

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

UBER TECHNOLOGIES, INC. and UBER FREIGHT US LLC,
Petitioners

v.

CARMA TECHNOLOGY, LTD.,
Patent Owner

IPR2026-00308

Patent No. 11,017,668

**PETITION FOR *INTER PARTES* REVIEW
OF U.S. PATENT NO. 11,017,668**

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EX1007	Korean Patent No. 20060107894A to Jeon (“Jeon”) and Certified Translation of Jeon with Certification of Translation
EX1008	Joint P.R. 4-3 Statement (Dkt. Nos. 95, 95-1, 95-2) in <i>Carma Technology, Corp. v. Uber Technologies, Inc.</i> , Case No. 2:25-cv-00029 (E.D. Tex. Feb. 10, 2026)
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EX1035	U.S. Patent No. 10,520,325 to Lewinson (“Lewinson”)
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I. INTRODUCTION

Uber Technologies, Inc. and Uber Freight US LLC (“Petitioners”) request *inter partes* review of claims 1-20 (“the challenged claims”) of U.S. Patent No. 11,017,668 (the ’668 patent”) (EX1001), which, according to PTO records, is assigned to Carma Technology, Ltd. (“PO”).

II. MANDATORY NOTICES

Real Parties-in-Interest: Pursuant to 37 C.F.R. § 42.8(b)(1), Petitioners identify Uber Technologies, Inc., Uber Freight US LLC, and Uber Freight Holding Corporation as the real parties-in-interest.

Related Matters: The ’668 patent is asserted by PO against Petitioners in *Carma Technology, Corp. v. Uber Technologies, Inc.*, Case No. 2:25-cv-00029 (E.D. Tex.) (“Carma Litigation”). Uber was served with the complaint on March 20, 2025. Thus, this petition is timely under 35 U.S.C. § 315(b).

Petitioners are submitting petitions for *inter partes* review of U.S. Patent Nos. 7,840,427 (“the ’427 patent”), 11,164,456, 10,741,071, and 10,916,138, which are also asserted by PO in the Carma Litigation.

Counsel and Service Information: Lead counsel: Naveen Modi (Reg. No. 46,224). Backup counsel: (1) Joseph E. Palys (Reg. No. 46,508), (2) Phillip W. Citroën (Reg. No. 66,541), (3) Alexa Lowman (*pro hac vice* to be filed), and (4) Maksim Mints (Reg. No. 78,507).

Service information is Paul Hastings LLP, 2050 M St., N.W., Washington, DC 20036, Tel.: 202.551.1700, Fax: 202.551.1705, email: PH-Uber-Carma-IPR@paulhastings.com. Petitioners consent to electronic service.

III. PAYMENT OF FEES

The PTO is authorized to charge any fees due during this proceeding to Deposit Account No. 50-2613.

IV. GROUNDS FOR STANDING

Petitioners certify under 37 C.F.R. § 42.104(a) that the '668 patent is available for review and Petitioners are not barred or estopped from requesting review on the identified grounds.

V. PRECISE RELIEF REQUESTED AND GROUNDS RAISED

The challenged claims should be canceled as unpatentable based on the following grounds:

Ground 1: Claims 1, 2, 4-13, and 15-20 are unpatentable under pre-AIA 35 U.S.C. § 103 as being obvious over UK Patent Application No. GB2397683A to Olmi (“Olmi”) (EX1005) in view of European Patent No. 1251475A2 to Peer (“Peer”) (EX1006) and International Patent Publication No. WO 2005/022426 A1 to Poykko (“Poykko426”) (EX1011).

Ground 2: Claims 3 and 14 are unpatentable under pre-AIA 35 U.S.C. § 103 as being obvious over Olmi in view of Peer, Poykko426, and Korean Patent No. 20060107894A to Jeon (“Jeon”) (EX1007).

For purposes of this proceeding only, Petitioners assume that the earliest effective filing date of the ’668 patent is February 12, 2007, the filing date of U.S. Provisional Application No. 60/900,808, to which the ’668 patent claims priority, without conceding the ’668 patent is entitled to such date.

Olmi published on July 28, 2004, Peer published on October 23, 2002, and Poykko426 published on March 10, 2005, and thus each qualifies as prior art at least under pre-AIA 35 U.S.C. §§ 102(a) and (b).

Jeon issued from an application filed on May 11, 2005 and published on October 16, 2006, and thus qualifies as prior art at least under pre-AIA 35 U.S.C. § 102(a).

VI. LEVEL OF ORDINARY SKILL

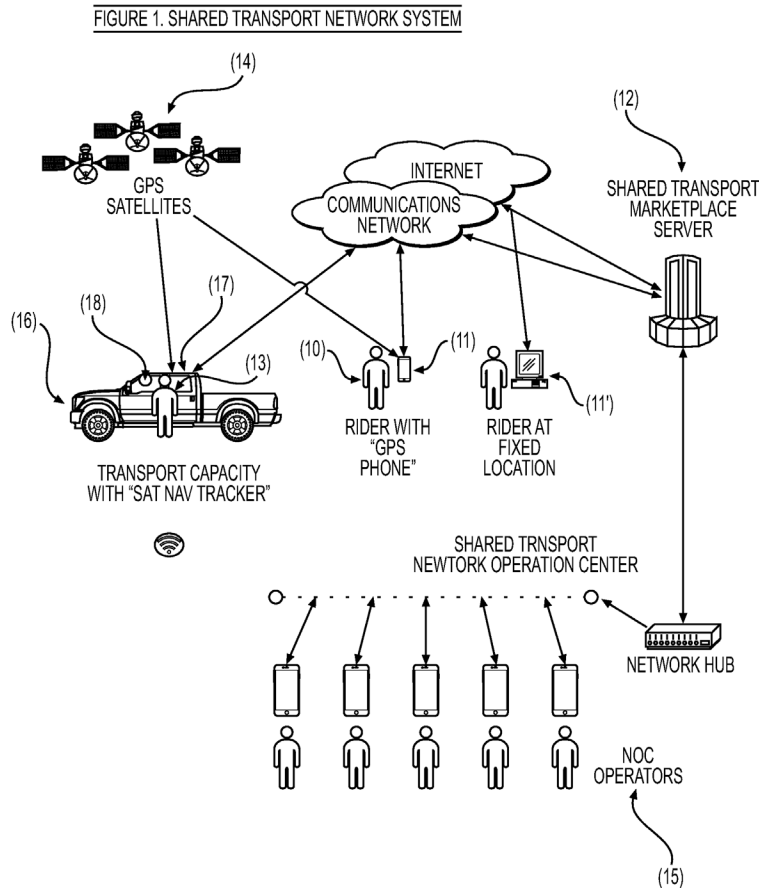
A person of ordinary skill in the art at the time of the alleged invention of the ’668 patent (“POSITA”) would have had at least a bachelor’s degree in computer science, computer engineering, software engineering, electrical engineering, or the equivalent and at least two years of experience in technologies relevant to or utilized

in transportation systems. (EX1002, ¶¶16-18.)¹ More education can substitute for practical experience and vice versa.

VII. OVERVIEW OF THE '668 PATENT

The '668 patent “relates to a ground transportation network” that, e.g., “match[es]” individuals with transport capacity of a supply and demand basis.” (EX1001, 1:23-26; EX1002, ¶¶25-29.) The '668 patent discusses its shared transport system in the context of Figure 1 (below), which purportedly “enabl[es] private transport vehicles to serve as an extension of the mass transit system” by matching potential riders with potential drivers. (*Id.*, 3:51-55; *see also id.*, 3:1-5:19, FIG. 1.)

¹ Petitioners submit the declaration of Dr. Ioannou (EX1002), an expert in the field of the '668 patent. (EX1002 ¶¶1-15; EX1003.)



(*Id.*, FIG. 1.) Consistent with Petitioners' constructions below, the specification describes a transport provider/driver defining a supply route along which to travel (independent of and before receiving any notice of an available rider) and the system matching transport users/riders (who have requested pick-up and drop-off locations along, or sufficiently close to, a declared supply route) to a pre-existing supply route. (*Id.*, FIGS. 6a, 14a; *id.*, 3:10-20, 3:33-44, 16:49-17:6, 22:30-33.)

Beyond many other conventional features (as demonstrated below in §IX), the '668 patent discusses features related to ensuring the trip is progressing as expected. (*Id.*, Abstract, 11:39-12:3.) For example, "to provide security..., certain behaviors

would prompt alert conditions, especially those related to security or safety.” (*Id.*, 12:14-17.) If a ride “is terminated before or at a different point than the established Destination Point, this information is logged and could further be used to generate, for example, automated phone calls to verify the intent of the Rider & Driver, including prompting the Rider or Driver for verification of pass codes...which would be established upon user registration.” (*Id.*, 12:17-25.) If a rider or driver is unable to verify the pass code, human intervention (e.g., from network operators or dispatched security personnel) is available. (*Id.*, 12:25-31.)

The claims of the ’668 patent were allowed (and subsequently issued) after minimal examination, during which the Office did not apply any prior art rejections. (EX1004, 15-17, 29-34, 52-59; EX1012, 16 (parent application’s reasons for allowance relied on by Office in examining ’668 patent application); EX1002, ¶30.)

As demonstrated below, these and other features recited in the challenged claims of the ’668 patent were known in the prior art before the alleged critical date of the ’668 patent. (*Infra* §IX; EX1010, EX1030-EX1035; EX1002, ¶¶19-24, 31.)

VIII. CLAIM CONSTRUCTION

The Board only construes the claims when necessary to resolve the controversy. *Toyota Motor Corp. v. Cellport Sys., Inc.*, IPR2015-00633, Paper No. 11 at 16 (Aug. 14, 2015). Petitioners believe that the following claim terms of the ’668 patent should be construed as indicated in the table below. These constructions

are consistent with Petitioners’ claim construction positions taken in the Carma Litigation. (See EX1008.) Petitioners also indicate below those claim terms that PO has proposed constructions for in the Carma Litigation. (*Id.*) To the extent Petitioners’ or PO’s proposed constructions are found not to apply, Petitioners also explain in §IX how the challenged claims are disclosed and/or rendered obvious by the asserted prior art if no express constructions are applied. (EX1002, ¶¶32-33.)

’668 Patent Term	Construction
“shared transport system” (all claims)	<u>Petitioners’ Construction</u> : “A server system that matches transport users with transport providers traveling an existing route defined before demand for transport and independently of a transport user’s door-to-door trip.”
“pick-up location” (all claims)	<u>Petitioners’ Construction</u> : “A node along an existing route defined before demand for transport and independently of a transport user’s door-to-door trip.”
“transport provider” (all claims)	<u>Petitioners’ Construction</u> : “A driver offering transport along an existing route defined before

'668 Patent Term	Construction
	demand for transport and independently of a transport user's door-to-door trip.”
“anomalous condition” (all claims)	<u>PO's Construction</u> : “when a ride results in a journey which is terminated before or at a different point than the established destination point”

A. Shared Transport System

A POSITA would have understood that a “shared transport system,”² as used in the '668 Patent, refers to “a server system that matches transport users with transport providers traveling an existing route defined before demand for transport and independently of a transport user's door-to-door trip.”

The first portion of the proposed construction (that the shared transport system is a server system that matches transport users with transport providers) derives directly from the specification. The specification states that “the invention provides a **network system** that matches the supply and demand of transportation services” and defines “the network system” as the “Shared Transport System.” (EX1001,

² Claim language is underlined throughout this Petition.

3:14-20, 3:33-44.) (“The network system (‘Shared Transport System’)...”). The specification further confirms that the supply of transportation services comes from providers within the shared transport system. (*Id.*, 3:10-13.) (“It is another object of the invention to provide riders and transport providers with information services and content that adequately enable the use and expansion of such a system.”).

The remainder of the construction (that the match is with transport providers traveling an existing route defined before demand for transport and independently of a transport user’s door-to-door trip) is consistent with the specification and express admissions made by PO during prosecution of the ’427 patent, which is an indirect parent of the ’668 patent and shares the same specification as the ’668 patent. For example, Figure 6a shows a flowchart of “the experiences of a Driver in using the network system.” (*Id.*, 22:30-33.) In Figure 6a, a Driver defines a “Supply Route” along which to travel independent of and before receiving any notice of an available rider. An example of how the system will match riders to these pre-existing supply routes is shown in Figure 14a, which shows a transport user 1401 who wants to go from departure point 1406 to arrival location 1409. (*Id.*, 16:49-51.) Two transport capacity (1402 and 1403, *i.e.*, vehicles) both pass through 1406—the requested pick-up location of transport user 1401—along their “declar[ed] . . . routes.” (*Id.*, 16:51-53.) But only one of those vehicles—1403—also has registered a route going through 1409, the requested arrival location of transport user 1401.

(*Id.*, 16:53-59.) “All other considerations being equal,” the matching engine would match transport user 1401 to vehicle 1403, which is the vehicle whose declared route passes through both the pick-up and drop off locations. (*Id.*) Thus, the transport user 1401 would travel along the route vehicle 1403 had defined before the transport user demanded a ride, which route vehicle 1403 had defined independently of the user’s door-to-door trip.

Further confirming this interpretation, the specification explains what would happen if transport capacity 1403 refused to match with transport user 1401: the system could determine that transport capacity 1402 has a route that passes through the user’s pick-up location 1406 and also goes through a location (1408), which is near the requested drop-off location (1409). (*Id.*, FIG. 14a, 17:1-6.) Transport user 1401 would be alerted of this option that gets them near their ultimate destination and could agree to be matched with transport capacity 1402. (*Id.*, 17:1-6.) In this case, transport user 1401 would walk from 1408 to 1409, without redefining transport capacity 1402’s route, which, again, was defined independently of the user’s door-to-door trip.

This understanding is consistent with and further supported by statements made by patent owner during prosecution of the parent ’427 patent. See One-E-Way, Inc. v. Int’l Trade Comm’n, 859 F.3d 1059, 1064 n.3 (Fed. Cir. 2017) (“[T]he meaning of claim terms in one patent can be informed by statements made during

prosecution of other patents in the same family.”); *Comput. Docking Station Corp. v. Dell, Inc.*, 519 F.3d 1366, 1374 (Fed. Cir. 2008) (holding that a patentee can disavow claim scope “by clearly characterizing the invention in a way to try to overcome rejections based on prior art”). Specifically, to overcome a rejection over prior art reference Lecouturier, Applicant distinguished Lecouturier as describing a “‘door to door’ approach [that] requires segment by segment direction to a driver, who *may have to divert from his natural route* to reach the pick-up or drop-off point.” (EX1015, 53-54.) Applicant explained that, by contrast, the alleged invention “provided specific pick-up and drop-off locations [nodes] that do not require a driver to divert.” (*Id.*) During an examiner interview conducted in the ’427 prosecution, the “Applicant asserted that the ‘abstracting’ step was different than the prior art in that an existing route is checked versus the plurality of pickup/dropoff nodes.” (EX1015, 23.) In that interview, the examiner agreed with the Applicant and characterized the “transport vehicle journey” as “predetermined.” (*Id.*) And in the ’427 examiner’s “statement of reasons for allowance,” the examiner stated that “Lecouturier fails to disclose abstracting a predetermined route by

calculating places where the route intersects the nodes and representing the journey as a set of nodes.”³ (*Id.*, 30.)

This requirement of a predetermined or existing route is further confirmed as applicable to the scope of any claimed system arising out of the shared specification of the '427 and '668 patents. Applicant described *dynamic systems that tracked and matched drivers and riders based on their live locations as “computationally unsolvable,”* and prohibitively expensive because cars would have to communicate their “positional information constantly.” (EX1015, 87-88.). See *Techtronic Indus. Co. v. Int’l Trade Comm’n*, 944 F.3d 901, 909 (Fed. Cir. 2019) (statements disavowing embodiments recognized as “infeasible” or “impossible”); *AstraZeneca AB v. Mylan Pharms. Inc.*, 19 F.4th 1325, 1335 (Fed. Cir. 2021) (statements in prosecution history that “capture the scope of the actual invention” inform claim construction).

³ The '427 patent claims themselves do not recite a “shared transport system.” For that patent, the applicant tied this fundamental statement of the scope of the invention to the “predetermined transport vehicle journey” claim limitation. (EX1015, 23.) Thereafter, when prosecuting subsequent applications, including the '668 patent, the applicant added the “shared transport system” limitation to capture this concept. (*Compare, e.g., '427 patent at claim 1, with '668 patent at claim 1.*)

Applicant's statements are consistent with the specification: the transport provider follows his existing route without diverting. Thus, a POSITA would understand that the patent's shared transport system would match a transport provider with a transport request that would allow the transport provider to stay along his existing route that he had defined independent of the transport user's pickup and drop-off locations.

B. Pick-Up Location

A POSITA would understand that a "pick-up location," as used in the '668 patent, refers to "a node along an existing route defined before demand for transport and independently of a transport user's door-to-door trip."

The specification expressly equates "nodes" and "pick-up locations," stating: "the System maintains a matrix of journey time and cost estimates for the nodes (pick-up and drop-off points). Next available capacity, and estimated travel time between each of these nodes is maintained." (EX1001, 14:40-44.) The specification repeats this concept and further confirms that nodes are established prior to any particular trip. (*Id.*, 15:1-7 ("[F]or the purposes of establishing a shared transport network, it is useful to establish a network of pick-up and drop-off points (nodes), so that Riders and Drivers can be guided to places that are safe and convenient and comfortable for both the Riders and Drivers.")).) During prosecution of the '427 patent, Applicant gave a substantively identical definition of a pick-up location as a

node. (EX1015, 53-54.) (describing the alleged invention as “providing specific pick-up and drop-off locations [nodes] that do not require a driver to divert”) (brackets in original).

In short, because the patent’s alleged invention does not require a transport provider to divert from his natural route to reach pick-up or drop-off locations, a POSITA would understand that a pick-up location could only be a node along the transport provider’s existing, natural route that is defined before demand for transport and independently of a transport user’s door-to-door trip.

C. Transport Provider

A POSITA would understand that a “transport provider,” as used in the ’668 patent, refers to “a driver offering transport along an existing route defined before demand for transport and independently of a transport user’s door-to-door trip.”

This construction follows from the same intrinsic evidence cited above, including the prosecution history and specification. In particular, a POSITA would understand that the claimed system would not direct a transport provider to divert from his “natural route” to pick up or drop off a transport user according to his door-to-door trip, as Lecouturier required. (EX1015, 53-54.) Instead, according to the patent, the shared transport system would only match a transport provider with pick-up and drop-off locations “that would not require a driver to divert.” (*Id.*) The specification gives detailed disclosures of this, describing how a transport provider

“declare[s] . . . their Supply Route” as going through a series of defined nodes (e.g., vehicle 1402 travels through nodes 1405, 1406, 1407, and 1408), and matches occur based on a transport user requesting pick-up and drop-off locations along, or sufficiently close to, a declared supply route. (EX1001, FIG. 14a, 16:49-17:6.) Accordingly, a POSITA would recognize that a transport provider would only offer transport along his existing route defined before any demand for transport.

D. Anomalous Condition

The term “anomalous condition” does not require construction and the plain and ordinary meaning should apply. PO disagrees, arguing that this term should be construed to mean “when a ride results in a journey which is terminated before or at a different point than the established destination point.” PO’s construction should be rejected because, for example, claims 4 and 15 of the ’668 patent expressly provide that an anomalous condition may be determined when “the transport is off-route,” without any reference to where the journey is terminated. PO’s construction is therefore incorrect, as it contradicts the plain claim language by limiting anomalous conditions to situations “when a ride results in a journey which is terminated before or at a different point than the established destination point.” *Wright Med. Tech., Inc. v. Osteonics Corp.*, 122 F.3d 1440, 1445 (Fed. Cir. 1997).

IX. DETAILED EXPLANATION OF GROUNDS

Grounds 1 and 2 rely on Olmi as the primary reference. Although Olmi was not considered during prosecution of the '668 patent, it was a principal reference in an earlier European Patent Office's examination of counterpart application EP08725447A, where the EPO relied on Olmi to reject the claims. (EX1036, 217-22, 251-58.) The applicant ultimately abandoned that EP application without overcoming Olmi. (*Id.*, 263-67.) As demonstrated below, the challenged claims are unpatentable in view of Olmi together with the additional prior art relied on in Grounds 1 and 2.

A. Ground 1: Olmi in view of Peer and Poykko⁴ Renders Claims 1, 2, 4-13, and 15-20 Obvious

1. Claim 1⁴

i) [1.pre]

To the extent the preamble of claim 1 is limiting, Olmi in view of Peer discloses/suggests the limitations therein.⁵ (EX1002, ¶¶49-74; *see also id.*, ¶¶34-44.)

⁴ See Appendix A for claim language. (§XI.)

⁵ Olmi discloses two configurations—taxibus and carpooling—and explains that the invention may run either configuration separately or both simultaneously. To the extent any features relied on in Ground 1 are deemed attributable solely to the

First, Olmi discloses “a shared transport system.” (*Id.*, ¶51.) Olmi teaches a transportation sharing process where a central computer system analyzes “submitted itinerary requirements that it receives, and then intelligently groups travellers with compatible itineraries onto the same...transit vehicle” (*id.*, Abstract) to address problems with inefficient use of transportation services in existing transportation networks (*id.*, 2-8.)⁶

taxibus configuration, a POSITA would have found it obvious to incorporate those features into the carpooling configuration because both configurations address similar problems using similar hardware and system architectures. Olmi’s preferred embodiment likewise integrates features of both configurations, confirming their compatibility and interchangeability. A POSITA would have recognized that incorporating taxibus features into the carpooling configuration involved only routine engineering choices and would predictably yield the same functional benefits described in Olmi. Accordingly, any taxibus-specific features would have been obvious to implement in the carpooling configuration. (EX1005, 8, 30, 40, 66, 70, 78; EX1002, ¶49.)

⁶ Citations to EX1005 are to the underlying document page number(s) or section number(s).

Olmi describes a carpooling configuration that matches prospective passengers with carpool drivers having compatible itineraries involving fixed journeys. (*Id.*, 8; EX1002, ¶52.) Olmi explains that both carpool drivers with personal fixed itineraries and passengers are considered travellers, i.e., a person with a journey itinerary. (EX1005, 11; EX1002, ¶53.) An itinerary is a data structure that specifies a travel plan, e.g., embarkation and disembarkation points. (EX1005, 11-12, 32-35.) A vehicle can have a vehicle itinerary, which specifies the vehicle's travel plan and comprises a "set of prescribed geographic points or addresses to which the vehicle must navigate in a prescribed order" and may include a "specification of the road route that will enable the vehicle to reach the said geographic points or addresses." (*Id.*, 11-12; EX1002, ¶54.) As discussed for limitation [1.a], both drivers and passengers submit journey requests defining their predetermined personal itineraries to the central computer system. (EX1005, 12, 15, 18, 32; §IX.A.1.i; EX1002, ¶55.) As further discussed for limitation [1.b], a carpool driver's intended personal itinerary forms part of the itinerary commitments of the driver's vehicle. (EX1005, 35; §IX.A.1.ii.) Olmi also describes intelligent grouping processes that match vehicles/drivers having a predetermined vehicle journey with a passenger having a compatible journey itinerary, and facilitating the transportation of the passenger along the vehicle's journey route. (EX1005, 15-20, 21-27, 35-39; EX1002, ¶56.)

Olmi's Figure 4 (below) uses a “central controlling computer system 15 [that] has, by means of the data transmission system 16, a two-way communications connection with the communicator devices 17 and 18 of the prospective travellers 19, and...with the communicator devices 20 of the transit vehicles 21.” (EX1005, 29.)

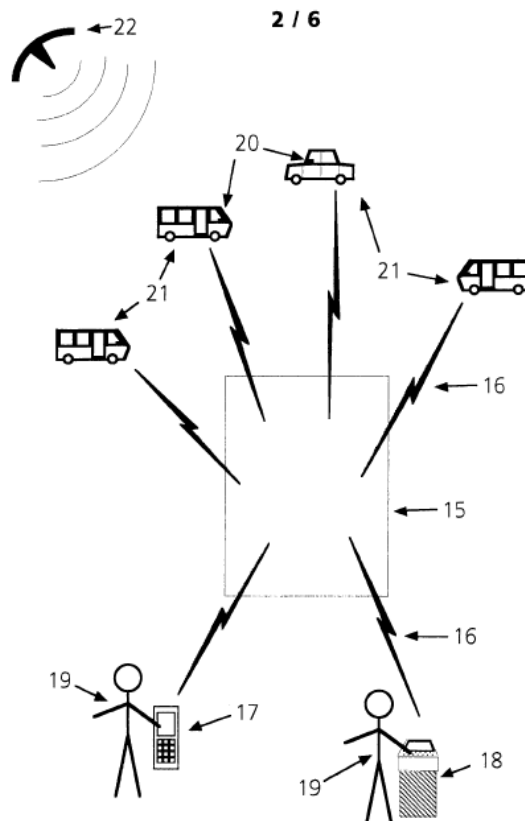


Figure 4

(*Id.*, FIG. 4.) The “single central controlling computer system 15 orchestrates all transit vehicles 21 and travellers 19.” (*Id.*, 31.) Each passenger and driver has a “communicator device,” such as a cellular phone, allowing them to “to send and/or

receive data over the data transmission system (typically to the controlling computer system).” (*Id.*, 14; EX1002, ¶57.)

Olmi’s central computer system is a “data-processing system” that may “compris[e] one or more mainframe computer data-processing installations, or...a set of distributed...computer processors.” (EX1005, 13.) “A data transmission system 16 comprising land lines, cellular telephone networks, and Internet transmission is used to provide a two-way data exchange between this centralized controlling computer system 15 and the communicator devices 17 and 20 (of the travellers 19 and transit vehicles 21 respectively).” (*Id.*, 31.) The transmitted data consists of “journey requests detailing the itinerary requirements of travellers, the controlling computer system’s responses to these journey requests sent back to travellers, and other categories of information.” (*Id.*, 30.) Olmi’s transportation sharing features (e.g., for matching drivers and passengers) are enabled using an “electronic positioning system...such as the American GPS..., the broadcast positioning signal of which is received by GPS receivers contained in the vehicle communicator devices (and optionally in passenger communicator devices).” (*Id.*, 31.) Olmi’s Figure 4 system is “capable of running the invention’s two main transport modes,” including the carpooling mode. (*Id.*; EX1002, ¶58.)

In addition to enabling carpool transport via the central computer system and data transmission system described above, Olmi’s “invention can also work with

existing public transport such as buses, trains or trams, if they are fitted with communicator devices and computer processors.” (EX1005, 70). “When a prospective passenger broadcasts his journey request (over the data transmission system), fixed-route transport vehicles in the vicinity of the passenger will receive his broadcast journey request, and their computer processors will calculate whether the passenger’s journey request is compatible with the itinerary of the transport vehicle.” (*Id.*) Thus, rather than match with a carpool driver with a fixed personal itinerary, a passenger may alternatively match with a public transport vehicle driver operating a fixed route vehicle itinerary. (*Id.*; EX1002, ¶59.)

Accordingly, Olmi discloses a method of sharing transportation (e.g., carpooling or public transport), where a central computer system (“shared transport system”) communicates with passenger and driver (vehicle) devices to arrange rides between passengers and drivers. (EX1002, ¶60.)

Olmi’s system constitutes a “shared transport system” under Petitioners’ proposed construction because, in addition to that discussed above, Olmi discloses:

- “A server system”: A “single central controlling computer system” (which may be distributed processors) is connected via a data transmission system. (EX1005, 13, 29-31.)
- “that matches transport users with transport providers”: The controlling computer system “scans”/processes journey requests and

selects transit vehicles/drivers to convey travelers. (*Id.*, Abstract; 15-18; 35-38.)

- “traveling an existing route”: In the carpool configuration, drivers submit their intended itinerary/vehicle itinerary, and (alternatively) fixed-route public transport vehicles have fixed vehicle itineraries. (*Id.*, 8, 11-12, 35, 70.)
- “defined before demand for transport”: The driver/vehicle itinerary information is submitted/stored in the system databases prior to matching and dispatch for a particular passenger request. (*Id.*, 32-36.)
- “independently of a transport user’s door-to-door trip”: The provider vehicle itinerary exists as provider-submitted itinerary commitments (or fixed vehicle itinerary) and is evaluated for compatibility with passenger requests rather than being created solely from the passenger’s request. (*Id.*, 11-12, 35-36, 70.)

(*See* §VIII; *see also* §IX.A.1.iii (Petitioners’ construction of “transport provider”); EX1002, ¶61.)⁷

⁷ In the Carma Litigation, PO disagrees with Petitioners’ proposed construction of the claimed “shared transport system.” (EX1008, 9, 13.) However, Olmi (including as modified herein) discloses a “shared transport system” under any reasonable

Second, Olmi discloses a “method for managing anomalous conditions” by managing security incidents/conditions, such as deviations from the intended route. (EX1002, ¶62.) Olmi discloses security measures by which “the controlling computer system could monitor car pool journeys in real time as they progress to their destinations.” (EX1005, 83.) “Any inexplicable deviation from the intended passenger destination will flag an alert to a human operator at the control centre,” and “[t]he operator might then phone the driver or passenger to find out why there was a deviation from the intended route, and could contact the police if any suspicious circumstances were encountered.” (*Id.*) To determine deviations from the intended route, “the location of the passenger and driver will be known through the incoming electronic positioning data.” (*Id.*)

While Olmi’s central computer system (“shared transport system”) monitors/flags unintended route deviations, it does not explicitly disclose that the entire process for managing these alerts is computer-implemented. (EX1002, ¶63.) As discussed above, a human operator confirms whether an unintended route deviation involves suspicious circumstances and whether police should be contacted. (EX1005, 83.) However, while Olmi does not explicitly disclose a “computer-

construction of the term, for the same reasons explained in this ground. (EX1002, ¶61; §IX.A.1.iii (“transport provider”).)

implemented method for managing anomalous conditions in a shared transport system,” a POSITA would have found it obvious to implement such a feature in the Olmi system/method in view of Peer. (EX1002, ¶63.)

Like Olmi, Peer relates to a method of arranging and monitoring rides between potential passengers and drivers using a central computer system. (*Id.*, ¶64.) Peer discloses “a method...using a computer which communicates with the person wishing to travel and/or the party wishing to transport.” (EX1006, Abstract.)⁸ Peer’s “method...can be used to arrange, initiate, implement, and/or settle a rideshare.” (*Id.*, ¶[0010].) In particular, Peer explains that rides are arranged, initiated, and implemented using a central computer (“shared transport system”) that communicates with rider and vehicle/driver/transportation provider devices, and performs processes including receiving location information for the rider and transport provider and using the location information to arrange and monitor a trip. (EX1006, Abstract, ¶[0007], [0018], [0020], [0023], [0041], [0048].) Peer also discloses that the central computer (or ridesharing center) (“shared transport system”) uses location data obtained by electronic localization methods (e.g., GPS) to track users. (*Id.*, ¶¶[0007], [0008].) Peer discloses that both the prospective rider and transport provider have a mobile transmitter device that tracks location.

⁸ Citations to EX1006 are to the certified translation of Peer.

(EX1002, ¶65.) For example, a prospective rider may carry a mobile phone/device and a transport provider may use a mobile device either containing a satellite navigation system or coupled to the satellite navigation system of the transport provider's vehicle. (EX1006, ¶¶[0008], [0009], [0043].) Thus, Peer is similar to Olmi, which as discussed above, also discloses a transportation system for arranging rides between drivers and passengers by implementing a central computer system that enables communication between mobile devices of a rider and driver, and accompanying localization techniques for monitoring rides using the location of the rider/driver mobile transmitter devices. (EX1002, ¶66.) A POSITA would have therefore had good reason to consider the teachings of Peer when implementing the Olmi system/method. (*Id.*)

Peer discloses a “computer-implemented method for managing anomalous conditions in a shared transport system.” (*Id.*, ¶67.) Peer's central computer monitors the rider and transport provider to detect and respond to unusual/noteworthy events (“managing anomalous conditions in a shared transport system”). For example, the “central computer monitors the position of the party wishing to transport and/or the person wishing to travel and records when a noteworthy event occurs that indicates that the trip is not going according to the wishes of the party wishing to transport and/or the person wishing to travel.” (EX1006, ¶[0033].) For example, these unusual/noteworthy events (“anomalous

conditions”) may include a “deviation from the trip route” (*id.*, ¶[0036]) or “the position or operation of the transmitter chang[ing] in an unusual way” (*id.*, ¶[0037]). Peer discloses the central computer system managing these unusual/noteworthy events (“managing anomalous conditions”) by “recording of the noteworthy event” (*id.*, ¶[0034]) and subsequently “contact[ing]...the passenger or the driver” to determine “whether or not a dangerous situation exists” (*id.*, ¶[0048]).

Peer discloses that the recording of a noteworthy event (“anomalous condition”) is part of a “computer-implemented method.” (EX1002, ¶68.) The central computer determines whether to record a noteworthy event by calculating “specific parameters of the trip” and “compar[ing]...in each case whether the value of these parameters match specific target values and/or whether these parameters correspond to specific criteria specified in advance, which indicate a noteworthy event.” (EX1006, ¶[0034].) For example, parameters may include “[t]he position of the monitored person, where the corresponding target value may result from, e.g., a specified trip route,” “[t]he speed at which the monitored person is moving, where a target range may be a speed, for instance, which matches that of a vehicle,” or “[t]he status of a transmitter that is used to localize the traveler.” (*Id.*) In other words, the central computer uses location data obtained by electronic localization methods to track users and determine whether a noteworthy event (“anomalous

condition”) has occurred, and thus the recording of the anomalous condition is computer-implemented. (EX1002, ¶68.)

Peer also discloses that the process by which the central computer contacts a passenger or driver to determine whether or not a dangerous situation exists is also computer-implemented. (*Id.*, ¶69.) If a noteworthy event is recorded, the ride-sharing agency’s central computer then “make[s] contact with the passenger or the driver...possibly by a message on the pager or using an obvious step such as a checkup call via a mobile telephone.” (EX1006, ¶[0048].) The passenger/driver can use “prearranged passwords or prearranged messages” to respond, e.g., by “repl[ying] to an inquiry or to the password request with a sentence or a word that was agreed upon in advance as a signal for a dangerous situation.” (*Id.*) This communication between the central computer and a passenger/driver, even when performed by mobile telephone, is computer-implemented, because the central computer is equipped to process both speech (using speech recognition) and emails/text messages. (*Id.*, ¶[0041].) For example, if “information is transmitted to a central computer by said person orally using a mobile telephone,” the central “computer has a speech recognition system that converts the data corresponding to acoustic signals received via the telephone connection into corresponding text data or other data that can be directly processed by the computer.” (*Id.*)

Accordingly, Peer discloses “[a] computer-implemented method for managing anomalous conditions in a shared transport system.” (EX1002, ¶70.)

Peer discloses this limitation under PO’s proposed construction of “anomalous condition,” i.e., “when a ride results in a journey which is terminated before or at a different point than the established destination point.”⁹ As discussed for claim 5, Peer discloses determining an anomalous condition has occurred by determining the transport journey has prematurely terminated before reaching the intended destination. (§IX.A.4; EX1002, ¶71.) As discussed for claim 8, Peer discloses determining an anomalous condition has occurred by determining the trip has terminated at a location different from the intended destination. (§IX.A.7.) Thus, Peer discloses that an anomalous condition may occur under PO’s construction. (§VIII; EX1002, ¶72.)

A POSITA would have good reason, and found it obvious, to include features similar to those disclosed by Peer when implementing the Olmi

⁹ As discussed in Section VIII, Petitioners disagrees with PO’s proposed construction of “anomalous condition.” (EX1008, 9, 15; §VIII.D.) Nevertheless, Peer (including as incorporated in the Olmi-Peer combination) discloses an “anomalous condition” under PO’s construction and any reasonable construction of the term, for the same reasons explained in this ground. (EX1002, ¶72.)

system/method to provide a method for managing anomalous conditions that allows for more robust monitoring and reduced need for human operators. (EX1002, ¶73.)

As discussed above, Olmi discloses a method for monitoring trip progress and any inexplicable deviations, but discloses intervention from a human operator to determine whether anomalous conditions need police intervention. (EX1005, 83.)

A POSITA would have therefore found it beneficial to incorporate Peer's anomalous condition monitoring method, which would have reduced the need for human assistance, as discussed above. (*Id.*) A POSITA would have also understood that Peer provides a more robust monitoring system that can detect more types of anomalous conditions, including those based on assessments of mobile device transmitter position, speed, and status, as discussed above, and thus would have found it beneficial to include such a monitoring system in the Olmi system/method to improve security. (*Id.*)

A POSITA would have had a reasonable expectation of success in implementing such features based on the teachings of Olmi and Peer. (*Id.*, ¶74.) As discussed, both references are in the same field of art. (*Id.*) Moreover, as discussed above, Olmi discloses security methods of monitoring trips to determine if unusual deviations from the trip route have occurred (EX1005, 83), and thus a POSITA would have understood that implementing the Olmi-Peer combined features would have involved modifying the Olmi system/method in a manner that Olmi suggests is

feasible. (EX1002, ¶74.) Such a modification would have involved a combination of known technologies (e.g., known shared transport systems in which locations of rider/driver mobile devices are tracked throughout a journey (Olmi)) according to known techniques (e.g., known computer-implemented methods of managing anomalous conditions in shared transport systems by monitoring locations of rider/driver mobile devices throughout a journey (Peer)) to yield the predictable result of Olmi's system/method being configured to incorporate a computer-implemented method for managing anomalous conditions in a shared transport system, consistent with features contemplated by Olmi and Peer. (*Id.*) *KSR Int'l. Co. v. Teleflex Inc.*, 550 U.S. 398, 416 (2007).

ii) [1.a]

The Olmi-Peer combination discloses/suggests this limitation. (EX1002, ¶¶75-79.) Olmi discloses that the controlling computer system receives ("receiving, by the shared transport system") a journey request ("a transport request") from a potential passenger's mobile communicator device ("from a transport user device of a transport user"). (EX1005, 15, 18, 32.) Olmi explains that a "journey request is defined as a data structure or a computer data format which includes a specification of a traveller or passenger itinerary." (*Id.*, 12.)

As shown in Figure 8 below, the journey request includes data fields such as the "itinerary of the traveller," which "include[s] the current location or desired pick-

up point for the traveller” and the destination point (“the transport request including a pick-up location and a destination”). (*Id.*, 32; *see also id.*, 12, 16, 29, 43.) Olmi explains that “preferably this invention will operate using pre-defined passenger pick-up (and optionally set down) points, each with a unique pick-up point reference code, in order to eliminate passenger pick-up point ambiguity.” (*Id.*, 17.)

<u>Traveller Journey Request</u>	
From:	263 Kensington High Street
To:	116 Upper Street N1 1AE
Transit Vehicle:	Taxibus or Car Pool
Passengers:	1
Departure Time:	Immediate
Prioritise:	Speed of Response

(*Id.*, FIG. 8 (excerpted/annotated); EX1002, ¶76.)

Thus, Olmi discloses “receiving, by the shared transport system, a transport request from a transport user device of a transport user, the transport request including a pick-up location and a destination.” (EX1002, ¶77.)

Olmi discloses that a predefined passenger pick-up point included in a passenger’s journey request is a “pick-up location” under Petitioners’ proposed construction, i.e., “a node along an existing route defined before demand for

transport and independently of a transport user's door-to-door trip."¹⁰ (§VIII; EX1002, ¶78.) As discussed above, a passenger's journey request includes the passenger's itinerary, including the passenger's desired pick-up point. (EX1005, 32.) Olmi discloses that "using the terminology of graph theory, most traveller or passenger itineraries can be encoded as a directed graph whose vertices are the embarkation and disembarkation points of the itinerary, and whose directed edges indicate the direction of travel." (*Id.*, 11.) A POSITA would have understood that each of these vertices, including the pick-up point, is a "node" along a route. (EX1002, ¶78.) *Moreover, this pick-up/embarkation point may be along a carpool or public transport driver's predetermined/fixed route.* (*Id.*) For example, Olmi explains that "travellers [passengers or carpool drivers] that have identical pick-up or drop-off points" can be "plac[ed]...on the same transit vehicle." (EX1005, 74.) Thus, in the carpool context, a potential passenger's pick-up point may be a node along a predetermined route of a carpool driver. (EX1002, ¶78.) Similarly, in the

¹⁰ In the Carma Litigation, PO disagrees with Petitioners' proposed construction of the claimed "pick-up location." (EX1008, 9, 13-14.) However, Olmi (including as modified herein) discloses a "pick-up location" where no construction is required and under any reasonable interpretation of the term, for the same reasons explained in this ground. (EX1002, ¶79; §IX.A.1.)

public transport context, a passenger's pick-up point may be an "embarkation point such as a bus stop" along the public transport fixed route. (EX1005, 70.) As described for limitation [1.pre], each of these predetermined/fixed routes is "an existing route defined before demand for transport and independently of a transport user's door-to-door trip." (§IX.A.1.i; EX1002, ¶78.) Thus, for similar reasons (and those discussed above), the Olmi-Peer combination also discloses/suggests this limitation under Petitioners' proposed construction. (EX1002, ¶79.)

iii) [1.b]

Olmi in view of Peer and Poykko426 discloses/suggests this limitation. (EX1002, ¶¶80-91; *see also id.*, ¶45.)

As discussed for limitation [1.a], a potential passenger uses their mobile communicator device to submit a journey request ("transport request"), i.e., a data structure indicating passenger's pick-up location and destination, to the controlling computer system. (§IX.A.1.ii; EX1002, ¶81.) "The data in each such incoming journey request is stored as a journey request record in the journey requests database" of the controlling computer system. (EX1005, 32.) "[T]he controlling computer system also maintains a transit vehicle current itineraries database," which "contains a data record,...call[ed] the transit vehicle record, for each currently operational transit vehicle," i.e., "a vehicle that is currently conveying travellers, or a vehicle that is currently empty but is ready to convey travellers." (*Id.*, 34.) "The

format of the transit vehicle record includes” data fields such as “[t]he current geographic position of the transit vehicle” and “[t]he current vehicle itinerary of the transit vehicle.” (*Id.*) “When a driver of a car pool vehicle wants to make himself available for car pooling, he will use the communicator device in his vehicle to submit his car pool intended itinerary specification, via the data transmission system 16, to the controlling computer system 15, and these details are stored in the transit vehicle current itineraries database” and also “entered in the journey request database as a journey request record, with a relational link set up from this transit vehicle record to this journey request record...because [the carpool driver] is also a traveller, and his personal itinerary forms part of the itinerary commitments of his vehicle.” (*Id.*, 35; *see also id.*, 15, 32.) This “vehicle itinerary will comprise a set of prescribed geographic points or addresses to which the vehicle must navigate in a prescribed order.” (*Id.*, 11-12; *see also id.*, 16.)

Olmi’s controlling computer system also includes an “intelligent grouping module,” a data-processing module used to intelligently group passengers with drivers in transit vehicles (EX1005, 13-14) using criteria such as the “transit vehicle [being] within the vicinity of the traveller’s current location or embarkation pick-up point as specified in the journey request record,” the “transit vehicle [having] a sufficient quantity of available passenger places for the number of travellers

specified in his journey request,” and the ”transit vehicle is of the type specified in this journey request” (*id.*, 35-36, 43, 70). (EX1002, ¶82.)

When one or more suitable transit vehicles are identified, the central computer system sends details of the transit vehicle(s) to the passenger’s communicator device. (EX1005, 37-38, 43.) “The passenger then simply selects any vehicle from the list in order to proceed with the car pool trip” and then the controlling computer system identifies the selected vehicle’s in-vehicle communicator device (“the transport provider device”) and transmits the request to that device. (*Id.*, 43; *see also id.*, 37-38.) Next, “[t]he driver can accept this journey by pressing the appropriate key or button on his communicator device.” (*Id.*, 43; EX1002, ¶83.)

Thus, Olmi discloses that the driver is a “transport provider” under Petitioners’ proposed construction, i.e., “a driver offering transport along an existing route defined before demand for transport and independently of a transport user’s door-to-door trip.” As discussed above for limitation [1.pre], a potential driver (“[a] driver”) offers transport along a predetermined route (“offering transport along an existing route”) that a driver has submitted to the central computer system before being matched with a potential passenger (“defined before demand for transport”) and independently of any passenger’s submitted journey itinerary

(“independently of a transport user’s door-to-door trip”). (§§VIII, IX.A.1.i; EX1005, 8, 11-12, 32-36, 70; EX1002, ¶84.)¹¹

Olmi also suggests transmitting, by the shared transport system the received transport request to a transport provider device of a transport provider (“transmitting, by the shared transport system, the transport request to a transport provider device of a transport provider”). (EX1002, ¶85.) But Olmi does not expressly state that the exact same transport request received in limitation [1.a] is transmitted to the transport provider device recited in this limitation. However, a POSITA would have found it obvious to configure the Olmi-Peer combined system/method to do so in view of Poykko426. (*Id.*)

Like Olmi and Peer, Poykko426 relates to a method of implementing a shared transport system using mobile devices of riders and drivers. For example, Poykko426’s “invention relates to ordering a transportation vehicle for a person and particularly, for improving reliability and early indication of approaching when

¹¹ In the Carma Litigation, PO disagrees with Petitioners’ proposed construction of the claimed “transport provider.” (EX1008, 9, 14.) However, Olmi (including as modified herein) discloses a “transport provider” where no construction is required and under any reasonable interpretation of the term, for the same reasons explained in this ground. (EX1002, ¶84; §IX.A.1.)

ordering a transportation vehicle.” (EX1011, 1:3-5.) Poykko426 provides “a method for arranging transportation for at least one person,” where that potential rider “has a communication device that is capable of establishing a communication connection to a server, and said server is capable of establishing a communication connection to at least one driver of a transportation vehicle having a second communication device.” (*Id.*, 2:12-16.) Both potential riders and drivers may connect to each other via the server by using their own mobile devices. (*Id.*, 4:28-5:11.) Poykko426 further describes a process for receiving a transportation request containing origination and destination information from a rider and using that information to match a rider with a potential driver. (*Id.*, 4:14-6:32.) Thus, Poykko426 is similar to Olmi and Peer, both of which disclose rideshare systems for arranging rides using a rider’s and transport provider’s mobile devices and a central computer. (§IX.A.1.i.) A POSITA would have therefore had good reason to consider the teachings of Poykko426 when implementing Olmi’s shared transport system/method (including as modified by Peer). (EX1002, ¶86.)

Poykko426 additionally discloses that when a transportation request from a potential rider’s communication device is received by the server, the *server may send “an exact copy of the transportation request” to a communication device of a driver* of a transportation vehicle. (EX1011, 5:29-6:21; *see also id.*, 2:16-21; EX1002, ¶87.)

Similar to that disclosed by Poykko426, a POSITA would have had good reason, and found it obvious, to implement a shared transport system/method like that described in Olmi such that the system's central computer forwards the same ride request received from the potential rider to a potential driver. (EX1002, ¶88.) Olmi's system/process allows a transportation provider to view/consider potential ride options and agree to providing transportation to a requesting rider. (EX1005, 43-44, 69.) A POSITA would have understood that these features allow the travel provider to easily view specific ride requests for approval and decline a ride when the situation changes for that provider. (EX1002, ¶88.)

A POSITA would have understood that having the central computer/ridesharing system transmit the same transport request (with the exact pick-up and destination location information for the potential rider) to the transport provider's device would have facilitated the travel provider's decision by allowing the provider to accurately assess the desired travel. (EX1002, ¶89.) Such an approach would have provided a straightforward implementation for sharing ride opportunities with the provider, given the rider's request already includes the information needed by the provider to facilitate ridesharing, and sending the exact request to the provider would have reduced processing requirements. (*Id.*) Such an implementation would have maximized efficiency and ensured reliable service,

consistent with Olmi's and Poykko426's shared goals. (EX1006, ¶¶[0002], [0005], [0038]; EX1011, 1:3-5.)

A POSITA would have had a reasonable expectation of success in implementing such features based on the teachings of Olmi and Poykko426. (EX1002, ¶90.) As discussed, both references are in the same field of art. (*Id.*) Moreover, as discussed above, Olmi suggests that the server may transmit the same transport request received from a rider to a potential driver (EX1006, ¶¶[0018]-[0022]), and thus implementing the Olmi-Poykko426 combined features (as incorporated in the Olmi-Peer-Poykko426 combination) would have involved modifying the Olmi system/method in a manner that Olmi suggests is feasible. (EX1002, ¶90.) Such a modification would have involved a combination of known technologies (e.g., known shared transport systems in which riders' requested rideshare options are shared with potential drivers (Olmi)) according to known techniques (e.g., known methods of sharing rideshare options with potential drivers by forwarding the exact requests received from riders (Poykko426)) to yield the predictable result of a combined Olmi-Peer-Poykko426 system/method in which the computer/ridesharing system transmits the same received transportation request to the driver's mobile device for assessment. (EX1002, ¶¶90-91; §IX.A.1.ii.) *KSR*, 550 U.S. at 416.

iv) [1.c]

The Olmi-Peer-Poykko426 combination discloses/suggests this limitation. (EX1002, ¶¶92-94.)

Peer’s central computer determines the ride has begun (“determining, by the shared transport system, a start of a transport”) when the driver and rider both use their devices to indicate the ride has begun (“using at least one of the transport provider device and the transport user device”). (EX1006, ¶[0045].) Alternatively, Peer’s system may determine that the ride has begun (“determining, by the shared transport system, a start of a transport”) by monitoring the positions of the driver and rider and evaluating whether those positions are essentially identical and moving at essentially the same speed in the same direction. (*Id.*, ¶[0045].) As discussed for limitation [1.pre], this monitoring of the driver/rider occurs via tracking the GPS location of each user’s device (“using at least one of the transport provider device and the transport user device”). (*Supra* §IX.A.1.i; EX1006, ¶[0043]; EX1002, ¶93.)

Thus, Peer (including as incorporated in the Olmi-Peer-Poykko426 combination) discloses this limitation. (EX1002, ¶94.)

v) [1.d]

The Olmi-Peer-Poykko426 combination discloses/suggests this limitation. (EX1002, ¶¶95-99.)

Peer discloses that “the safety of the traveler can be increased by tracking using an electronic localization system” incorporated in the ridesharing service system (“shared transport system”). (EX1006, ¶[0033].) *The system’s “central computer monitors the position of the party wishing to transport and/or the person wishing to travel and records when a noteworthy event occurs that indicates that the trip is not going according to the wishes of the party wishing to transport and/or the person wishing to travel” (“determining, by the shared transport system, an anomalous condition associated with the transport”).* (*Id.*) For example, an unusual/noteworthy event (“anomalous condition”) may include a “deviation from the trip route” (*id.*, ¶[0036]) or “the position or the operation of the transmitter chang[ing] in an unusual way” (*id.*, ¶[0037]).¹² (EX1002, ¶96.)

Peer explains that the determination of whether an unusual/noteworthy event (“anomalous condition”) has occurred is made by tracking the driver’s device and the rider’s device (“using at least one of the transport provider device and the transport user device”). (*Id.*, ¶97.) “The recording of the noteworthy event can be

¹² As discussed above (§IX.A.1.i), Peer (including as incorporated in the Olmi-Peer-Poykko426 combination) discloses an “anomalous condition” under PO’s proposed construction (which Petitioners do not agree with) and under any reasonable construction of the term. (§IX.A.1.i; EX1002, ¶96.)

implemented in such a way that specific parameters of the trip are calculated, and a comparison is made in each case as to whether the value of these parameters match specific target values and/or whether these parameters correspond to specific criteria specified in advance, which indicate a noteworthy event.” (EX1006, ¶[0034].) For example, “[t]he position of the monitored person” is a parameter that may be compared to “a specified trip route.” (*Id.*) *Peer explains that the corresponding “noteworthy event” (“anomalous condition”) is “a deviation from the trip route,”* which “can be monitored in that a check is made as to whether the position of the party wishing to transport and/or the person wishing to travel deviates from a previously input trip route.” (*Id.*, ¶[0036]; *see also id.*, ¶¶[0047]-[0048], claims 41-54; EX1002, ¶97.)

Also, as discussed above and for limitation [1.pre], the monitoring of the driver and rider may occur via tracking the GPS location of each user’s device (“using at least one of the transport provider device and the transport user device”). (§IX.A.1.i; EX1006, ¶[0043], EX1002, ¶98.)

Accordingly, Peer (including as incorporated in the Olmi-Peer-Poykko426 combination) discloses this limitation. (EX1002, ¶99.)

vi) [1.e]

The Olmi-Peer-Poykko426 combination discloses/suggests this limitation. (EX1002, ¶¶100-102.)

As explained above for limitation [1.d] (§IX.A.1.v; EX1006, ¶¶[0033]-[0039]), Peer discloses that “the ride-sharing agency’s computer checks during the trip whether the trip route is being complied with,” and “[i]f this is not the case, or if the driver’s vehicle even moves away from the specified trip destination or unusual routes, e.g., dirt roads, are taken, the ride-sharing agency’s computer records this as a noteworthy event” (“determined anomalous condition”). (EX1006, ¶[0048].) *Peer explains that “[t]he next step is for it to make contact with the passenger or the driver, depending on who requested the safety monitoring*, possibly by a message on the pager or using an obvious step such as a checkup call via a mobile telephone” (“transmitting, by the shared transport system, a notification to one or more of the transport user device, the transport provider device...based on the determined anomalous condition”). (*Id.*) The rideshare system’s computer may use “prearranged passwords or prearranged messages” to “check whether or not a dangerous situation exists.” (*Id.*) “[If] a passenger replies to an inquiry or to the password request with a sentence or a word that was agreed upon in advance as a signal for a dangerous situation, the nearest police station will be notified” (“transmitting, by the shared transport system, a notification to...security personnel based on the determined anomalous condition”). (*Id.*) “The same applies if the call or the message is abruptly interrupted, or if the transmitter or the mobile telephone of the passenger has obviously been thrown away or destroyed.” (*Id.*; *see also id.*,

claims 41-54, e.g., claims 43, 54.) Thus, in Peer, alerts may be sent to one or more of a rider's device, provider's device, and security/police based on a determined unusual/dangerous/noteworthy event. (EX1002, ¶101.)

Accordingly, Peer (including as incorporated in the Olmi-Peer-Poykko426 combination) discloses this limitation. (*Id.*, ¶102.)

2. Claim 2

The Olmi-Peer-Poykko426 combination discloses/suggests this limitation. (EX1002, ¶¶103-109.)

As discussed for limitation [1.c], Peer discloses “determining, by a shared transport system, a start of a transport using at least one of the transport provider device and the transport user device.” For example, Peer teaches a technique for determining that a ride has begun using electronic localization techniques to evaluate whether the positions of the rider and driver devices are “essentially identical and are changing essentially at the same speed and in the same direction,” indicating that “the person wishing to travel has climbed into the vehicle of the party wishing to transport, and the two of them are now on the joint trip.” (EX1006, ¶[0045]; §IX.A.1.iv.) As discussed for limitation [1.pre], the electronic localization techniques are enabled at the driver and rider devices via a built-in satellite navigation system such as GPS (“using Global Positioning System (GPS) technology enabled at the transport provider device and the transport user device”).

(§IX.A.1.i; EX1006, ¶¶[0007]-[0008], [0041], [0043]; EX1002, ¶104.) This technique of determining whether the two positions are “essentially identical” (EX1006, ¶[0045]) discloses “determining that the transport provider device and the transport user device are within a predetermined proximity,” because determining whether two devices have essentially identical positions requires determining how close the devices are to each other. (EX1002, ¶104.)

To the extent PO argues, or it is determined, that Peer’s above teachings do not disclose the claimed “determining...within a predetermined proximity” limitation, a POSITA would have found it obvious to implement such a feature in the Olmi-Peer-Poykko426 combination in view of Peer’s other disclosures regarding proximity detection. (*Id.*, ¶105.) Similar to how Peer describes two methods of determining a start of transport—either through rider/driver manually inputting that the trip is starting, or alternatively the system detecting that the positions of the rider/driver devices are essentially identical and changing at the same speed in the same direction (EX1006, ¶[0045])—Peer discloses two complementary methods for determining that the trip has ended (*id.*, ¶[0046]). “Upon ending the trip, the two travelers input the fact that the trip has now ended, in the same way” as discussed for determining start of the trip. (*Id.*, ¶[0046].) “As an alternative or supplement, the computer can check whether...the positions of the two travelers **differ by more than a specified amount for a longer period**, e.g., longer than the normal stay at a

rest stop or the like, from which the system concludes that the person wishing to travel is no longer in the vehicle of the party wishing to transport and will also not return to it.” (*Id.*, ¶[0046].) Thus, Peer discloses determining whether rider/driver device positions indicate that the transport journey has ended by determining whether those positions are outside of a predetermined proximity. (EX1002, ¶105.)

Based on these teachings, a POSITA would have had good reason to similarly determine whether the positions of rider/ driver devices are essentially identical and indicate that the transport journey has started by using localization technology (e.g., GPS) to determine whether those devices are within a predetermined proximity (“determining that the transport provider device and the transport user device are within a predetermined proximity”). (*Id.*, ¶106.)

A POSITA would have understood from Peer’s disclosures, which describe determining the end of a journey in the same or a complementary way to determining the start of a journey, that it would have been obvious to determine whether the rider and driver devices are at essentially identical positions and moving in essentially the same direction at the same speed by, in part, determining that the two devices are within a predetermined proximity (e.g., GPS-provided locations differ by less than some specified amount). (*Id.*, ¶107.) A POSITA would have recognized the benefits of determining whether the devices are at the same position by determining whether the devices are within a predetermined proximity because, in the context of the start

of a transport journey, the rider/driver devices may be slightly apart (e.g., front and back seat of a vehicle) during the trip, rather than at the exact same location. (*Id.*) Additionally, such an implementation would have increased accuracy and avoided/reduced the chance of an erroneous determination that a journey has started. Accordingly, use of a predetermined proximity helps ensure accuracy and reliability thereby improving system performance and user experience. (*Id.*)

A POSITA would have had a reasonable expectation of success in implementing such a feature. Such an implementation would have involved modifying the Peer system/method (as incorporated in the Olmi-Peer-Poykko426 combination) in a manner that Peer suggests is feasible—using GPS technology to determine device locations and determining whether devices are at the same location by comparing distance between devices to some predetermined amount/proximity. (*Id.*, ¶108.) Such a modification would have involved a combination of known technologies (e.g., known tracking of mobile device locations to determine start of a journey (Peer)) according to known techniques (e.g., known methods of position comparison using comparison to a predetermined proximity (Peer)) to yield the predictable result of a combined Olmi-Peer-Poykko426 system/method in which determining a start of transport (as described for limitation [1.c]) comprises “determining that the transport provider device and the transport user device are within a predetermined proximity using Global Positioning System (GPS)

technology enabled at the transport provider device and the transport user device.”

KSR, 550 U.S. at 416. (EX1002, ¶¶108-109.)

3. Claim 4

The Olmi-Peer-Poykko426 combination discloses/suggests this limitation.
(EX1002, ¶¶110-111.)

As discussed for limitation [1.d], Peer discloses “determining, by the shared transport system, an anomalous condition associated with the transport using at least one of the transport provider device and the transport user device.” (§IX.A.1.v.) Peer explains that such determining may comprise determining that there has been a deviation from the travel route or destination (“determining the transport is off-route”). (EX1006, ¶[0036].) The detection of such an anomalous condition in Peer includes “check[ing]...whether the position of the party wishing to transport...deviates from a previously input trip route” (*id.*) and “whether the trip route is being complied with” or “if the driver’s vehicle even moves away from the specified trip destination or unusual routes...are taken” (*id.*, ¶[0048]) (“comparing a location of the transport provider...with the destination or a route”). (EX1002, ¶111; §IX.A.1.v.) As explained for limitation [1.d], the driver’s location is tracked by tracking the location of the user’s device (“location of the transport provider device”). (§IX.A.1.v; EX1006, ¶¶[0034]-[0037], [0043], [0047]-[0048].)

Accordingly, Peer (including as incorporated in the Olmi-Peer-Poykko426 combination) discloses this limitation. (EX1002, ¶111.)

4. Claim 5

The Olmi-Peer-Poykko426 combination discloses/suggests this limitation. (EX1002, ¶¶112-114.) As discussed for limitation [1.d], Peer discloses “determining, by the shared transport system, an anomalous condition associated with the transport using at least one of the transport provider device and the transport user device.” (§IX.A.1.v.) As discussed for claim 4, Peer discloses determining the transport is off-route by checking for a deviation from a determined travel route or destination. (*Supra* §IX.A.3; EX1006, ¶¶[0036], [0048], claims 41-42, 44-46.) Peer also discloses determining the end of a transport by checking whether the positions of the rider and transport provider devices are moving away from each other or have different positions, “both of which suggest that the party wishing to transport has dropped off the person wishing to travel and is now driving away.” (EX1006, ¶[0046].)

Peer further discloses that an unusual/noteworthy event (“anomalous condition”) may be when a transmitter is turned off, destroyed, or discarded, indicating that a user with improper intentions has attempted to circumvent monitoring by prematurely ending monitoring of the transport journey. (EX1006, ¶[0037].) “Throwing away the transmitter can be detected...in that **the position of**

this transmitter no longer changes before an input trip destination, or, if the other traveler can be localized, the position of a transmitter of the party wishing to transport and that of the transmitter of a person wishing to travel suddenly separate from each other, or also in that such a change occurs while the vehicle is moving, or **at a location that is not customary for the end of a trip**, e.g., along a highway away from inhabited regions.” (*Id.*, ¶[0037]; EX1002, ¶113.)

A POSITA would have understood that such teachings are consistent with a process of determining the transport journey has prematurely terminated (“determining the transport has terminated before reaching the destination”). (EX1002, ¶114.) Indeed, Peer’s method includes determining “whether a **discrepancy** exists between the position[s] of the **transmitter[s]**” of the rider and transport provider “**by more than a specified amount before the trip destination of the person wishing to travel has been reached.**” (EX1006, claim 47.) Such features are consistent with Peer’s teachings that determining whether the “end of the trip...has been reached” involves “checking whether the corresponding positions” of the transport user and provider “are moving away from each other...or that the positions of the two travelers differ by more than a specified amount for a longer period [of time].” (*Id.*, ¶[0046].) Thus, Peer (including as incorporated in the Olmi-Peer-Poykko426 combination) discloses “determining the transport has terminated before reaching the destination” because determining whether positions

of rider/driver devices separate suddenly before a destination is reached, while the vehicle is in motion, or at a location other than the indicated destination, are all anomalous conditions indicating that the destination has not yet been reached. (EX1002, ¶114.)

5. Claim 6

The Olmi-Peer-Poykko426 combination discloses/suggests this limitation. (EX1002, ¶¶115-116.)

As discussed for claim 5, “determining the transport has terminated before reaching the destination” involves “checking whether the corresponding positions” of the rider and driver devices “**differ by more than a specified amount** for a longer period” of time, “from which the system concludes that the person wishing to travel is no longer in the vehicle of the party wishing to transport and will also not return to it.” (EX1006, ¶[0046]; *see also id.*, ¶[0037], claim 47; §IX.A.4.) In other words, Peer (including as incorporated in the Olmi-Peer-Poykko426 combination) discloses determining the transport has terminated before reaching the destination by determining, before reaching the destination, that the locations of the driver and rider devices are no longer within a specified distance (“determining, before reaching the destination, that the transport provider device and the transport user device are no longer within a predetermined proximity”). (EX1002, ¶116.)

6. Claim 7

The Olmi-Peer-Poykko426 combination discloses/suggests this limitation.
(EX1002, ¶¶117-118.)

As discussed for claim 6, Peer discloses that “the transport provider device and the transport user device are determined to be no longer within the predetermined proximity” by determining whether the positions of the devices differ by more than a predetermined amount. (§IX.A.5.) As discussed for limitation [1.pre], Peer (including as incorporated in the Olmi-Peer-Poykko426 combination) discloses that device positions are tracked using GPS enabled at both driver and rider devices (“using Global Positioning System (GPS) technology...enabled at the transport provider device and the transport user device”). (§IX.A.1.i; EX1002, ¶118.)

7. Claim 8

The Olmi-Peer-Poykko426 combination discloses/suggests this limitation.
(EX1002, ¶¶119-120.)

As discussed for limitation [1.d], Peer discloses “determining, by the shared transport system, an anomalous condition associated with the transport using at least one of the transport provider device and the transport user device.” (§IX.A.1.v) As discussed for claim 5, one such anomalous condition may be determining that the trip has terminated (“determining the transport has terminated”) by determining that

the positions of the driver and rider devices have separated at an unintended location before the destination is reached (“at a location different from the destination”). (§IX.A.4; EX1006, ¶¶[0037], [0046], [0048], claims 41-48.) Accordingly, Peer (including as incorporated in the Olmi-Peer-Poykko426 combination) discloses the “determining” of limitation [1.d] includes “determining the transport has terminated at a location different from the destination.” (EX1002, ¶120; §§IX.A.1.v, IX.A.4.)

8. Claim 9

The Olmi-Peer-Poykko426 combination discloses/suggests this limitation. (EX1002, ¶¶121-124.)

As discussed for claims 5, 6, and 8, Peer discloses that “determining the transport has terminated at a location different from the destination” comprises determining the positions/locations of the rider/driver devices and determining that the devices have prematurely separated (e.g., at a location different than the intended destination) (“determining a location”) by “checking whether the corresponding positions [of the transport user and transport provider’s devices] are moving away from each other...or that the positions of the two travelers differ by more than a specified amount for a longer period [of time]” (“transport provider device and the transport user device became no longer within a predetermined proximity”). (EX1006, ¶[0046], claims 45, 47-48; §§IX.A.4-IX.A.5, IX.A.7; EX1002, ¶122.)

The determination that the devices are no longer within a predetermined proximity involves “determining a location” at which that separation occurs because, as discussed above, the proximity check involves a comparison of the device locations, and thus a determination of both rider and driver device locations. (EX1002, ¶123.) The position of the rider’s device at the time when the proximity check determines that the devices are no longer within a predetermined proximity is a determined location of separation. (*Id.*) Indeed, Peer discloses that the “recording of the noteworthy event can be implemented in such a way that specific parameters of the trip are calculated, and a comparison is made in each case as to whether the value of these parameters match specific target values and/or whether these parameters correspond to specific criteria specified in advance.” (EX1006, ¶[0034].) For example, “[t]he position of the monitored person” (i.e., a determined location) may be compared to a “corresponding target value...result[ing] from, e.g., a specified trip route” (i.e., a specified location along the route, such as a destination). (*Id.*) “[T]he system retains a record of the trip data and any noteworthy events.” (*Id.*, ¶[0048].) Thus, “determining the transport has terminated at a location different from the destination,” e.g., by determining that the driver/rider devices are no longer within a predetermined proximity, would have involved determining and recording the location at which the devices separated and comparing that to the target destination value (“determining a location at which the transport provider device and

the transport user device became no longer within a predetermined proximity”).
(EX1002, ¶123.)

Accordingly, Peer (including as incorporated in the Olmi-Peer-Poykko426 combination) discloses/suggests claim 9. (*Id.*, ¶124.)

9. Claim 10

The Olmi-Peer-Poykko426 combination discloses/suggests this limitation.
(EX1002, ¶¶125-128.)

As discussed for limitation [1.e], if an anomalous condition is detected, Peer’s computer/ridesharing system sends a message/phone call to the device of the user (driver/rider) that requested safety monitoring (“notification to the transport provider device or the transport user device”) to check whether a dangerous situation exists (“comprises a request for transport status”). (§IX.A.1.vi; EX1006, ¶[0048], claims 41-43.) This check-up call/message is a “request for transport status” because it asks the user to confirm whether the transport journey is dangerous. (EX1002, ¶126.) For example, Peer’s system/method uses “prearranged passwords or prearranged messages” to “check whether or not a dangerous situation exists,” and “if a passenger replies to an inquiry or to the password request with a sentence or a word that was agreed upon in advance as a signal for a dangerous situation, the nearest police station will be notified.” (EX1006, ¶[0048].)

Peer's system may also detect an anomalous condition by "check[ing] whether the navigation system is continuously and reliably providing data regarding the current position." (*Id.*, ¶[0038].) "If this is not the case, the owner of the device can receive a notice that his navigation system is not working correctly," as well as "a prompt by means of which the traveler confirms that no dangerous situation exists." (*Id.*) Such a prompt, which asks a user to confirm whether the transport journey status is dangerous, is also a notification comprising a "request for transport status." (EX1002, ¶127.)

Accordingly, Peer (including as incorporated in the Olmi-Peer-Poykko426 combination) discloses claim 10. (*Id.*, ¶ 128)

10. Claim 11

The Olmi-Peer-Poykko426 combination discloses/suggests this limitation. (EX1002, ¶¶129-133.)

As discussed for limitation [1.e] and claim 10, Peer discloses that a "notification to the transport provider device or the transport user device" may be a message/call for a "password request," to which the device user responds with "a sentence or a word that was agreed upon in advance as a signal for a dangerous situation" if a dangerous situation exists. (EX1006, ¶[0048]; §§IX.A.1.vi, IX.A.9.) A request for a user's agreed-upon password "comprises a request for identity

verification” because the confirmation of the password serves as a mechanism of confirming the identity of the person (e.g., rider/driver). (EX1002, ¶130.)

In particular, Peer explains how, in addition to agreeing upon a password, “[a] driver can transmit a description of his passenger to the monitoring system or, if the passenger agrees to it, **the number of an identification document**” when accepting a rideshare. (EX1006, ¶[0048]; *see also id.*, ¶[0045].) If a user provides the agreed-upon password indicating that a dangerous situation exists and “the relevant person is later reported as a missing person, the corresponding data can be handed over to the police,” which “serves as insurance...that there is at least a trace to his person if something should happen to the other person.” (*Id.*, ¶[0048].) Thus, in the Peer system/method (as incorporated in the Olmi-Peer-Poykko426 combination) discussed above for claim 10 (*supra* §IX.A.9), an alert for an anomalous condition serves to check whether a dangerous condition exists by asking the device’s user to confirm their identity (“wherein the notification to the transport provider device or the transport user device further comprises a request for identity verification”). (EX1002, ¶131.)

However, to the extent such a password request is found not to disclose a “request for identity verification,” a POSITA would have had good reason to implement such a feature in the Peer system (as incorporated in the Olmi-Peer-Poykko426 combination) in view of Peer’s disclosures above, which explain the

importance of tracking rider/driver identity in the context of Peer's safety mechanisms. (EX1006, ¶¶[0046], [0048]; EX1002, ¶132.) A POSITA would have thus understood the benefits of implementing a password request message/call that not only confirms whether there is a dangerous situation, but also verifies the user's identity (e.g., by implementing the password as a user identifier or storing in the system a set of unique relationships between each user's identity and safety verification password) to provide an extra level of verification that the user answering the password request is the intended user. (*Id.*) For example, when confirming whether a dangerous situation exists, it is important to make contact with the correct user (and not, e.g., another user who has taken the intended user's mobile device) to receive an accurate assessment of the situation and prevent further safety issues. (*Id.*)

A POSITA would have had a reasonable expectation of success in implementing such a feature in the Peer system/method (as incorporated in the Olmi-Peer-Poykko426 combination) because Peer already discloses that the system stores various information associated with a given user (e.g., storing an association between a potential rider and driver (EX1006, ¶[0014]) and retaining trip data for each user (*id.*, ¶[0048])) and thus storing the relationship between a user's identity information and a user's password for confirming dangerous situations would have been easily implemented in Peer's modified system/method. (EX1002, ¶133.) Such

a modification would have involved a combination of known technologies (e.g., known password request safety mechanisms (Peer)) according to known techniques (e.g., known methods of storing identity information for safety (Peer)) to yield the predictable result of an Olmi-Peer-Poykko426 system/method “wherein the notification to the transport provider device or the transport user device further comprises a request for identity verification.” (*Id.*) *KSR*, 550 U.S. at 416.

11. Claim 12

Claim 12 recites limitations similar to those recited in claim 1 except that claim 12 is presented as a “system” comprising “at least one processor” and “at least one storage” storing “instructions” that “when executed by the at least one processor” perform operations consistent with the method for managing anomalous conditions like that recited in claim 1. (*Compare* EX1001, claims 1 and 12). Accordingly, in addition to the analysis/explanation below, Olmi in view of Peer and Poykko426 renders obvious the features of claim 12 for the same reasons explained above for claim 1. (§IX.A.1; EX1002, ¶134.)

- i) [12.pre]
- ii) [12.a]
- iii) [12.b]

To the extent limiting, Olmi in view of Peer discloses/suggests the preamble of claim 12 ([12.pre]) and limitations [12.a]-[12.b]. (EX1002, ¶¶135-140.)

To begin, as discussed for limitation [1.pre], Olmi discloses a computer/ridesharing “system,” and Olmi in view of Peer discloses/suggests that such a system performs a computer-implemented method for “managing anomalous conditions in a shared transport system,” consistent with the method recited in claim 1. (§IX.A.1.i; EX1002, ¶136.)

Olmi (including as modified in the Olmi-Peer combination) also discloses “at least one processor.” (EX1002, ¶137.) Olmi’s central computer system is a “data-processing system” that may “compris[e] a set of distributed...computer processors.” (EX1005, 13.) A POSITA would have thus understood that the Olmi-Peer system includes “at least one processor” in the central computer/ridesharing system responsible for arranging rides and monitoring trips for anomalous conditions. (EX1002, ¶137.)

The Olmi-Peer combination further discloses/suggests “at least one storage storing instructions which, when executed by the at least one processor, cause the at least one processor to perform operations for managing anomalous conditions in a shared transport system.” (*Id.*, ¶138.) Olmi (including as modified in the Olmi-Peer combination) discloses that “the term controlling computer system not only refers to the data-processing hardware, but also encompasses the data-processing instructions (computer programming code) running on this hardware.” (EX1005, 13.) The Olmi system’s “data-processing instructions” include “computer instructions or code” that

may be “encapsulated in hardware (such as firmware or purpose-designed integrated circuits).” (EX1005, 12.) Thus, the Olmi-Peer computer/ridesharing system would have had a hardware/memory for storing data-processing instructions (“at least one storage storing instructions”), which are executed by the control computer’s processor(s) to perform the disclosed processes in the Olmi-Peer system/method (“which, when executed by the at least one processor, cause the at least one processor to perform operations”). (EX1002, ¶138.)

As for performing operations “for managing anomalous conditions in a shared transport system,” the analysis for limitation [1.pre] demonstrates how the Olmi-Peer “shared transport system” (e.g., computer/ridesharing system) performs a computer-implemented method like that recited in claim 1, and tracks the same operations recited in claim 12. (§IX.A.1.i; EX1002, ¶139.)

Thus, for the reasons provided above and for limitations [1.pre] and [12.b.i]-[12.b.v], the Olmi-Peer system/method discloses/suggests limitations [12.pre]-[12.b]. (§§IX.A.1.i, IX.A.11.i-ii, IX.A.11.iv; EX1002, ¶140).

iv) Limitations [12.b.i]-[12.b.v]

Limitations [12.b.1]-[12.b.v] track limitations [1.a]-[1.e]. (§XI (claims 1, 12.) Accordingly, Olmi in view of Peer and Poykko426 renders obvious limitations [12.b.i]-[12.b.v] for the same reasons as discussed for limitations [12.pre]-[12.b] (addressing claimed system, processor, and storage) and [1.a]-[1.e] (addressing same

“operations” recited in claim 12). (§§IX.A.1.ii-IX.A.1.vi, IX.11.i-IX.11.iii; EX1002, ¶¶141-142.)

Accordingly, the Olmi-Peer-Poykko426 system/method discloses/suggests, and renders obvious, claim 12. (EX1002, ¶142.)

12. Claim 13

The Olmi-Peer-Poykko426 combination discloses/suggests claim 13 for the same reasons discussed for claim 2. (§IX.A.2; EX1002, ¶143.)

13. Claim 15

The Olmi-Peer-Poykko426 combination discloses/suggests claim 15 for the same reasons discussed for claim 4. (§IX.A.3; EX1002, ¶144.)

14. Claim 16

The Olmi-Peer-Poykko426 combination discloses/suggests claim 16 for the same reasons discussed for claim 5. (§IX.A.4; EX1002, ¶145.)

15. Claim 17

The Olmi-Peer-Poykko426 combination discloses/suggests claim 17 for the same reasons discussed for claim 6. (§IX.A.5; EX1002, ¶146.)

16. Claim 18

The Olmi-Peer-Poykko426 combination discloses/suggests claim 18 for the same reasons discussed for claim 7. (§IX.A.6; EX1002, ¶147.)

17. Claim 19

The Olmi-Peer-Poykko426 combination discloses/suggests claim 19 for the same reasons discussed for claim 8. (§IX.A.7; EX1002, ¶148.)

18. Claim 20

Claim 20 recites limitations similar to those recited in claim 1 (and claim 12) except claim 20 is presented as a “non-transitory computer readable medium” comprising “instructions” that “when executed by at least one processor” cause the “processor to perform operations” consistent with the method for managing anomalous conditions like that recited in claim 1. (*Compare* EX1001, claims 1 and 20). Accordingly, in addition to the analysis/explanation below, Olmi in view of Peer and Poykko426 renders obvious the features of claim 20 for the same reasons explained above for claims 1 and 12. (§§IX.A.1, IX.A.11; EX1002, ¶149.)

i) [20.pre]

To the extent the preamble of claim 20 is limiting, Olmi in view of Peer discloses/suggests the limitations therein. (EX1002, ¶¶150-151.)

The analysis for limitations [12.pre]-[12.b] demonstrates how the Olmi-Peer combination discloses/suggests similar features. (§IX.A.11.i-IX.A.11.iii (demonstrating how Olmi (including as modified in the Olmi-Peer combination) as discloses/suggests a “processor” and “storage” with “instructions” (which is “at least one non-transitory computer readable medium comprising instructions”) that are

executed by the processor in the Olmi-Peer computer/ridesharing system to perform processes for managing anomalous conditions (“which, when executed by at least one processor, cause the at least one processor to perform operations for managing anomalous conditions in a shared transport system”)).) For those same reasons discussed for limitations [12.pre]-[12.b], Olmi in view of Peer discloses/suggests limitation [20.pre]. (*Id.*; EX1002, ¶151.)

ii) Limitations [20.a]-[20.e]

Limitations [20.a]-[20.e] track limitations [1.a]-[1.e] and [12.b.i]-[12.b.v]. (§XI (claims 1, 12, and 20.) Accordingly, Olmi in view of Peer and Poykko426 renders obvious limitations [20.a]-[20.e] for the same reasons as discussed above for limitation [20.pre] (addressing claimed computer readable medium, processor, and instructions) and limitations [1.a]-[1.e] and [12.b.i]-[12.b.v] (addressing same “operations” recited in claims 1 and 12). (§§IX.A.1.ii-IX.A.1.vi, IX.11.i-IX.11.iv; IX.18.i; EX1002, ¶¶152-153.)

Accordingly, for the reasons explained above, the Olmi-Peer-Poykko426 system/method discloses/suggests, and renders obvious, claim 20. (EX1002, ¶153.)

B. Ground 2: Olmi In View of Peer, Poykko426, and Jeon Renders Claims 3 and 14 Obvious

1. Claim 3

The Olmi-Peer-Poykko426 combination in view of Jeon renders obvious this limitation. (EX1002, ¶¶154-164; *see also id.*, ¶¶46-48; §§IX.A.1, IX.A.2, IX.A.11.)

As discussed for claim 2, Peer discloses “wherein determining, by a shared transport system, a start of a transport using at least one of the transport provider device and the transport user device comprises: determining that the transport provider device and the transport user device are within a predetermined proximity using...technology enabled at the transport provider device and the transport user device.” (§IX.A.2.) Peer (and likewise the Olmi-Peer-Poykko426 combination) does not explicitly disclose that the system determines that the two devices are within a predetermined proximity “using Near Field Communication (NFC) technology.” However, a POSITA would have found it obvious to implement such features in the Olmi-Peer-Poykko426 system/method in view of Jeon. (EX1002, ¶156.)

Jeon relates to a method of implementing location-based safety features in a shared transport system. For example, Jeon discloses a “method and system for providing taxi safety services, which are designed to enable passengers to use taxis with enhanced safety and peace of mind.” (EX1007, Abstract.) “Taxi passengers and taxi companies apply for subscription and registration to the taxi safety service.” (*Id.* at 3.) Both the passenger and taxi driver have a mobile terminal/phone, which a passenger uses to call for a safe taxi ride and a driver uses to share payment and safety information with the passenger terminal (e.g., cost, vehicle number, and driver’s name) and to communicate with the service center. (*Id.* at 3-4.) Jeon

explains that the “service center (40) also tracks the current location of the taxi via the GPS (23) of the taxi terminal (20) so that, in the event of a loss such as taxi theft, the current position of the vehicle can be determined.” (*Id.* at 4.) The service center can detect taxi theft via this tracking and issue alerts (e.g., to police) in response. (*Id.*) Thus, Jeon is similar to Peer, which discloses a rideshare system that enables location tracking at both the rider/driver mobile devices to enable safety alerts upon detection of anomalous conditions, and is also similar to Olmi and Poykko426, both of which disclose rideshare systems for arranging rides using a rider’s and driver’s mobile devices and a central computer/rideshare center. (§IX.A.1.) A POSITA would have therefore had good reason to consider the teachings of Jeon when implementing Peer’s monitoring system (as incorporated in the Olmi-Peer-Poykko426 combination). (EX1002, ¶157.)

Jeon additionally discloses that “[t]he passenger terminal (10) and the taxi terminal (20) are connected via a near-field communication network, such as infrared (IrDA) or Bluetooth.” (EX1007, 3.) Jeon explains that “the taxi terminal (20) comprises a near-field communicator (21) installed at a predetermined position on the exterior of the taxi and configured to enable near-field communication with the passenger terminal (10).” (*Id.* at 3.) “Prior to boarding, the passenger brings their terminal (10), such as a mobile phone, close to the near-field communicator (21) installed in the taxi in order to establish near-field communication.” (EX1007,

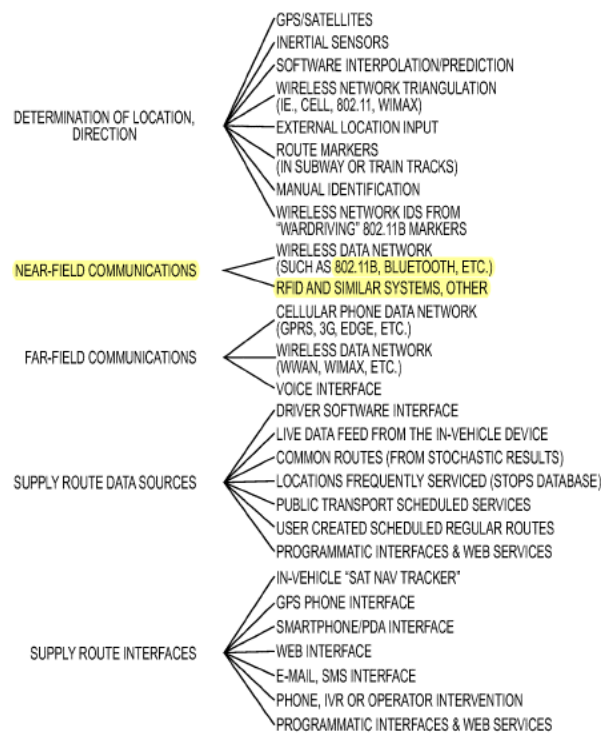
4.) “Once near-field communication is established, the taxi terminal (20) relay’s the taxi’s information—such as the taxi company name, vehicle number, and driver’s name—to the passenger terminal (10) via the near-field communicator (21).” (*Id.*) After the passenger and taxi mobile terminals share information to mark the start of a journey, “[t]he passenger presses a predetermined button on the terminal (10) to transmit the received taxi information, along with boarding-related data such as current location and time, to the service center (40) via the CDMA mobile communication network/mobile internet network (30) (step 303).” (*Id.* at 4.) The service center then proceeds to “track[] the current location of the taxi” to perform the safety monitoring discussed above. (*Id.* at 4; EX1002, ¶158.)

Thus, Jeon’s system determines that the transport journey has started (“determining, by a shared transport system, a start of a transport”) using both the rider and driver devices (“using at least one of the transport provider device and the transport user device”) by bringing the two devices within a short-distance range (“determining that the transport provider device and the transport user device are within a predetermined proximity”) using near-field communication technology enabled on both devices (“using Near Field Communication (NFC) technology enabled at the transport provider device and the transport user device”). (EX1002, ¶159.) Jeon’s system determines that the two devices are “within a predetermined proximity” because for a given short-range communication technology such as

Bluetooth, there is some predetermined proximity that the two devices must be within in order for the communication to occur. (*Id.*)

A POSITA would have understood that Jeon's NFC technology is consistent with that disclosed by the '668 patent, which similarly explains that near-field communication technology includes technologies such as Bluetooth. (EX1001, 11:44-53, FIG. 2 (below, associating near-field communications with "802.11B, Bluetooth, etc." and "RFID and similar systems, other"); EX1002, ¶160.)

FIGURE 2. TRANSPORT CAPACITY COMPUTING AND COMMUNICATIONS COMPONENTS



(EX1001, FIG. 2 (annotated).)

A POSITA would have had good reason to include features similar to those disclosed by Jeon when implementing Peer's monitoring system/method (including

as incorporated in the Olmi-Peer-Poykko426 combination) in order to provide an improved method of determining the start of transport in a manner consistent with the features disclosed by Peer. (EX1002, ¶161.) Indeed, as discussed for limitation [1.c], Peer discloses that when both the transport user and transport provider arrive at the pick-up point, the start of the transport journey may be determined by both users entering a message into the computer indicating that the journey has begun, or the start may be determined by the system monitoring both users' positions and determining that the two positions are essentially the same (i.e., within a predetermined proximity). (§IX.A.1.iv.) Jeon's method of determining the start of transport would have improved security in Peer's system/method (as incorporated in the Olmi-Peer-Poykko426 combination) by only allowing users to mark that the journey has begun when they are within a predetermined proximity and by allowing for the passenger to view vehicle/driver information during the ride (as would occur in order for Jeon's method to facilitate device-to-device communications). (*Id.*) Jeon's features would have also improved convenience by communicating the fare (alongside safety information) upfront through near-field communication functionalities. (*Id.*) Likewise, limiting the range of communications would complement Peer's features that monitor when the position of rider and driver devices are getting closer, are within a determined range, or are moving further apart (EX1006, ¶¶[0045]-[0046], claims 45-48.) Jeon's near-field communication would

have added flexibility and provided a fail-safe technique in case GPS is unavailable (e.g., due to physical obstructions, weather, etc.). (EX1002, ¶161.)

A POSITA would have thus had good reason to use near-field communication technologies with the rider/driver devices and configure the system/method to facilitate communications between those devices to determine a start of transport when the devices are within a predetermined proximity (e.g., a distance within range of the near-field communications, or within a predefined distance when in such range). (EX1002, ¶162.)

A POSITA would have had a reasonable expectation of success in implementing such features based on the teachings of Peer and Jeon. (*Id.*, ¶163.) As discussed, both references are in the same field, and Peer discloses that rider/driver mobile devices are used to communicate within the system and mark the beginning of the journey. (§IX.A.1.iv; EX1006, ¶[0045].) As discussed above, Jeon discloses that mobile phones at the time could be enabled with near-field communication technologies suitable for determining the start of a transport journey. (EX1002, ¶163; EX1007, 4.) Thus, implementing the Peer-Jeon combined features (as incorporated in the Olmi-Peer-Poykko426-Jeon combination) would have involved modifying the Peer system/method in a manner that Peer suggests is feasible—implementing features that use known mobile device communication functionalities to determine that the transport journey has begun in a near-field

communication application as taught by Jeon. (EX1002, ¶163.) Such a modification would have involved a combination of known technologies (e.g., known tracking of mobile device locations associated with rider/driver from the start of a journey (Peer)) according to known techniques (e.g., known methods of using near-field communication enabled mobile devices to determine the start of a shared transport journey (Jeon)) to yield the predictable result of a combined Olmi-Peer-Poykko426-Jeon system/method that uses NFC technology enabled at both rider/driver devices to determine a start of transport when the devices are brought within a predetermined proximity. (*Id.*, ¶¶163-164.) *KSR*, 550 U.S. at 416.

2. Claim 14

The Olmi-Peer-Poykko426-Jeon combination discloses/suggests claim 14 for the same reasons discussed for claim 3. (§IX.B.1; EX1002, ¶165.)

X. CONCLUSION

Accordingly, Petitioners request institution based on the above grounds.

Respectfully submitted,

Dated: March 12, 2026

By: /Naveen Modi/
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XI. APPENDIX A (CLAIM LISTING)

Claim 1

[1.pre] A computer-implemented method for managing anomalous conditions in a shared transport system, the method comprising:

[1.a] receiving, by the shared transport system, a transport request from a transport user device of a transport user, the transport request including a pick-up location and a destination;

[1.b] transmitting, by the shared transport system, the transport request to a transport provider device of a transport provider;

[1.c] determining, by the shared transport system, a start of a transport using at least one of the transport provider device and the transport user device;

[1.d] determining, by the shared transport system, an anomalous condition associated with the transport using at least one of the transport provider device and the transport user device; and

[1.e] transmitting, by the shared transport system, a notification to one or more of the transport user device, the transport provider device, and security personnel based on the determined anomalous condition.

Claim 2

The computer-implemented method of claim 1, wherein determining, by a shared transport system, a start of a transport using at least one of the transport provider device and the transport user device comprises:

determining that the transport provider device and the transport user device are within a predetermined proximity using Global Positioning System (GPS) technology enabled at the transport provider device and the transport user device.

Claim 3

The computer-implemented method of claim 1, wherein determining, by a shared transport system, a start of a transport using at least one of the transport provider device and the transport user device comprises:

determining that the transport provider device and the transport user device are within a predetermined proximity using Near Field Communication (NFC) technology enabled at the transport provider device and the transport user device.

Claim 4

The computer-implemented method of claim 1, wherein determining, by the shared transport system, an anomalous condition associated with the transport using at least one of the transport provider device and the transport user device comprises:

determining the transport is off-route by comparing a location of the transport provider device with the destination or a route.

Claim 5

The computer-implemented method of claim 1, wherein determining, by the shared transport system, an anomalous condition associated with the transport using at least one of the transport provider device and the transport user device comprises:

determining the transport has terminated before reaching the destination.

Claim 6

The computer-implemented method of claim 5, wherein determining the transport has terminated before reaching the destination comprises:

determining, before reaching the destination, that the transport provider device and the transport user device are no longer within a predetermined proximity.

Claim 7

The computer-implemented method of claim 6, wherein the transport provider device and the transport user device are determined to be no longer within the predetermined proximity using Global Positioning System (GPS) technology or Near Field Communication (NFC) technology enabled at the transport provider device and the transport user device.

Claim 8

The computer-implemented method of claim 1, wherein determining, by the shared transport system, an anomalous condition associated with the transport using at least one of the transport provider device and the transport user device comprises:

determining the transport has terminated at a location different from the destination.

Claim 9

The computer-implemented method of claim 8, wherein determining the transport has terminated at a location different from the destination comprises:

determining a location at which the transport provider device and the transport user device became no longer within a predetermined proximity.

Claim 10

The computer-implemented method of claim 1, wherein the notification to the transport provider device or the transport user device comprises a request for transport status.

Claim 11

The computer-implemented method of claim 10, wherein the notification to the transport provider device or the transport user device further comprises a request for identity verification.

Claim 12

[12.pre] A system comprising:

[12.a] at least one processor; and

[12.b] at least one storage storing instructions which, when executed by the at least one processor, cause the at least one processor to perform operations for managing anomalous conditions in a shared transport system, the operations comprising:

[12.b.i] receiving, by the shared transport system, a transport request from a transport user device of a transport user, the transport request including a pick-up location and a destination;

[12.b.ii] transmitting, by the shared transport system, the transport request to a transport provider device of a transport provider;

[12.b.iii] determining, by the shared transport system, a start of a transport using at least one of the transport provider device and the transport user device;

[12.b.iv] determining, by the shared transport system, an anomalous condition associated with the transport using at least one of the transport provider device and the transport user device; and

[12.b.v] transmitting, by the shared transport system, a notification to one or more of the transport user device, the transport provider device, and security personnel based on the determined anomalous condition.

Claim 13

The system of claim 12, wherein determining, by a shared transport system, a start of a transport using at least one of the transport provider device and the transport user device comprises:

determining that the transport provider device and the transport user device are within a predetermined proximity using Global Positioning System (GPS) technology enabled at the transport provider device and the transport user device.

Claim 14

The system of claim 12, wherein determining, by a shared transport system, a start of a transport using at least one of the transport provider device and the transport user device comprises:

determining that the transport provider device and the transport user device are within a predetermined proximity using Near Field

Communication (NFC) technology enabled at the transport provider device and the transport user device.

Claim 15

The system of claim 12, wherein determining, by the shared transport system, an anomalous condition associated with the transport using at least one of the transport provider device and the transport user device comprises:

determining the transport is off-route by comparing a location of the transport provider device with the destination or a route.

Claim 16

The system of claim 12, wherein determining, by the shared transport system, an anomalous condition associated with the transport using at least one of the transport provider device and the transport user device comprises:

determining the transport has terminated before reaching the destination.

Claim 17

The system of claim 16, wherein determining the transport has terminated before reaching the destination comprises:

determining, before reaching the destination, that the transport provider device and the transport user device are no longer within a predetermined proximity.

Claim 18

The system of claim 17, wherein the transport provider device and the transport user device are determined to be no longer within the predetermined proximity using Global Positioning System (GPS) technology or Near Field Communication (NFC) technology enabled at the transport provider device and the transport user device.

Claim 19

The system of claim 12, wherein determining, by the shared transport system, an anomalous condition associated with the transport using at least one of the transport provider device and the transport user device comprises:

determining the transport has terminated at a location different from the destination.

Claim 20

[20.pre] At least one non-transitory computer readable medium comprising instructions which, when executed by at least one processor, cause the at least one processor to perform operations for managing anomalous conditions in a shared transport system, the operations comprising:

[20.a] receiving, by the shared transport system, a transport request from a transport user device of a transport user, the transport request including a pick-up location and a destination;

[20.b] transmitting, by the shared transport system, the transport request to a transport provider device of a transport provider;

[20.c] determining, by the shared transport system, a start of a transport using at least one of the transport provider device and the transport user device;

[20.d] determining, by the shared transport system, an anomalous condition associated with the transport using at least one of the transport provider device and the transport user device; and

[20.e] transmitting, by the shared transport system, a notification to one or more of the transport user device, the transport provider device, and security personnel

based on the determined anomalous condition.

CERTIFICATE OF COMPLIANCE

Pursuant to 37 C.F.R. §42.24(d), the undersigned certifies that the foregoing Petition for *Inter Partes* Review of U.S. Patent No. 11,017,668 contains, as measured by the word-processing system used to prepare this paper, 13,983 words. This word count does not include the items excluded by 37 C.F.R. §42.24 as not counting towards the word limit.

Respectfully submitted,

March 12, 2026

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CERTIFICATE OF SERVICE

I hereby certify that on March 12, 2026, I caused a true and correct copy of the foregoing Petition for *Inter Partes* Review of U.S. Patent No. 11,017,668 and supporting exhibits to be served via express mail on the Patent Owner at the following correspondence address of record as listed on Patent Center:

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