disclose a system that allows one to selectively enable or disable access to user cell phone location data as required by Claim 1. Instead, *Knockeart* discloses the opposite – a system where the accessing entity – the server – can access user cell phone location data at will. As such, *Knockeart* fails to disclose/render obvious this element of Claim 1.

D. *Knockeart* Fails to Suggest or Disclose a List of Authorizations.

Knockeart fails to disclose a “list of authorizations” as set forth in the last element of Claim 1. This argument is tied to a proper construction of the phrase “each of the plurality of cell phones further has a user initiated permission set comprised of a list of authorizations that permit a user to selectively enable or disable access to user cellphone location data” discussed above in Section III. At most, *Knockeart* discloses a list of “data collection modes” (“[t]he operator of the vehicle has the option of enabling or disabling either mode of data collection . . .”) along with the ability to enable or disable them. *Knockeart* at [0324]. Petitioner seems to be in agreement with this assessment as it cites to the same sentence to support its invalidity allegations on this point. Petition at 29. However, enabling/disabling modes of data collection is not comparable with enabling/disabling certain entities’ access to cell phone location data.

As properly construed, the claimed “list of authorizations” is a list of authorizations by which the user can “selectively enable or disable” entities’ access to user cell phone location data. Since *Knockeart* cannot be mapped in such a fashion, Petitioner is forced to argue that “a POSITA would have recognized that a user interface that presents options for ‘enabling or disabling’ multiple modes of location data collection provides the claimed ‘list of authorizations.’” But such a list of modes of data collection is not at all tethered to the “access of user cellphone

location data.” As explained above, with reference to Fig. 54 of the ’028 Patent, the list of authorizations is a list of which entities can and cannot access the user cell phone location data. As shown in Fig. 54 and explained in the accompanying description of this Figure, this list of entities and associated authorizations is the mechanism which “permit[s] a user to selectively enable or disable access to user cellphone location data.” Claim 1. Since modes of data collection as described in *Knockeart* do not access user cell phone location data, they cannot satisfy the “list of authorizations” element in Claim 1.

Further, enabling/disabling modes of data collection is not comparable to the “selectively” aspect of “selectively enabling or disabling access.” Claim 1 states that the “list of authorizations [] permit[s] a user to *selectively* enable or disable access” As discussed in the paragraph above, Petitioner maps the “list of authorizations” claim language to *Knockeart*’s enabling/disabling of the two modes of data collection, stating it would be obvious to present the alternatives in a list format. Petition at 25. As discussed in Section IV, above (the technical description of *Knockeart*), however, the only substantive difference between the two modes of data collection in *Knockeart* is the frequency at which data is reported to *Knockeart*’s server – the first mode is for non-time sensitive reporting while the second mode is for time sensitive reporting. The same device, *Knockeart*’s server, is accessing *Knockeart*’s location data in both modes. Since there is only one device “accessing”

the location data in *Knockeart*, there can be no “selective” enablement/disablement of such access because in order to “permit a user to *selectively* enable or disable access”, the user would have to be able to select between two different entities.

VII. CONCLUSION

The Board should deny institution as to each asserted ground. Ground 1 is the only one that challenges the single independent claim of the '028 Patent. As shown above, this Ground fails. Thus Claim 1 and all of its dependent claims (i.e., the rest of the claims in the '028 Patent) are valid.

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CERTIFICATE OF COMPLIANCE WITH WORD COUNT

Pursuant to 37 C.F.R. § 42.24(d), I certify that this Response complies with the type-volume limits of 37 C.F.R. § 42.24(b)(1) because it contains 7,612 words, excluding the parts of this Patent Owner's Preliminary Response that are exempted by 37 C.F.R. § 42.24(a)(1), according to the word processing system used to prepare this Patent Owner's Preliminary Response.

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CERTIFICATE OF SERVICE

I hereby certify that on this 3rd day of September, 2023, a copy of Patent Owner's Preliminary Response has been served in its entirety via email on the following:

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