

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

IPR2026-00306

Patent No. 10,916,138

**PETITION FOR *INTER PARTES* REVIEW
OF U.S. PATENT NO. 10,916,138**

TABLE OF CONTENTS

I.	INTRODUCTION	1
II.	MANDATORY NOTICES	1
III.	PAYMENT OF FEES	2
IV.	GROUND FOR STANDING.....	2
V.	PRECISE RELIEF REQUESTED AND GROUNDS RAISED.....	2
VI.	LEVEL OF ORDINARY SKILL	3
VII.	OVERVIEW OF THE '138 PATENT	4
VIII.	CLAIM CONSTRUCTION	5
	A. Shared Transport System	8
	B. Transport Provider.....	12
	C. Pick-Up Location / Drop-Off Location.....	13
	D. The Provider Characteristics	14
IX.	DETAILED EXPLANATION OF GROUNDS.....	16
	A. Ground 1: Olmi in View of Gaspard Renders Claims 1-3, 10-12, and 18 Obvious.....	17
	1. Claim 1	17
	2. Claim 2	60
	3. Claim 3	60
	4. Claim 10.....	61
	5. Claim 11	64
	6. Claim 12.....	64
	7. Claim 18.....	64
	B. Ground 2: Olmi in View of Gaspard and Thomas Renders Claims 4 and 13 Obvious	66
	C. Ground 3: Olmi in View of Gaspard and Wolfe Renders Claim 9 Obvious	69
X.	CONCLUSION.....	74
XI.	APPENDIX A (CLAIM LISTING)	75

LIST OF EXHIBITS

EX1001	U.S. Patent No. 10,916,138 (“the ’138 patent”)
EX1002	Declaration of Dr. Petros Ioannou, Ph.D.
EX1003	Curriculum Vitae of Dr. Petros Ioannou, Ph.D.
EX1004	Prosecution History of U.S. Patent App. No. 16/670,220
EX1005	UK Patent Application No. GB2397683A to Olmi (“Olmi”)
EX1006	U.S. Patent No. 6,411,897 to Gaspard (“Gaspard”)
EX1007	U.S. Patent Application Publication No. 2002/0123917 to Wolfe (“Wolfe”)
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)
EX1009	RESERVED
EX1010	U.S. Patent Application Publication No. 2003/0040944 to Hileman (“Hileman”)
EX1011- EX1012	RESERVED
EX1013	U.S. Patent No. 7,366,522 to Thomas (“Thomas”)
EX1014	RESERVED
EX1015	Prosecution History of U.S. Patent No. 7,840,427
EX1016 – EX1029	RESERVED

EX1030	U.S. Patent Application Publication No. 2001/0037174 to Dickerson (“Dickerson”)
EX1031	U.S. Patent Application Publication No. 2003/0036935 to Nel (“Nel”)
EX1032	International Patent Publication No. WO 2005/104059 A2 to Bhushan (“Bhushan”)
EX1033	U.S. Patent No. 5,799,263 to Culbertson (“Culbertson”)
EX1034	“A distributed geographic information system for the daily car pooling problem,” Roberto Wolfler Calvo et al. <i>Computers & Operations Research</i> 31 (2004) 2263-2278 (“Calvo”)
EX1035	U.S. Patent No. 10,520,325 to Lewinson (“Lewinson”)
EX1036	Prosecution History of European Patent App. No. EP08725447A

I. INTRODUCTION

Uber Technologies, Inc. and Uber Freight US LLC (“Petitioners”) request *inter partes* review of claims 1-4, 9-13, and 18 (“the challenged claims”) of U.S. Patent No. 10,916,138 (“the ’138 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 ’138 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, 11,017,668, and 10,741,071, 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), (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 '138 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 1-3, 10-12, and 18 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 U.S. Patent No. 6,411,897 to Gaspard (“Gaspard”) (EX1006).

Ground 2: Claims 4 and 13 are unpatentable under pre-AIA 35 U.S.C. § 103 as being obvious over Olmi in view of Gaspard and U.S. Patent No. 7,366,522 to Thomas (“Thomas”) (EX1013).

Ground 3: Claim 9 is unpatentable under pre-AIA 35 U.S.C. § 103 as being obvious over Olmi in view of Gaspard and U.S. Patent Application Publication No. 2002/0123917 to Wolfe (“Wolfe”) (EX1007).

For purposes of this proceeding only, Petitioners assume that the earliest effective filing date of the ’138 patent is February 12, 2007, the filing date of U.S. Provisional Application No. 60/900,808, to which the ’138 patent claims priority, without conceding the ’138 patent is entitled to such date. (EX1004.)

Olmi published on July 28, 2004, and thus qualifies as prior art at least under pre-AIA 35 U.S.C. §§ 102(a) and (b).

Gaspard issued on June 25, 2002 from an application filed on December 20, 2001, and Wolfe published on September 5, 2002 from an application filed on March 2, 2001. Gaspard and Wolfe thus qualify as prior art at least under pre-AIA 35 U.S.C. §§ 102(a), (b), and (e).

Thomas issued on April 29, 2008 from an application filed on February 28, 2001, and thus qualifies as prior art at least under pre-AIA 35 U.S.C. §§ 102(e).

VI. LEVEL OF ORDINARY SKILL

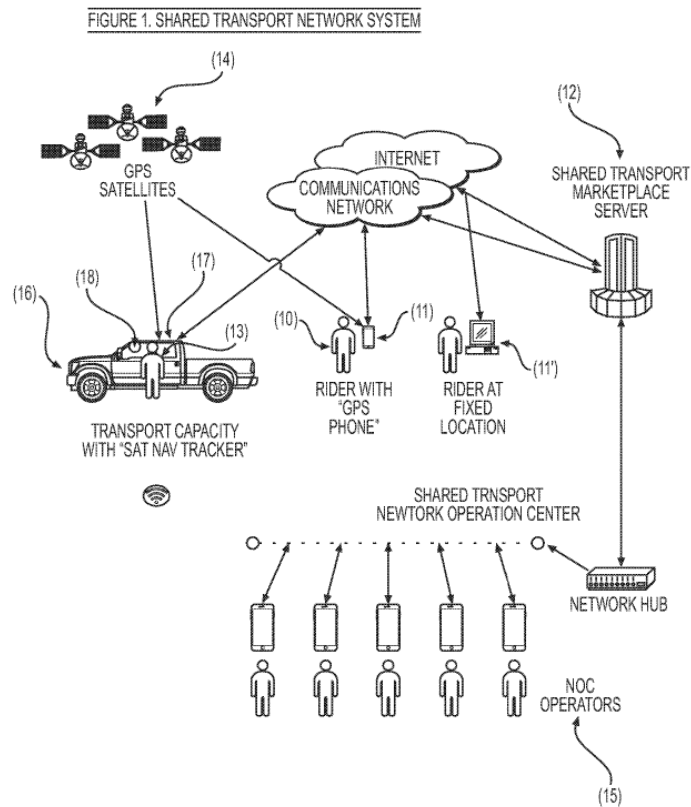
A person of ordinary skill in the art at the time of the alleged invention of the ’138 patent (“POSITA”) would have had at least a bachelor’s degree in computer science, computer engineering, software engineering, electrical engineering, or the equivalent and at least two years of experience in technologies 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 '138 PATENT

The '138 patent “relates to a ground transportation network” that, e.g., “match[es]” individuals with transport capacity on a supply and demand basis. (EX1001, 1:23-26; EX1002, ¶¶25-29.) The '138 patent discusses its “Shared Transport System” (or marketplace) 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 for the transport of persons. (*Id.*, 3:51-55; *see also id.*, 3:1-5:19, FIG. 1.) The patent also states, without detail, that a “similar Shared Transport Marketplace” could “be used to transport goods and merchandise,” as the system would only need to be modified so that “the Transport User send[s] packages” instead of people. (*Id.*, 21:17-22.)

¹ Petitioners submit the declaration of Dr. Petros Ioannou (EX1002), an expert in the field of the '138 patent. (EX1002 ¶¶1-15; EX1003.)



(*Id.*, FIG. 1.)

As demonstrated below, the features described and claimed in the '138 patent were known in the prior art before the earliest effective filing date of the '138 patent. (§IX; EX1010, EX1030-EX1035; EX1002, ¶¶19-24, 30.)

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 '138 patent should be construed as indicated in the table below. These constructions

are consistent with Petitioners’ claim construction positions taken in the Carma Litigation. Petitioners also indicate below those claim terms that PO has proposed constructions for in the Carma Litigation. To the extent Petitioners’ or PO’s proposed constructions are found not to apply, Petitioners also explain in Section IX how the ’138 patent claims are disclosed and/or rendered obvious if no express constructions are applied. (EX1002, ¶¶31-32.)

’138 Patent Term	Construction
“shared transport system” (all claims)	“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.”
“transport provider” (all claims)	“A driver offering transport along an existing route defined before demand for transport and independently of a transport user’s door-to-door trip.”

'138 Patent Term	Construction
<p>“pick-up location” / “drop-off location” (all claims)</p>	<p>“A node along an existing route defined before demand for transport and independently of a transport user’s door-to-door trip.”</p>
<p>the provider characteristics including a current location or planned route and an available space or capacity of the transport provider, the provider characteristics being received from a transport provider device of the transport provider” (all claims)</p>	<p>Petitioners: “The provider characteristics including (1) a current location or planned route, and (2) an available space or capacity of the transport provider, each received from the transport provider device of the transport provider”</p> <p>Patent Owner: “Some of the provider characteristics are provided by the transport provider device of the transport provider”</p>

A. Shared Transport System

A POSITA would understand that a “shared transport system,”² as used in the ’138 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, 3:14-44). The specification further confirms that the supply of transportation services comes from providers within the shared transport system. (*Id.*, 3:9-12 (“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

² Claim language is underlined throughout this Petition.

express admissions made by PO during prosecution of the '427 patent, which is an indirect parent of the '138 patent and shares the same specification as the '138 patent. For example, Figure 6a shows a flowchart of “the experiences of a Driver in using the network system.” (*Id.*, 22:28-31.) 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.*, 16:46-48.) 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.*, 16:48-50.) But only one of those vehicles—1403—also has registered a route going through 1409, the requested arrival location of transport user 1401. (*Id.*, 16:50-56.) “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, 16:65-17:3.) 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.*) 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.” (*Id.*, 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 ’138 patents. Applicant described *dynamic systems that tracked and*

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 ’138 patent, the applicant added the “shared transport system” limitation to capture this concept. (*Compare, e.g., ’427 patent at claim 1, with ’138 patent at claim 1.*)

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).

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. Transport Provider

A POSITA would understand that a “transport provider,” as used in the ’138 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, 16:41-65.) Accordingly, a POSITA would recognize that a transport provider would only offer transport along his existing route defined before any demand for transport.

C. Pick-Up Location / Drop-Off Location

A POSITA would understand that a “pick-up location” and a “drop-off location,” as used in the ’138 patent, each refer 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” and “drop-off 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, 14:37-41.) The specification repeats this concept and further confirms that nodes are established prior to any particular trip. (*Id.*, 14:66-15:4 (“[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 pick-up and drop-off locations as 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 pick-up and drop-off locations could each 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.

D. The Provider Characteristics

A POSITA would understand that “the provider characteristics including a current location or planned route and an available space or capacity of the transport provider, the provider characteristics being received from a transport provider device of the transport provider,” as used in the ’138 patent, refers to “the provider

characteristics including (1) a current location or planned route, and (2) an available space or capacity of the transport provider, each received from the transport provider device of the transport provider.”

That the provider characteristics includes (1) a current location or planned route, **and** (2) an available space or capacity of the transport provider is a plain reading of the claim language. First, the claims read “a *current location or planned route* and an *available space or capacity* of the transport provider,” which contains two disjunctive lists. The initial list (“**a** current location or planned route”) contains two items connected with the conjunction “or.” The subsequent list (“**an** available space or capacity”) similarly contains two items connected with the conjunction “or.” These lists must be separate because the first list is preceded by “a” and the second list is preceded by “an.” “A common treatise on grammar teaches that ‘an article of a preposition applying to all the members of the series must either be used only before the first term or else be repeated before each term.’” *SuperGuide Corp. v. DirecTV Enters.*, 358 F.3d 870, 886 (Fed. Cir. 2004) (quoting William Strunk, Jr. & E.B. White, *The Elements of Style* 27 (4th ed. 2000)). Thus, (1) “a current location or planned route” and (2) “an available space or capacity” must be two items in their own conjunctive series, each preceded by the article “a/an” and connected with the word “and.”

The claim requires that “the provider characteristics [are] received from a transport provider device of the transport provider.” The provider characteristics “includ[e] a current location or planned route and an available space or capacity of the transport provider.” Thus, the remainder of the construction (that each of (1) “a current location or planned route” *and* (2) “an available space or capacity” are received from the transport provider device of the transport provider) follows naturally from the claim language.

IX. DETAILED EXPLANATION OF GROUNDS

Grounds 1-3 rely on Olmi as the primary reference. Although Olmi was not considered during prosecution of the '138 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 1-3.

A. Ground 1: Olmi in View of Gaspard Renders Claims 1-3, 10-12, and 18 Obvious

1. Claim 1⁴

i) [1.pre]

To the extent the preamble of claim 1 is limiting, Olmi in view of Gaspard discloses/suggests the claim elements therein. (EX1002, ¶¶56-82; *see also id.*, ¶¶33-48.)⁵

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 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

Olmi discloses a “method of transporting” travellers “using a shared transport system.” (*Id.*, ¶58.) For example, 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.” (EX1005, Abstract.)

Olmi discloses a carpooling configuration that matches prospective passengers with carpool drivers having compatible itineraries involving fixed journeys. (*Id.*, 8; EX1002, ¶59.)⁶ Both carpool drivers with personal fixed itineraries and potential passengers are considered travellers, i.e., a person with a journey itinerary. (*Id.*, 11; EX1002, ¶60.) An itinerary is a data structure that specifies a travel plan (e.g., embarkation and disembarkation points). (EX1005, 11-12, 32-35.) Olmi also explains that a vehicle can have a vehicle itinerary, which is a data structure that specifies the travel plan of the vehicle and comprises a “set of prescribed geographic points or addresses to which the vehicle must navigate in a

obvious to implement in the carpooling configuration. (EX1005, 8, 30, 40, 66, 70, 78; EX1002, ¶56.)

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

prescribed order” and may include a “specification of the road route.” (*Id.*, 11-12; EX1002, ¶61.)

As discussed for limitation [1.a], passengers submit journey requests defining their predetermined personal itineraries to the central computer system. (EX1005, 12, 15, 18, 32; §IX.A.1.ii.) As further discussed for limitation [1.b], a carpool driver also submits their intended personal itinerary, which forms part of the itinerary commitments of the driver’s vehicle. (EX1005, 35; §IX.A.1.iii; EX1002, ¶62.) Olmi’s system can then perform 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 (§§5.5-5.6), 21-27 (§5.7), 35-39; §IX.A.1.iii; EX1002, ¶63.)

Olmi’s Figure 4 (below) illustrates the “central controlling computer system 15” having a “data transmission system 16” for communicating with the “communicator devices 17 and 18 of the prospective travellers 19” and the “communicator devices 20 of the transit vehicles 21.” (EX1005, 29; *see also id.*, 31.)

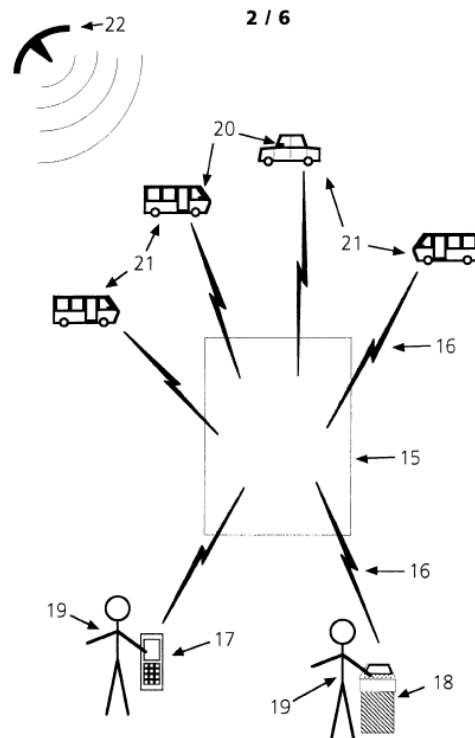


Figure 4

(*Id.*, FIG. 4.) The “central controlling computer system 15 orchestrates all transit vehicles 21 and travellers 19.” (*Id.*, 31.) Each passenger and driver has a “communicator device” that allows them to “interact[] with this transportation invention.” (*Id.*, 14.) “Examples of communicator devices include the telephone, the cellular telephone, the wireless PDA (Personal Digital Assistant), and an Internet-connected personal computer.” (*Id.*, 14; EX1002, ¶64.)

Olmi’s central controlling computer system is itself a “data-processing system” that may include “data-processing installations” or “computer processors.” (EX1005, 13.) And “the data transmitted over the data transmission system 16 will

consist of such information as journey requests detailing the itinerary requirements of travellers” and “the controlling computer system’s responses.” (*Id.*, 30.) Olmi’s transportation sharing features (e.g., for matching drivers and passengers) may be enabled by using “electronic positioning system” such as “GPS” in the vehicle and passenger. (*Id.*, 31.) Olmi explains that the Figure 4 system is “capable of running the invention’s two main transport modes,” including the carpooling mode. (*Id.*; EX1002, ¶65.)

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..., 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, ¶66.)

Accordingly, Olmi discloses a “method of transporting” passengers “using a shared transport system,” including under Petitioners’ proposed construction of “shared transport system.” (EX1002, ¶67.) For example, as discussed above, Olmi’s disclosed system comprises:

- networked computer processors (“[a] server system”) (EX1005, 13, 29-31);
- that match potential passengers with drivers (“that matches transport users with transport providers”) (*id.*, Abstract, 15-18, 35-38);
- where:
 - each driver is traveling a predetermined route, like a carpool driver’s fixed personal itinerary or public transport driver’s fixed vehicle itinerary (“traveling an existing route”) (*id.*, 8, 11-12, 35, 70);
 - each driver submitted their route to the central computer system before being matched with a potential passenger (“defined before demand for transport”) (*id.*, 32-36, 70); and
 - the driver’s route was established independently of any potential passenger’s submitted journey itinerary (“independently of a transport user’s door-to-door trip”) (*id.*, 11-12, 35-36, 70).

(§§VIII, IX.A.1.iii (discussing Petitioners’ proposed construction of “transport provider”); EX1002, ¶68.)⁷

⁷ In the Carma Litigation, PO disagrees with Petitioners’ proposed construction of the claimed “shared transport system.” (See EX1008, 10.) However, Olmi

As discussed above, Olmi discloses a method of transporting travellers using a shared transport system. (EX1005, 2-7; §IX.A.1.i.) ***In addition to transporting travellers, Olmi also suggests that its shared transport method/system can be used to transport goods.*** (EX1002, ¶69.) For example, Olmi’s shared transport system considers not only the number of passengers travelling, but also the amount of “luggage” a passenger is carrying “so that the controlling computer system can supply a car pool vehicle with sufficient space.” (EX1005, 85; *id.*, 7, 12, 16, 79.) Olmi goes on to explain that certain “vehicles will contain enough space to accommodate passengers carrying a suitcase or several bags of supermarket shopping,” (*id.*, 85), or “large or heavy items,” (*id.*, 52-53), and that there “should be no extra charge for carrying goods or luggage” (*id.*, 85). (EX1002, ¶70.)

Olmi therefore discloses not only a method/system for transporting travellers, it also discloses a method/system for transporting goods carried by travellers. Beyond accommodating the transportation of passengers with goods, however, Olmi does not explicitly disclose a “method of transporting a good using a shared transport

(including as modified herein) discloses a “shared transport system” where no construction is required and under any reasonable interpretation of the term, for the same reasons explained in this ground. (EX1002, ¶68.)

system,” but a POSITA would have found it obvious to implement such a feature in a system/method like that described in Olmi in view of Gaspard. (EX1002, ¶71.)

Like Olmi, Gaspard relates to a method/system for arranging transportation through a central computer system. (Id., ¶72.) Gaspard expressly discloses that such a system can transport both “freight and passengers” (“goods”). (EX1006, Abstract.) For example, Gaspard describes “scheduling a vehicle in real-time to transport both freight and passengers simultaneously” through a host system that “receives transportation requests.” (Id., 3:39-43.) The transportation requests described by Gaspard include “requests to pick up and deliver freight.” (Id., 3:44-47.)

Similar to Olmi’s method, Gaspard’s method is implemented through “a communications system” shown in Figure 1 (below). (*Id.*, 4:48-49, FIG. 1.) Gaspard explains that “[u]sers access a network 110 from terminals 120 (e.g., P1, P2,...Pi indicating passenger terminals and F1, F2,...Fi indicating freight terminals).” (*Id.*, 4:50-52, FIG. 1.) Gaspard’s “[t]erminals 120 are interconnected...over the network 110 to a host 140.” (*Id.*, 4:56-61, FIG. 1.)

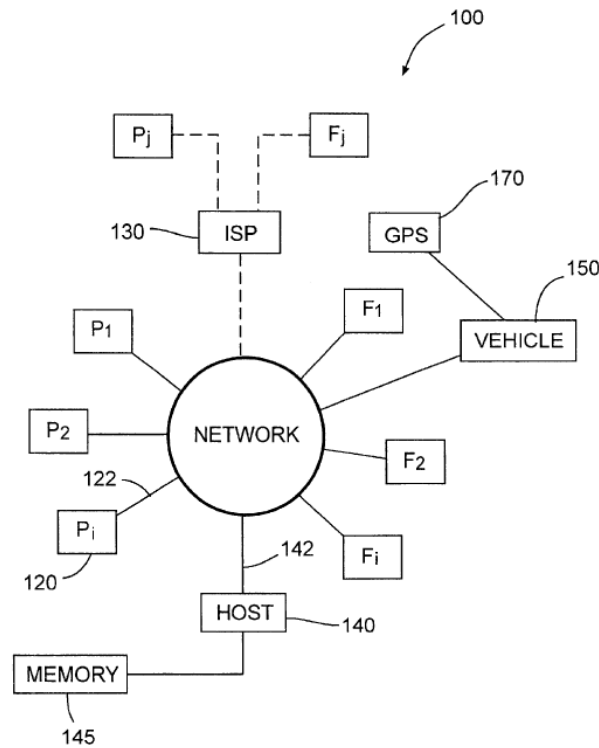


Fig. 1

(*Id.*, FIG. 1; EX1002, ¶¶73-74.)

Similar to Olmi’s communication system, Gaspard’s communication system, as shown in Figure 1 (above), is “conventional...and the terminals 120 and the host 140 are personal computers...or other Internet appliances (e.g., digital handheld telephones with Internet access).” (EX1006, 5:64-6:3; *see also id.*, 6:19-21, FIG. 1.) Gaspard explains users can “access a website stored at the host (e.g., in memory 145) from the terminals 120...over the Internet.” (*Id.*, 6:3-7, FIG. 1; EX1002, ¶75.)

Thus, Gaspard and Olmi are similar, as each discloses a transportation ecosystem for arranging transportation via a central system. (EX1002, ¶76.) A

POSITA would have therefore had good reason to consider the teachings of Gaspard when implementing a system/method like that disclosed in Olmi, including Gaspard’s teachings relating to the method/system for transporting freight (“method of transporting a good”). (*Id.*, ¶77.) For example, referring to Figure 2 (below), Gaspard describes a scheduling method where “[t]he host 140 receives transportation requests from the terminals 120,” including requests by “freight Shippers to pick up and deliver freight from one location to another location.” (EX1006, 6:50-53; *see also id.*, 6:67-7:5, FIG. 2.) Gaspard explains that “the operator of vehicle 150 can require a request to transport freight to be specific, describing the size, weight and contents of a delivery.” (*Id.*, 7:19-26; EX1002, ¶78.)

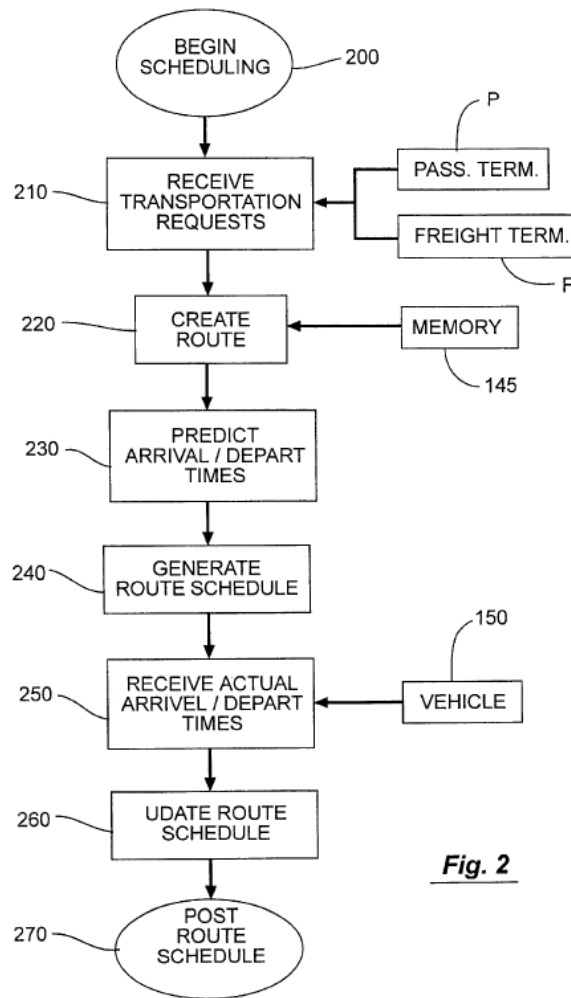


Fig. 2

A POSITA would have had good reason, and found it obvious, to include features similar to those disclosed by Gaspard when implementing the Olmi system/method to provide a transport system that accommodates goods. (EX1002, ¶79.) Indeed, Olmi acknowledges that its method/system can accommodate the transportation of goods along with a passenger, given the “journey request...may also include...the details of any luggage carried by the travellers.” (EX1005, 12, 16, 86.) Additionally, Olmi explains that cars are “unbeatable” for the “carrying [of]

goods or luggage” (*id.*, 4), because “existing modes of public transport” make “carrying luggage or goods...difficult” (*id.*, 7).

Therefore, based on Gaspard’s teachings, as discussed above, a POSITA would have appreciated the benefits of implementing a method/system like that disclosed in Olmi to further accommodate the transportation of goods (“transporting a good”) in addition to or separately from passengers. (EX1002, ¶80.) For example, as a POSITA would have recognized, such a method/system would have increased revenue for drivers and increased shipping options and volume for shippers. (*Id.*) As Gaspard explains, “[b]y scheduling the vehicle to transport both passengers and freight, the profitability of existing routes increases” for the vehicle drivers. (EX1006, 3: 12-14.) Additionally, Gaspard explains that its scheduling method/system “allows for new unserved or underserved passenger and freight routes to be added” and accommodates rapidly changing passenger and freight transport needs. (*Id.*, 3:33-37.) Such a method/system, as Gaspard explains, achieves the “goal...to maximize passenger seat usage, ship as much as possible freight, and to receive a maximum profitability figure.” (*Id.*, 11: 62-65.)

A POSITA would have also had a reasonable expectation of success in implementing such a combination, especially given it would have involved the application of known technologies (e.g., known shared transport systems for transporting passengers and goods, as described in Olmi and Gaspard) according to

known software and hardware techniques (e.g., known scheduling, server, and communications software, like described in Olmi and Gaspard). (EX1002, ¶81.) For example, both Olmi and Gaspard rely on conventional software and hardware, which would have been well known to a POSITA and enabled implementation of the combination with a reasonable expectation of success. (*See, e.g.*, EX1005, 13-14; EX1006, 7:53-8:48; EX1002, ¶82.) Such a combination would have predictably resulted in an Olmi-Gaspard method/system having a shared transport system (e.g., in a carpooling or public transport configuration) configured to allow for the transportation of one or both of passengers and goods via a central computer system and mobile devices. (*Id.*) *KSR Int'l. Co. v. Teleflex Inc.*, 550 U.S. 398, 416 (2007).

ii) [1.a]

The Olmi-Gaspard combination discloses this limitation. (EX1002, ¶¶83-96.)

First, as explained above for limitation [1.pre] (§IX.A.1.i), the Olmi-Gaspard method/system discloses a central computer system (“share[d] transport system”) receiving a journey request (“a first transport request”) from a potential passenger’s communicator device (“from a first transport user’s device”). As discussed for limitation [1.pre] (§IX.A.1.i) and below, in the Olmi-Gaspard method/system, the journey request includes criteria, such as pick-up and drop-off locations (“wherein the first transport request includes a first pick-up location, a first drop-off location”). (EX1002, ¶84.)

For example, in Olmi, the journey request, as shown in Figure 8 below, includes the “specification of the itinerary of the traveller,” “includ[ing] the current location or desired pick-up point” (“wherein the first transport request includes a first pick-up location”). (EX1005, 32; *see also id.*, 29, 43; EX1002, ¶85.) Olmi explains that “this invention will operate using pre-defined passenger pick-up (and optionally set down) points, each with a unique pick-up point reference code.” (EX1005, 17.)

As also shown in Figure 8 below, the journey request includes the “traveller’s destination” (“a first drop-off location”). (*Id.*, 11 (defining “traveller or passenger itinerary” to include “the traveller’s embarkation point and the traveller’s destination”), 12 (“journey request is defined as a data structure or a computer data format which includes a specification of a traveller or passenger itinerary”), 16, 32; EX1002, ¶86.)

Figure 8 below further shows that the journey request includes the “number of travellers to be conveyed on the said itinerary,” (EX1005, 32), as well as any “details of any luggage carried by the travellers,” (*id.*, 12).

<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 and annotated); EX1002, ¶87.)

Thus, Olmi discloses “receiving, by the shared transport system, a first transport request from a first transport user device,” which includes a “first pick-up location” and a “first drop-off location.” (EX1002, ¶88.)

The above-discussed teachings of pick-up and drop-off points meet Petitioners’ proposed constructions of a “pick-up location” and a “drop-off location.” (*Id.*, ¶89.) As discussed above for limitation [1.pre] (§IX.A.1.i), a passenger’s journey request includes the passenger’s itinerary, which includes the desired pick-up and drop-off points. (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 and drop-off points, is a “node” along a route. (EX1002, ¶89.)

Moreover, these pick-up/embarkation and drop off/disembarkation points may be along a carpool or public transport driver's predetermined/fixed route. (*Id.*, ¶89.) 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 and drop-off points may be nodes along a predetermined route of a carpool driver. (EX1002, ¶89.) Similarly, in the 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, ¶89.) Accordingly, Olmi discloses that each of a passenger's pick-up and drop-off points may be "[a] node along an existing route defined before demand for transport and independently of a transport user's door-to-door trip," as required by Petitioners' proposed construction.⁸ (EX1002, ¶90.)

⁸ In the Carma Litigation, PO disagrees with Petitioners' proposed construction of the claimed "pick-up location" and "drop-off location." (*See* EX1008, 10.) However, Olmi (including as modified herein) discloses these terms where no

Second, as described above in limitation [1.pre], while Olmi contemplates the transportation of passengers with goods, it does not explicitly disclose a method/system for transporting goods. It therefore does not explicitly disclose that the journey request (the claimed “first transport request”) is “for delivery of a first good” or includes “a first needed space or capacity for the first good.” A POSITA, however, would have had good reason and found it obvious to implement such features in the Olmi system in view of Gaspard for the reasons discussed below and above for [1.pre]. (EX1002, ¶91.)

Gaspard discloses that its freight transportation request from a terminal (“a first transport request from a first transport user device for delivery of a first good”) includes a volume and/or weight of the freight to be transported (“a first needed space or capacity for the first good”). (EX1006, 12:23-26 (“the freight transportation requests include reservations for cubic space”); EX1002, ¶92.) For example, as discussed above for [1.pre], Gaspard describes an exemplary “request” (“a first transport request”) to “pick up and deliver freight” having a “specified” “volume” and/or “weight” (“a first needed space or capacity for the first good”) from a

construction is required and under any reasonable interpretation of the terms, for the same reasons explained in this ground. (EX1002, ¶90; §IX.A.1.i.)

“warehouse in Town A” (“a first pick-up location”) and to a “store in Town B” (“a first drop-off location”). (EX1006, 6:65-7:9; *see also id.*, 7:19-31; EX1002, ¶92.)

Accordingly, in the Olmi-Gaspard method/system, it would have been obvious to implement Olmi’s journey request such that it is “for delivery of a first good” and includes “a first needed space or capacity for the first good,” for reasons similar to those discussed above for [1.pre]. (EX1002, ¶93.) For example, given Olmi and Gaspard describe similar features and address similar problems, a POSITA would have looked to Gaspard when implementing Olmi’s method/system. (*Id.*) Additionally, based on Gaspard’s teachings, a POSITA would have had good reason to implement the combined system/method to provide a transport system that accommodates goods. (*Id.*)

In implementing such a combination, a POSITA would have recognized the need to include the required space or capacity of the good to be transported, to ensure sufficient space is available. (*Id.*, ¶94.) This is consistent with the teachings of both Olmi and Gaspard. (*Id.*) For example, Olmi teaches that its journey request must specify both the number of passengers and any luggage requirements to locate a driver that can accommodate the request. (*See, e.g.*, EX1005, 16 (“the journey request will allow travellers to specify their luggage requirements, so that travellers with luggage can be found a suitable transit vehicle”).) Similarly, in Gaspard, the request must specify the freight requirements (e.g., size, volume, weight) to locate a

driver that can accommodate the freight. (EX1006, 7:35-39, 11:66-12:4 (“each new transportation request is evaluated” for “available freight requirements”).) Indeed, such information about the good is required for the method/system to function properly and/or efficiently. (EX1002, ¶95.) For example, if the request did not specify the freight requirements, a driver that cannot accommodate the freight may be selected. (*Id.*) This would result, for example, in both lost revenue for the driver and freight shipment delays, contrary to the goals of Gaspard. (EX1006, 11:63-65 (“The goal is to maximize passenger seat usage, ship as much as possible freight, and to receive a maximum profitability figure.”).)

A POSITA would have had a reasonable expectation of success implementing such a combination, which would have required nothing more than a combination of known prior art elements using known programming methods without changing their respective functions to achieve a predictable result. (EX1002, ¶96.) *See KSR*, 550 U.S. at 415-21. For example, while Olmi explains that a journey request for a traveller may include details of any luggage carried by the traveller, it does not explicitly disclose a journey request for transporting goods and that includes the space or capacity requirements for transporting goods. (EX1002, ¶96). Gaspard, however, does provide disclosure of a request to transport freight that includes space or capacity requirements, and a POSITA would have recognized that it would have taken nothing more than straightforward design and programming modifications to

incorporate such freight information in a journey request, which is a simple data structure. (EX1005, 12; EX1002, ¶96.)

iii) [1.b]

The Olmi-Gaspard combination discloses/suggests this limitation. (EX1002, ¶¶97-107.)

For example, Olmi discloses that the central computer system (“shared transport system”) identifies a potential driver (“identifying, by the shared transport system, a transport provider”) having characteristics that comply with the journey request’s characteristics. (EX1005, 15, 18 (“when a prospective traveller submits a journey request on his communicator device, the controlling computer system will marshal a fast response that has a transit vehicle arrive to collect the traveller and convey him along his specified itinerary”), 32; EX1002, ¶98.)

Olmi also discloses that the driver is a “transport provider” under Petitioners’ proposed construction because, 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 potential passenger’s submitted journey

itinerary (“independently of a transport user’s door-to-door trip”).⁹ (*See* EX1005, 8, 11-12, 32-36, 70 (describing “fixed-route transport vehicles” and confirming a “passenger’s journey request is compatible with the itinerary of the transport vehicle”); Sections VIII, IX.A.1.i; EX1002, ¶99.)

The Olmi-Gaspard combination discloses that the driver’s characteristics are received from a vehicle driver’s communicator device (“the provider characteristics being received from a transport provider device of the transport provider”), and include the proximity of the vehicle to the passenger, the vehicle’s current or planned route, capacity information, and the type of transit vehicle (“the provider characteristics including a current location or planned route and an available space or capacity of the transport provider”). (EX1002, ¶100.) Accordingly, the Olmi-Gaspard combination satisfy these limitations under both Petitioners’ and PO’s

⁹ In the Carma Litigation, PO disagrees with Petitioners’ proposed construction of the claimed “transport provider.” (*See* EX1008, 10.) 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, ¶99; §IX.A.1.i.)

proposed constructions, given all of these characteristics are received from the vehicle driver's communicator device.¹⁰ (§VIII; EX1002, ¶100.)

For example, Olmi explains that each driver's transit vehicle has a "transit vehicle record" ("the provider characteristics") maintained in "a transit vehicle current itineraries database." (EX1005, 35; EX1002, ¶101.) The record includes the "current geographic position of the transit vehicle" ("a current location ... of the transport provider"), the "current vehicle itinerary of the transit vehicle" ("planned route ... of the transport provider"), and the "passenger capacity of the transit vehicle." (EX1005, 34; EX1002, ¶101.) Olmi also accounts for a traveller's "luggage" when finding "a suitable transit vehicle." (EX1005, 16.)

Such records ("provider characteristics") are "received from a transport provider device of the transport provider." (EX1002, ¶102.) For example, Olmi explains that "[w]hen 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

¹⁰ In the Carma Litigation, PO disagrees with Petitioners' proposed construction of the claimed "provider characteristics..." (See EX1008, 7-8, 14-15.) However, the Olmi-Gaspard combination discloses this term where no construction is required and under any reasonable interpretation of the term, for the same reasons explained in this ground. (EX1002, ¶103.)

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.” (EX1005, 35.)

Olmi’s method/system identifies a transport provider “based on comparing provider characteristics of the transport provider with the first transport request.” (EX1002, ¶104.) For example, Olmi describes an “intelligent grouping module,” which tracks “current vehicle itinerary data fields.” (EX1005, 34-35.) The intelligent grouping module “constantly scans the journey requests database for journey request records.” (*Id.*, 35.) Once the intelligent grouping module identifies a journey request, the module “copies the data from this journey request record with the objective of intelligently grouping the traveller or travellers 19 to which the record relates into a transit vehicle or vehicles” and matches a traveller to a driver based on “current geographic position of the transit vehicle,” whether “[t]he transit vehicle has a sufficient quantity of available passenger places for the number of travellers specified in this journey request,” and “the type” of transit vehicle. (*Id.*, 35-36; *see also id.*, 9.) Thus, to identify a driver, Olmi performs matching (“comparing”) between the record of a transit vehicle (“provider characteristics of the transport provider”) and the journey request record (“with the first transport request”). (EX1002, ¶104.)

As explained above in [1.pre] and [1.a], a POSITA would have had good reason to implement the Olmi-Gaspard method/system such that it can transport goods. In this method/system, as discussed with respect to [1.a], a journey request would indicate any requirements for the good (e.g., volume and/or weight) (the “transport request” would have included “needed space or capacity for the first good”) to the central computer system. (*Id.*, ¶105.) In such a system, a POSITA would have had good reason, and found it obvious, to implement the transit vehicle record (“provider characteristics of the transport provider” and “received from a transport provider device”) to include not only the information described in Olmi, but also capacity for goods like described in Gaspard (“an available space or capacity of the transport provider”), such that Olmi’s grouping module can properly match requests containing requirements for goods with vehicles having capacity to transport the goods (“based on comparing provider characteristics of the transport provider with the first transport request”). (*Id.*) Indeed, Olmi already contemplates such an implementation by accounting for passenger luggage or other goods. (*See, e.g.*, EX1005, 16 (“the journey request will allow travellers to specify their luggage requirements, so that travellers with luggage can be found a suitable transit vehicle”).) Similarly, in Gaspard, when evaluating a request to find a driver, the method/system examines the freight requirements to find a suitable driver. (EX1006, 7:35-39, 11:17-22 (“freight requirements for a freight transportation

request”), 11:66-12:4 (“each new transportation request is evaluated” for “available freight requirements”).)

For reasons similar to those discussed above for claim elements [1.pre] and [1.a], a POSITA would have had a reasonable expectation of success implementing such a combination of Olmi and Gaspard, which describe similar transportation methods and systems. (EX1002, ¶106.) Indeed, the combination would have required nothing more than a combination of known prior art elements (e.g., a method/system for transporting travellers having luggage (like in Olmi) and a method/system for transporting passengers and freight (like in Gaspard)) using known programming methods (e.g., implementing data structures to include information about freight capacity and requirements and matching based on such characteristics) without changing their respective functions to achieve a predictable result. (*Id.*, ¶¶106-107.) *See KSR*, 550 U.S. at 415-21.

iv) [1.c]

The Olmi-Gaspard combination discloses/suggests this limitation. (EX1002, ¶¶108-111.)

For example, as discussed above for claim elements [1.b], the Olmi-Gaspard method/system performs intelligent grouping processes that match vehicles/drivers having a predetermined vehicle journey with a request to transport passengers and/or goods and facilitates the transportation of the passengers/goods along the vehicle’s

journey route. (EX1005, 15-20 (§§5.5-5.6), 21-27 (§5.7), 35-39; §IX.A.1.iii.)

Related to this process, Olmi describes its central computer system (“shared transport system”) sending journey requests to devices of potential drivers (“sending...the first transport request to the transport provider device”).

(EX1002, ¶109.) For example, “when a passenger makes a journey request, the controlling computer system sends this request to all car pool vehicles that have itinerary commitments that are compatible to the itinerary of the passenger.”

(EX1005, 45; *see also id.*, 31, 43-44.)

As explained above in [1.pre]-[1.b], a POSITA would have had good reason to implement the Olmi-Gaspard method/system such that it can transport goods. As discussed with respect to [1.b], the grouping module matches requests containing freight requirements with vehicles having capacity to transport the freight. In such a method/system, a POSITA would have had good reason, and found it obvious, to send the journey request to the matching vehicle(s) that can accommodate the freight requirements, consistent with teachings in both Olmi (discussed above) and Gaspard relating to sending such information to the vehicle(s). (EX1005, 43-45; EX1006, (“the host 140 transmits the generated route schedule to the vehicle 150”); EX1002, ¶110.)

For reasons similar to those discussed above for claim elements [1.pre]-[1.b], a POSITA would have had a reasonable expectation of success implementing such

a combination of Olmi and Gaspard, which describe similar transportation methods and systems. (EX1002, ¶111.) Indeed, the combination would have required nothing more than a combination of known prior art elements (e.g., a method/system for transporting travellers having luggage (like in Olmi) and a method/system for transporting passengers and freight (like in Gaspard)) using known programming methods (e.g., sending journey requests to vehicle devices, as described in both Olmi and Gaspard) without changing their respective functions to achieve a predictable result. (*Id.*) See *KSR*, 550 U.S. at 415-21.

v) [1.d]

The Olmi-Gaspard combination discloses/suggests this limitation. (EX1002, ¶¶112-116.)

For example, Olmi discloses “that the transport provider has accepted the first transport request” because, as explained in Olmi, “[a]s soon as the passenger selects a car pool vehicle from the list, the controlling computer system will send a message to that vehicle’s communicator device, requesting the driver to convey this passenger.” (EX1005, 43; EX1002, ¶113.) The driver can either “accept this journey request by pressing the appropriate key or button on his communicator device,” or if the driver “does not respond to the request within a short time, the controlling computer system assumes that the driver has declined the request.” (EX1005, 43.)

As explained in Olmi, “once the passenger finds a car pool driver who accepts his journey request” (“upon determining that the transport provider has accepted the first transport request”), the “street navigation module in the controlling computer system then proceeds to direct the vehicle driver along this route by means of real-time electronic street navigation instructions exhibited on his communicator device” (“sending, by the shared transport system, first transport instructions to the transport provider device”). (*Id.*, 44; EX1002, ¶114.) These “instructions will be similar to those given by existing in-car satellite navigation systems.” (EX1005, 44.) This way, the “computer system can guide the vehicle driver to the waiting prospective passenger with pinpoint precision.” (*Id.*)

As explained above in [1.pre]-[1.c], a POSITA would have had good reason to implement the Olmi-Gaspard method/system such that it can transport goods. In this method/system, as discussed with respect to [1.c], the computer system sends the journey request to the matching vehicle(s) that can accommodate the freight requirements. In such a method/system, a POSITA would have had good reason, and found it obvious, to send navigation instructions to a vehicle once the vehicle accepts the journey request to transport goods, consistent with the teachings in both Olmi (as discussed above) and Gaspard relating to sending such instructions. (EX1005, 44; EX1006, 8:1-10 (the host provides information to the vehicle, including “directions for the driver of the vehicle”); EX1002, ¶115.) This way, the

vehicle can quickly and easily navigate to the pick-up location of the freight. (EX1002, ¶115.)

For reasons similar to those discussed above for claim elements [1.pre]-[1.c], a POSITA would have had a reasonable expectation of success implementing such a combination of Olmi and Gaspard, which describe similar transportation methods and systems. (*Id.*, ¶116.) Indeed, the combination would have required nothing more than a combination of known prior art elements (e.g., a method/system for transporting travellers having luggage (like in Olmi) and a method/system for transporting passengers and freight (like in Gaspard)) using known programming methods (e.g., sending navigation instructions to vehicle devices, as described in both Olmi and Gaspard) without changing their respective functions to achieve a predictable result. (*Id.*) See *KSR*, 550 U.S. at 415-21.

vi) [1.e]

The Olmi-Gaspard combination discloses/suggests this limitation. (EX1002, ¶¶117-125.)

Olmi discloses that the controlling computer system determines (“determining, by the shared transport system”) when the passenger enters the carpool vehicle (“that the transport provider has picked up the” passenger). (*Id.*, ¶118.) For example, according to Olmi, “[o]nce the passenger is spotted and enters the car pool vehicle, the journey can commence.” (EX1005, 44; see also *id.*, 83.)

Additionally, to facilitate “automatic fare charging,” Olmi describes a “method of verifying that the passenger was actually picked up and conveyed in accordance with this request before the charge is levied on the passenger.” (*Id.*, 79; EX102, ¶¶119-120.)

As explained above in [1.pre]-[1.d], a POSITA would have had good reason to implement the Olmi-Gaspard method/system such that it can transport goods. In this method/system, as discussed with respect to [1.d], the computer system sends navigation instructions to the vehicle directing it to the location of the freight for pick-up. In such a method/system, a POSITA would have had good reason, and found it obvious, to have the controlling computer system determine when the good has been picked up, for example, to monitor progress of a journey and/or to facilitate “automatic fare charging,” consistent with Olmi’s disclosures discussed above. (EX1005, 44, 79-80, 83; EX1002, ¶121.) As a result, the controlling computer system can be kept apprised of when the transport starts (e.g., to facilitate and manage scheduling), and the shipper can be assured that the good was actually picked up prior to an automatic charge, which is particularly important in this context because the shipper may not be present at the pick-up location. (EX1002, ¶121.)

The teachings of Gaspard further support such an implementation, given the host “posts the route schedule when it is generated (i.e., in Step 240) and as it is updated (i.e., in step 260) so that the posted route schedule is accessible over the

network from any remote terminal 120.” (EX1006, 8:38-43; EX1002, ¶122.) For example, according to Gaspard, the host “receives actual arrival and departure times from the vehicle 150 as the vehicle 150 travels to destinations on the route,” including when it arrives and departs the “warehouse in Town A,” which is the pick-up location for the freight. (*Id.*, 8:11-18.) The “arrival time is transmitted, either automatically or manually by the driver of vehicle 150, to the host 140.” (*Id.*) This arrival and departure time received by the host for a pick-up destination reflects when freight is picked up. (EX1002, ¶122.)

Accordingly, based on these teachings of Olmi and Gaspard, a POSITA would have had good reason, and found it obvious, to configure the Olmi-Gaspard method/system such that the central computer system determines (“determining, by the shared transport system”) when the freight has been picked up (“that the transport provider has picked up the first good”). (*Id.*, ¶123.)

For reasons similar to those discussed above for claim elements [1.pre]-[1.d], a POSITA would have had a reasonable expectation of success implementing such a combination of Olmi and Gaspard, which describe similar transportation methods and systems. (*Id.*, ¶124.) Indeed, the combination would have required nothing more than a combination of known prior art elements (e.g., a method/system for transporting travellers having luggage (like in Olmi) and a method/system for transporting passengers and freight (like in Gaspard)) using known programming

methods (e.g., providing information to the central computer system that enables it to determine whether pick-up has occurred, like described in Olmi and Gaspard) without changing their respective functions to achieve a predictable result. (*Id.*) See *KSR*, 550 U.S. at 415-21.

A POSITA would have recognized that such a predictable implementation could have been accomplished in more than one way. (EX1002, ¶125.) For example, based on Gaspard's teachings, the vehicle could have provided the central computer system with the arrival and departure times for the pick-up location based on the GPS location of the vehicle, which would enable the system to determine that the freight was picked up. (EX1006, 8:11-18, 8:38-43.) Alternatively, based on Olmi's teachings, conventional GPS and/or smart card technology accompanying the freight could have been used to inform the central computer system when the freight is in the vehicle, indicating that the freight has been picked up. (EX1005, 79-81.) This implementation would have provided additional assurance to the freight shipper that the freight was actually picked up, consistent with Olmi's teachings relating to automatic charging. (EX1002, ¶125.)

vii) [1.f]

The Olmi-Gaspard combination discloses/suggests this limitation. (EX1002, ¶126-131.)

For example, for “increasing security,” Olmi explains that the “controlling computer system could monitor car pool journeys in real time as they progress to their destination” to identify any “deviation from the intended route.” (EX1005, 83.) Olmi further explains that the “location of the...driver will be known through the incoming electronic positioning data.” (*Id.*; *see also id.*, 42, Fig. 6 (“Incoming Electronic Positioning Data”).) Thus, the Olmi-Gaspard method/system, which transports goods (e.g., freight), discloses “determining, by the shared transport system, progress of the delivery of the first good based on determining a location of the transport provider device”. (EX1002, ¶127.)

This claim element is further obvious based on Gaspard’s explanation that the host can track arrival and departure times of vehicles for every destination along their routes. (EX1005, 8:11-20.) These times may be “transmitted” “automatically” from the vehicle and “at other positions along the route” “with respect to the GPS 170.” (*Id.*; *see also id.*, 8:31-36, 10:36-51.) This information allows the host to “post[] the route schedule when it is generated (i.e., in step 240) and as it is updated (i.e., in step 260) so that the posted route schedule is accessible over the network.” (*Id.*, 8:38-44; *see also id.*, 9:7-9, 9:27-30, Figs. 3a-3e.) Accordingly, as these schedules reflect, the host, which is a “shared transport system,” “determine[es]...progress of the delivery of the first good based on determining a location of the transport provider device.” (EX1002, ¶¶128-129.)

As explained above in [1.pre]-[1.e], a POSITA would have had good reason to implement the Olmi-Gaspard combination such that it can transport goods. In such a method/system, a POSITA would have had good reason, and found it obvious, to configure the controlling computer system to determine the progress of the delivery of the good based on the location of the driver, consistent with the teachings of Olmi and Gaspard discussed above. (*Id.*, ¶130.) For example, consistent with Olmi’s teachings, determining transport progress would have “increase[ed] security” because “inexplicable deviation[s] could be identified and result in “an alert to a human operator” to investigate. (EX1005, 83.) Such a feature would help ensure that goods are not lost, stolen, or otherwise off the expected route. (EX1002, ¶130.) Additionally, consistent with Gaspard’s teachings, such a feature would allow the system to monitor progress of the transport so that the freight shipper remains informed. (EX1006, 10:36-51.)

For reasons similar to those discussed above for claim elements [1.pre]-[1.e], a POSITA would have had a reasonable expectation of success implementing such a combination of Olmi and Gaspard, which describe similar transportation methods and systems. (EX1002, ¶131.) Indeed, the combination would have required nothing more than a combination of known prior art elements (e.g., a method/system for transporting travellers having luggage (like in Olmi) and a method/system for transporting passengers and freight (like in Gaspard)) using known programming

methods (e.g., determining transport progress using conventional software programming and data storage systems based on conventional GPS technology used to indicate vehicle location, as described in Olmi and Gaspard) without changing their respective functions to achieve a predictable result. (*Id.*) See *KSR*, 550 U.S. at 415-21.

viii) [1.g]

The Olmi-Gaspard combination discloses/suggests this limitation. (EX1002, ¶¶132-136.)

The Olmi-Gaspard combination discloses “determining that the transport provider has accepted the first transport request” for the same reasons discussed above for claim element [1.d]. (§IX.A.1.v.) Additionally, based on the teachings of Olmi, a POSITA would have understood, or at least found it obvious, that the controlling computer system, upon such a determination (“upon”), updates the “transit vehicle record” to reflect the “number of passengers” (or, in the Olmi-Gaspard combination, freight capacity) “currently being conveyed in the transit vehicle” (“updating, by the shared transport system, the provider characteristics associated with the transport provider”). (EX1002, ¶133.)

Indeed, this is necessary to ensure that the Olmi-Gaspard method/system can properly facilitate transport of travellers and goods (e.g., freight) based on current capacity information. (*Id.*, ¶134.) As Olmi explains, when searching for a suitable

transit vehicle, one of the “criteria” that must be satisfied is that the “transit vehicle has a sufficient quantity of available passenger places for the number of travellers specified in this journey request.” (EX1005, 35-36.) If available quantity is not updated upon determining that a driver has accepted the journey request, the method/system would not operate as intended. (EX1002, ¶134.) For example, if not updated upon acceptance, the method/system may attempt to schedule additional journey requests for previously reserved capacity, instead of searching for and reserving available capacity in other vehicles. (*Id.*, ¶135.) Thus, Olmi discloses this claim element, or at least renders it obvious, because it ensures proper function and efficiency of the method/system for transporting freight. (*Id.*, ¶135.)

For reasons similar to those discussed above for claim elements [1.pre]-[1.f], a POSITA would have had a reasonable expectation of success implementing such a combination of Olmi and Gaspard, which describe similar transportation methods and systems. (*Id.*, ¶136.) The combination would have required nothing more than a combination of known prior art elements (e.g., a method/system for transporting travellers carrying goods (like in Olmi) and a method/system for transporting passengers and freight (like in Gaspard)) using known programming methods (e.g., software changes to update data structures to reflect when traveller and/or freight capacity is reserved upon acceptance of a journey request by the driver) without changing their respective functions to achieve a predictable result of a

method/system that updates provider capacity characteristics when the provider accepts a journey request. (*Id.*) See *KSR*, 550 U.S. at 415-21.

ix) [1.h]

The Olmi-Gaspard combination discloses/suggests this limitation for reasons similar to those discussed above for claim element [1.a]. (EX1002, ¶¶137-146.)

As discussed for limitations [1.a]-[1.g], the Olmi-Gaspard method/system includes a central computer system that, for example, receives, schedules, facilitates, and monitors the progress of journey requests from travellers and/or shippers of goods for transport via vehicles. For the reasons discussed below, a POSITA would have found it obvious to configure such a method/system to accommodate multiple journey requests for one vehicle, and therefore discloses “receiving, by the shared transport system, a second transport request from a second transport user device for delivery of a second good, wherein the second transport request includes a second pick-up location, a second drop-off location, and a second needed space or capacity for the second good.” (EX1002, ¶138.)

Based on the teachings of Olmi, if the capacity permits, such vehicles can accommodate multiple journey requests. Indeed, as Olmi explains, this is one of the objectives of “car pooling schemes.” (EX1005, 3.) In such schemes, “commuters with similar itineraries organise themselves so that they can travel in a single vehicle driven by one of the commuters.” (*Id.*; see also *id.*, 6, 73-74.) Accordingly, for

carpooling, Olmi explains that the “car pool intended itinerary specification will include details of the vehicle itinerary that the car pool driver intends to follow, and will usually include related information such as the number of available passenger seats in the car pool vehicle.” (*Id.*, 12; *see also id.*, 34.) As discussed for claim element [1.g], this information is used by the intelligent grouping module to identify vehicles that have available capacity to satisfy the requirements of a journey request, given vehicle capacity may change as the number of journey requests accepted by the vehicle driver increase. (*Id.*, 36.) Thus, Olmi discloses accommodating multiple journey requests for travellers in one vehicle. (EX1002, ¶139.)

Similarly, Gaspard’s method/system is configured such that vehicles can accommodate multiple requests to transport freight. For example, Gaspard explains that “[o]nce a transportation request is received at the host,” the host will examine “route[s] [that] already exist[], and “determine whether additional...freight...can be added.” (EX1006, 7:32-39; *see also id.*, 7:45-50, 7:53-62, 11:10-17; EX1002, ¶140.) According to Gaspard, “this determination” checks whether there is space available on a given route that satisfy the “freight requirements for a freight transportation request from a requested pick up to a requested destination.” (EX1006, 11:17-22.) If “freight space is available,...the process of the present invention adds the new request to existing routes.” (*Id.*, 11:23-25; *see also id.*, 11:66-12:4, Fig. 5; EX1002, ¶141.)

In view of Olmi's and Gaspard's teachings, a POSITA would have had good reason, and found it obvious, to configure the central computer system in the above-discussed Olmi-Gaspard method/system to accommodate multiple journey requests to transport different goods, the journey requests having the same or different pick-up and drop-off locations, that are assigned to the same vehicle based on the vehicle's available capacity. (EX1002, ¶142.) As Gaspard explains, adding passengers and freight to "existing routes" increases the "profitability" of those routes. (EX1006, 3:10-17.) Adding freight to existing routes in such a manner additionally addresses "the need to have freight delivered, especially in outlying areas," which "can change dramatically over short periods of time and can therefore be difficult to schedule in advance." (*Id.*, 1:39-53.)

Olmi describes similar incentives for accommodating multiple journey requests in one vehicle. For example, Olmi explains that the "incentive for a driver...is monetary." (EX1005, 46.) As Olmi explains, when a driver conveys more, "the fee received by the driver would be proportionally higher." (*Id.*; *see also id.*, 46.) Olmi also recognizes that such an approach "cut[s] traffic levels," (*id.*, 3), and reduces pollution, (*id.*, 6). (EX1002, ¶143.)

For reasons similar to those discussed above for claim elements [1.pre]-[1.g], a POSITA would have had a reasonable expectation of success implementing such a combination of Olmi and Gaspard, which describe similar transportation methods

and systems. (EX1002, ¶144.) Indeed, the combination would have required nothing more than a combination of known prior art elements (e.g., a method/system for transporting travellers having luggage (like in Olmi) and a method/system for transporting passengers and freight (like in Gaspard)) using known programming methods (e.g., conventional software and hardware features for multiple journey requests to transport goods, consistent with Olmi’s and Gaspard’s teachings) without changing their respective functions to achieve a predictable result. (*Id.*) See *KSR*, 550 U.S. at 415-21.

A POSITA would have recognized that one predictable implementation of such a system would operate in a manner similar to as described above for claim element [1.a], given the Olmi-Gaspard method/system handles each request in the same manner. (EX1002, ¶145.) For example, consistent with Olmi’s teachings discussed above, the method/system could receive multiple journey requests for transportation, each having the same or different pick-up and drop-off locations and capacity requirements, and could perform intelligent grouping processes to “search[] the transit vehicle current itineraries database for transit vehicle records that satisfy” certain criteria, including “sufficient quantity of available...space” and compatible routes. (EX1005, 35-36.)

Thus, for the reasons discussed above, the Olmi-Gaspard combination discloses/suggests, and renders obvious, “receiving, by the shared transport system”

(e.g., central computer system) “a second transport request from a second transport user device” (e.g., new request provided by a second shipper) “for delivery of a second good” (e.g., second good sought to be delivered by second shipper) “wherein the second transport request includes a second pick-up location, a second drop-off location, and a second needed space or capacity for the second good” (e.g., the new request including similar types of request information as other requests, such as pickup/destination locations and capacity requirements), as recited in claim 1. (EX1002, ¶146.)

x) [1.i]

The Olmi-Gaspard combination discloses/suggests this claim element for the same reasons discussed above for claim elements [1.b] and [1.h]. (EX1002, ¶¶147-150.)

The analysis for claim element [1.b] demonstrates how the central computer system in the Olmi-Gaspard method/system identifies a potential driver that complies with the transport provider’s and the first journey request’s characteristics for transporting a first good, as determined via the intelligent grouping module. The analysis for claim element [1.h] explains how this method/system works for a second journey request to transport a second good. Consistent with the analysis for claim element [1.g], determining whether the vehicle can accommodate the second request is based on an updated vehicle record. (EX1002, ¶148.)

For example, as explained for claim element [1.g], in the Olmi-Gaspard method/system, the controlling computer system would update a transit vehicle's record to reflect the current capacity to transport. As explained for claim elements [1.b] and [1.h], for each journey request that is received (e.g., a first journey request, a second journey request, etc.), the controlling computer system in the Olmi-Gaspard method/system could perform intelligent grouping processes ("determining, by the shared transport system") to search the transit vehicle current itineraries database for transit vehicle records that satisfy certain criteria, including sufficient quantity of available space to carry the good along a route. Thus, the controlling computer system can determine whether the vehicle transporting a first good has available capacity to transport a second good ("that the transport provider is available for the delivery of the second good") by comparing the characteristics of a second request to transport the second good, such as capacity requirements (e.g., volume/weight of good), to the vehicles record that was updated to reflect its current available capacity following acceptance of the first request to transport the first good ("based on comparing the updated provider characteristics associated with the transport provider with the second transport request"). (EX1002, ¶149.)

A POSITA would have had good reason, and found it obvious, to implement such a method/system for reasons similar to those discussed above for claim element [1.h], including increased profitability, the need to deliver goods, reduce traffic, and

reduce pollution. (*Id.*, ¶150.) Such a method/system achieves these objectives by accommodating multiple journey requests for goods in one vehicle, which requires intelligently comparing journey requirements (e.g., volume/weight of good) and vehicle limitations (e.g., capacity), as discussed above. (*Id.*) A POSITA would have also had a reasonable expectation of success implementing such a combination of Olmi and Gaspard, which describe similar transportation methods and systems. (*Id.*) The combination would have required nothing more than a combination of known prior art elements (e.g., a method/system for transporting travellers having luggage (like in Olmi) and a method/system for transporting passengers and freight (like in Gaspard)) using known programming methods (e.g., conventional software and hardware features for accommodating multiple journey requests to transport goods, consistent with Olmi's and Gaspard's teachings) without changing their respective functions to achieve a predictable result. (*Id.*) See *KSR*, 550 U.S. at 415-21.

xi) [1.j]

The Olmi-Gaspard combination discloses/suggests this claim element for reasons similar to those discussed for claim element [1.c], given the central computer system in the Olmi-Gaspard method/system handles all journey requests in the same manner. (EX1002, ¶151.) That is, if the method/system identifies a vehicle that can accommodate a journey request to transport a good, the central computer system sends the transport request to the vehicle.

2. Claim 2

The Olmi-Gaspard combination discloses/suggests this claim element. (EX1002, ¶152.) As discussed for claim element [1.pre] (§IX.A.1.i), based on Olmi’s teachings, the Olmi-Gaspard method/system describes using an “electronic positioning system,” “such as the American GPS,” for determining a vehicle’s geographic location. (EX1005, 14). Additionally, Olmi explains that its transportation sharing features (e.g., for matching drivers and passengers) may be enabled by using an “electronic positioning system...such as the American GPS (Global Positioning System), 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.) Thus, Olmi discloses that a vehicle driver’s communicator device (“transport provider device”) has GPS capability (“includes global positioning system (GPS) technology”). (EX1002, ¶152.)

3. Claim 3

The Olmi-Gaspard combination discloses/suggests this claim element. (EX1002, ¶153.) As discussed above for claim element [1.pre] (§IX.A.1.i) and Claim 2 (§IX.A.2), based on Olmi’s teachings, the electronic positioning system of the Olmi-Gaspard combination uses the vehicle communicator device’s GPS capabilities. (EX1005, 31). As discussed for claim element [1.f], for “increasing security,” Olmi explains that the “controlling computer system could monitor car

pool journeys in real time as they progress to their destination” to identify any “deviation from the intended route.” (*Id.*, 83.) Olmi further explains that the “location of the...driver will be known through the incoming electronic positioning data” (e.g., GPS data). (*Id.*) Thus, Olmi discloses that GPS technology is used to determine the location of the vehicle (“determining the location of the transport provider device comprises utilizing the GPS technology”). (EX1002, ¶153.)

4. Claim 10

i) [10.pre] - [10.b]

To the extent limiting, the Olmi-Gaspard combination discloses/suggests the preamble for claim 10 ([10.pre]) and the features of claim elements [10.a]-[10.b] to perform the method claimed in claim 10, as explained below in §IX.4.ii. (EX1002, ¶¶154-158.)

As discussed for limitation [1.pre], the Olmi-Gaspard combination discloses/suggests a transportation ecosystem communication system (“computer system”) including a controlling computer system and a wireless network with a central computer system (“shared transport system”) through which potential passengers and drivers may be connected, via their respective mobile devices, for transporting passengers and goods (“transporting a good”). (*See* §IX.A.1.i-ii; EX1002, ¶155.)

The Olmi-Gaspard combination also discloses/suggests “a memory having processor-readable instructions stored therein” and “a processor configured to access the memory and execute the processor-readable instructions, which when executed by the processor configures the processor to perform a plurality of functions,” including the functions recited in limitations [10.b.i]-[10.b.x]. (§IX.A.4.ii; EX1002, ¶156.) For example, Olmi discloses that its central controlling computer system is a “data-processing system” that may “compris[e] a set of distributed...computer processors,” and 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.) Gaspard also discloses that the invention includes a “host computer” that has an “individual internal memory” and a “process step 220” for creating a route. (EX1006, 6:15-27; *id.*, 4:37-38; *id.*, FIG. 4.) A POSITA would have thus understood that the Olmi-Gaspard system includes “a processor configured to...execute the processor-readable instructions, which when executed by the processor configures the processor to perform a plurality of functions.” (EX1002, ¶156.)

A POSITA would have also understood that the Olmi-Gaspard system includes “a memory having processor-readable instructions stored therein.” (*Id.*, ¶157.) Indeed, Olmi explains that the 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.) Gaspard further explains that the invention also provides for a system that is suitable with “any type of terminal 120...and any number of terminals,” where each terminal and host computer can have an “individual internal memory.” (EX1006, 6:19-31.) Gaspard explains that the memory can be “random access memory (RAM), read only memory (ROM), any suitable form of storage disk (e.g., magnetic tape, hard disk, floppy disk, ZIP disk, etc.), or any combination thereof.” (*Id.*, 6:31-37.) Thus, the Olmi-Gaspard system would have had processing instructions stored in machine-readable hardware/memory (“a memory having processor-readable instructions stored therein”). (EX1002, ¶157.)

A POSITA would have understood that the Olmi-Gaspard system’s processor (i.e., the processor of the central computer system) would necessarily be configured to access the memory (“a processor configured to access the memory”) in order to execute the instructions and perform the functionalities disclosed by Olmi and Gaspard, as discussed above. (EX1002, ¶158.) Such an understanding of Olmi’s and Gaspard’s disclosures would have been consistent with a POSITA’s understanding of computer-implemented systems/processes as described by Olmi and Gaspard. (*Id.*)

ii) [10.b.i] - [10.b.x]

Limitations [10.b.i]-[10.b.x] recite language similar to that of limitations [1.a]-[1.j]. (See §XII (claims 1 and 10).) Accordingly, the Olmi-Gaspard combination discloses/suggests, and renders obvious, limitations [10.b.i]-[10.b.x] for the same reasons as discussed above for limitations [10.pre]-[10.b] (addressing claimed system/processor/memory) and respectively limitations [1.a]-[1.j] (addressing the same “functions” recited in claim 10). (See §§IX.A.ii-IX.A.xi, IX.A.4.i; EX1002, ¶159.) Thus, the Olmi-Gaspard combination discloses/suggests, and renders obvious, the recited system of claim 10. (EX1002, ¶159.)

5. Claim 11

The Olmi-Gaspard combination discloses/suggests, and renders obvious, claim 11 for the same reasons as discussed for claims 2 and 10. (See §§IX.A.2, IX.A.4; EX1002, ¶160.)

6. Claim 12

The Olmi-Gaspard combination discloses/suggests, and renders obvious, claim 12 for the same reasons as discussed for claims 3 and 10. (See §§IX.A.3, IX.A.4; EX1002, ¶161.)

7. Claim 18

i) [18.pre]

To the extent the preamble of claim 18 is limiting, the Olmi-Gaspard combination discloses/suggests the limitations therein. (EX1002, ¶162.) The

analysis for limitations [10.pre]-[10.b] demonstrates how the Olmi-Gaspard combination discloses/suggests similar features. (See §IX.A.4.i (demonstrating how the Olmi-Gaspard combination discloses/suggests a “processor” and “memory” with “instructions” (which is “[a] non-transitory computer readable medium comprising processor-readable instructions”) that are executed by the processor in the Olmi-Gaspard system’s transportation system to allow for the matching between passengers and drivers to coordinate transporting goods (“which, when executed by a processor, configure the processor to perform a plurality of functions for transporting a good using a shared transport system”).) Therefore, for the same reasons discussed for limitations [10.pre]-[10.b], the Olmi-Gaspard combination discloses/suggests limitation [18.pre]. (*Id.*; EX1002, ¶162.) Moreover, for the additional reasons below in §IX.7.ii, the Olmi-Gaspard combination discloses/suggests, and renders obvious, the “processor” configured to perform the plurality of functions as recited in claim 18.

ii) [18.a] - [18.j]

Limitations [18.a]-[18.j] recite language similar to that of limitations [1.a]-[1.j]. (See §XII (claims 1 and 18).) Accordingly, the Olmi-Gaspard combination discloses/suggests limitations [18.a]-[18.j] for the same reasons as discussed above for limitation [18.pre] (addressing claimed system/processor/memory) and respectively limitations [1.a]-[1.j] (addressing same “functions” recited in claim

18).[1] (See §§IX.A.ii-IX.A.xi, IX.A.7.i; EX1002, ¶163.) Thus, the Olmi-Gaspard combination discloses/suggests, and renders obvious, the functions recited in claim 18. (*Id.*)

B. Ground 2: Olmi in View of Gaspard and Thomas Renders Claims 4 and 13 Obvious

Olmi in view of Gaspard and Thomas discloses/suggests, and renders obvious, these claims. (EX1002, ¶¶164-171; *see also id.*, ¶¶49-52.) As discussed for claim element [1.pre] (§IX.A.1.i) and claim 2 (§IX.A.2), the Olmi-Gaspard method/system describes using an “electronic positioning system,” such as “GPS,” for determining a vehicle’s geographic location (“determining the location of the transport provider device”). (EX1005, 14; *see also id.*, 31.) Olmi does not explicitly disclose determining this location by “periodically polling location information associated with the transport provider device.” A POSITA, however, would have found these claims obvious based on the teachings of Thomas. (EX1002, ¶164.)

Thomas relates to a “location monitoring system 100,” as shown in Figure 1 below, (EX1013, 2:58-59), that is “suitable for tracking delivery...or vehicles,” (*id.*, 9:5-6). In this system, “location monitoring server 102 manages location information pertaining to a plurality of mobile units 104.” (*Id.*, 2:59-63.) The “location information can...be obtained” using “GPS.” (*Id.*, 3:18-46.)

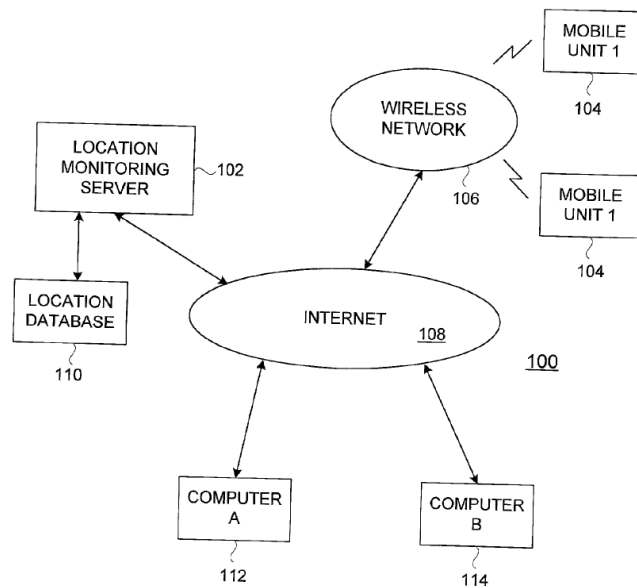


FIG. 1

(*Id.*, Fig. 1; EX1002, ¶165.)

Thomas explains that the “determination of the location of the client device can...be triggered or invoked by...a location monitoring server.” (*Id.*, 4:53-60.) For example, the server “could send a request for location information to a client device and thus invoke the acquisition of the current location.” (*Id.*, 4:44-52.) In this regard, the location request “could be sent to the client devices only when such information is being remotely monitored by another.” (*Id.*, 4:47-50.) Thus, Thomas discloses “periodically polling location information associated with the transport provider device.” (EX1002, ¶¶166-167.)

Based on these teachings, a POSITA would have had good reason, and found it obvious, to consider and implement the teachings of Thomas in the Olmi-Gaspard

method/system described above, such that the central system “periodically poll[s] location information associated with the transport provider device.” (*Id.*, ¶168.) For example, Thomas describes a system that a POSITA would have considered when implementing the Olmi-Gaspard method/system for transporting goods. (*Id.*, ¶169.) For example, consistent with the Olmi-Gaspard combination, Thomas explains that its system “is suitable for tracking delivery...or vehicles.” (EX1013, 9:5-6.)

A POSITA would have recognized the benefits of using server-initiated requests for location information in the context of the Olmi-Gaspard method/system. (EX1002, ¶170.) For example, Thomas explains that “[s]uch techniques would...facilitate conservation of power utilization...as well as network bandwidth.” (EX1013, 4:50-52; *see also id.*, 9:48-51.) This is because location information is only provided when, for example, “such information is being remotely monitored by another.” (*Id.*, 4:47-50.) In the Olmi-Gaspard method/system, a shipper of goods who is remotely monitoring the location of a delivery vehicle may not need continuous, real-time location information for the vehicle, which would require relatively more power and network bandwidth. (EX1002, ¶170.) Instead, the shipper may only need periodic, on demand location information. (*Id.*) Accordingly, in this context, it would have been obvious to a POSITA to implement techniques like those described in Thomas for determining location information in the Olmi-Gaspard system. (*Id.*)

A POSITA would have also had a reasonable expectation of success in implementing such a combination, especially given it would have involved the application of known technologies (e.g., known systems for transporting goods, as disclosed by the Olmi-Gaspard combination, and techniques for determining location information, as described in Thomas) according to known software and hardware techniques (e.g., known software and hardware features for requesting, obtaining, communicating, and determining location information, consistent with the teachings of Thomas). (EX1002, ¶171.) For example, the Olmi-Gaspard combination and Thomas rely on well-known software and hardware technology for obtaining, communicating, and determining mobile device location (e.g., GPS, known communication networks and protocols) that would have enabled implementation of the combination with a reasonable expectation of success. (*See, e.g.*, EX1006, 7:44-8:55.) Such a combination would have predictably resulted in an Olmi-Gaspard-Thomas method/system in which a shared transport system is configured to periodically poll location information. (EX1002, ¶171.) *KSR*, 550 U.S. at 416.

C. Ground 3: Olmi in View of Gaspard and Wolfe Renders Claim 9 Obvious

Olmi in view of Gaspard and Wolfe discloses/suggests, and renders obvious, this limitation. (EX1002, ¶¶172-181; *see also id.*, ¶¶53-55.) Olmi describes

monitoring the location of drivers in real time as they progress to their destinations. (EX1005, 45, 79-80, 83). Gaspard similarly describes tracking a vehicle. (EX1006, 9:63-66.) Neither Olmi nor Gaspard explicitly discloses “determining, by the shared transport system, that the transport provider has delivered the first good” based on one of the two options recited in claim 9. A POSITA, however, would have found this claim obvious based on the teachings of Wolfe. (EX1002, ¶172.)

Wolfe describes “providing a proof of delivery verification for freight transportation systems.” (EX1007, Abstract; *see also id.*, [0004].). The elements involved include a “vehicle 100,” (*id.*, [0019]), which comprises a “mobile communication terminal [or MCT]...for communicating with a remote station 102” having a “central processing center” that “serves as a central communication point between all vehicles having an MCT,” (*id.*, [0020]). Additionally, the “location of vehicle 100 may be determined by position detector 202,” which may be “GPS,” (*id.*, [0030]), and “transmitted to remote station 102 when needed” (*id.*, [0031]). (EX1002, ¶173.)

Similar to the Olmi-Gaspard combination, the method in Wolfe involves a “carrier 110” receiving “details of the shipment..., such as the location of the shipper, the date and time of the pick-up, the location of the destination, the desired date and time of delivery, and the amount and type of goods to be transported.” (EX1007, [0022].) Based on these details, a carrier 110 vehicle can be “dispatched

to shipper 106 to pick up the shipment” for delivery. (*Id.*, [0024]-[0028]; EX1002, ¶174.)

According to Wolfe, when delivered, a “validation request message may then be transmitted via the MCT to remote station 102, indicating delivery of the goods.” (EX1007, [0028]; *see also id.*, [0053], FIG. 3.) Once the message is received, the remote station 102 “examines it to determine whether the arrival of vehicle 100 corresponds to an expected delivery,” (*id.*, [0054]), and if “an expected shipment record matches the verification request message, the arrival of vehicle 100 is validated, and a proof of delivery verification is generated,” (*id.*, [0055]). The remote station 102 can then provide the “proof of deliver verification...to an interested party, such as shipper 106,” and can “immediately send an invoice.” (*Id.*, [0028]; *see also id.*, [0064]; EX1002, ¶175.)

Accordingly, Wolfe discloses “determining, by the shared transport system, that the transport provider has delivered the first good” by the remote station 102 matching the verification request message to an expected shipment record to create a proof of delivery verification, and that determination is based on remote station 102 receiving a validation request message indicating delivery of goods, which discloses “receiving a confirmation from the transport provider device.” (EX1002, ¶176.)

Based on Wolfe’s teachings, a POSITA would have had good reason, and found it obvious, to implement the Olmi-Gaspard method/system such that the central computer system determines that drivers have delivered goods (“determining, by the shared transport system, that the transport provider has delivered the first good”) based on the method described in Wolfe (“based on...receiving a confirmation from the transport provider device”). (*Id.*, ¶177.) Such an implementation would have increased confidence that goods actually reached their destination, reduced delivery disputes by providing verifiable proof of delivery, and improved operational efficiency by more precisely identifying when capacity is freed so the system can reassign vehicles, optimize routing, and reduce idle time. (*Id.*) Indeed, as Wolfe explains, its technique allows for “quickly providing a proof of delivery verification to various parties involved.” (EX1007, [0010]-[0011].)

Consistent with Olmi’s teachings, such an implementation would have also reduced fraud when using an “automatic fare charging” system liked described in Olmi. (EX1005, 79-80.) This same risk exists in the Olmi-Gaspard method/system, which is configured to deliver goods. (EX1002, ¶178.) To utilize automatic fare charging in such a method/system, there must be sufficient verification that the good was actually picked up and conveyed before the charge is levied. (*Id.*) Integrating the teachings of Wolfe would provide an additional level of verification, because,

along with examining positioning data, as described in Olmi, (EX1005, 79-80), the system can also obtain confirmation of delivery from the driver to determine whether the good has been delivered, as described in Wolfe. (EX1002, ¶179.)

A POSITA would have had a reasonable expectation of success implementing such a combination of Olmi, Gaspard, and Wolfe, which describe similar transportation methods and systems. (*Id.*, ¶180.) Indeed, the combination would have required nothing more than a combination of known prior art elements (e.g., a method/system for transporting travellers and goods (like in the Olmi-Gaspard system) and a method/system for confirming goods have been delivered (like in Wolfe)) using known programming methods (e.g., conventional software and hardware features for communicating that a good was delivered and/or conventional technology for transmitting a message, as discussed in Wolfe) without changing their respective functions to achieve a predictable result. (*Id.*) See *KSR*, 550 U.S. at 415-21.

Thus, for the reasons discussed above, the Olmi-Gaspard-Wolfe combination discloses/suggests, and renders obvious, this claim. (EX1002, ¶181.)

X. CONCLUSION

Accordingly, Petitioners request IPR be instituted.

Respectfully submitted,

Dated: March 12, 2026

By: Naveen Modi
Naveen Modi (Reg. No. 46,224)
Counsel for Petitioners

XI. APPENDIX A (CLAIM LISTING)

Claim 1

[1.pre] A method of transporting a good using a shared transport system, the method comprising:

[1.a] receiving, by the shared transport system, a first transport request from a first transport user device for delivery of a first good, wherein the first transport request includes a first pick-up location, a first drop-off location and a first needed space or capacity for the first good;

[1.b] identifying, by the shared transport system, a transport provider based on comparing provider characteristics of the transport provider with the first transport request, the provider characteristics including a current location or planned route and an available space or capacity of the transport provider, the provider characteristics being received from a transport provider device of the transport provider;

[1.c] sending, by the shared transport system, the first transport request to the transport provider device;

[1.d] sending, by the shared transport system, first transport instructions to the transport provider device upon determining that the transport provider has accepted the first transport request;

[1.e] determining, by the shared transport system, that the transport provider has picked up the first good;

[1.f] determining, by the shared transport system, progress of the delivery of the first good based on determining a location of the transport provider device;

[1.g] updating, by the shared transport system, the provider characteristics associated with the transport provider upon determining that the transport provider has accepted the first transport request;

[1.h] receiving, by the shared transport system, a second transport request from a second transport user device for delivery of a second good, wherein the second transport request includes a second pick-up location, a second drop-off location, and a second needed space or capacity for the second good;

[1.i] determining, by the shared transport system, that the transport provider is available for the delivery of the second good based on comparing the updated provider characteristics associated with the transport provider with the second transport request; and

[1.j] sending, by the shared transport system, the second transport request to the transport provider device.

Claim 2

The method of claim 1, wherein the transport provider device includes global positioning system (GPS) technology.

Claim 3

[3] The method of claim 2, wherein determining the location of the transport provider device comprises utilizing the GPS technology.

Claim 4

The method of claim 1, wherein determining the location of the transport provider device comprises periodically polling location information associated with the transport provider device.

Claim 9

The method of claim 1, further comprising:

determining, by the shared transport system, that the transport provider has delivered the first good based on one of i) receiving a confirmation from the transport provider device or the transport user device and ii) determining that a coordinated proximity between the first good and the transport provider device no longer exists.

Claim 10

[10.pre] A computer system for transporting a good using a shared transport system, the system comprising:

[10.a] a memory having processor-readable instructions stored therein; and

[10.b] a processor configured to access the memory and execute the processor-readable instructions, which when executed by the processor configures the processor to perform a plurality of functions, including functions to:

[10.b.i] receive, by the shared transport system, a first transport request from a first transport user device for delivery of a first

good, wherein the first transport request includes a first pick-up location, a first drop-off location and a first needed space or capacity for the first good;

[10.b.ii] identify, by the shared transport system, a transport provider based on comparing provider characteristics of the transport provider with the first transport request, the provider characteristics including a current location or planned route and an available space or capacity of the transport provider, the provider characteristics being received from a transport provider device of the transport provider;

[10.b.iii] send, by the shared transport system, the first transport request to the transport provider device;

[10.b.iv] send, by the shared transport system, first transport instructions to the transport provider device upon determining that the transport provider has accepted the first transport request;

[10.b.v] determine, by the shared transport system, that the transport provider has picked up the first good;

[10.b.vi] determining, by the shared transport system, progress of the delivery of the first good based on determining a location of the transport provider device;

[10.b.vii] update, by the shared transport system, the provider characteristics associated with the transport provider upon determining that the transport provider has accepted the first transport request;

[10.b.viii] receive, by the shared transport system, a second transport request from a second transport user device for delivery of a second good, wherein the second transport request includes a second pick-up location, a second drop-off location, and a second needed space or capacity for the second good;

[10.b.ix] determine, by the shared transport system, that the transport provider is available for the delivery of the second good based on comparing the updated provider characteristics associated with the transport provider with the second transport request; and

[10.b.xii] send, by the shared transport system, the second transport request to the transport provider device.

Claim 11

The computer system of claim 10, wherein the transport provider device includes global positioning system (GPS) technology.

Claim 12

The computer system of claim 11, wherein determining the location of the transport provider device comprises utilizing the GPS technology.

Claim 13

The computer system of claim 10, wherein determining the location of the transport provider device comprises periodically polling location information associated with the transport provider device.

Claim 18

[18.pre] A non-transitory computer readable medium comprising processor-readable instructions which, when executed by a processor, configure the processor to perform a plurality of functions for transporting a good using a shared transport system, the plurality of functions comprising:

[18.a] receiving, by the shared transport system, a first transport request from a first transport user device for delivery of a first good, wherein the first transport request includes a first pick-up location, a first drop-off location and a first needed space or capacity for the first good;

[18.b] identifying, by the shared transport system, a transport provider based on comparing provider characteristics of the transport provider with the first transport request, the provider characteristics including a current location or planned route and an available space or capacity of the transport provider, the provider characteristics being received from a transport provider device of the transport provider;

[18.c] sending, by the shared transport system, the first transport request to the transport provider device;

[18.d] sending, by the shared transport system, first transport instructions to the transport provider device upon determining that the transport provider has accepted the first transport request;

[18.e] determining, by the shared transport system, that the transport provider has picked up the first good;

[18.f] determining, by the shared transport system, progress of the delivery of the first good based on determining a location of the transport provider device;

[18.g] updating, by the shared transport system, the provider characteristics associated with the transport provider upon determining that the transport provider has accepted the first transport request; receiving, by the shared transport system, a second transport request from a second transport user device for delivery of a second good, wherein the second transport request includes a second pick-up location, a second drop-off location, and a second needed space or capacity for the second good;

[18.h] determining, by the shared transport system, that the transport provider is available for the delivery of the second good based on comparing the updated provider characteristics associated with the transport provider with the second transport request; and

[18.i] sending, by the shared transport system, the second transport request to the transport provider device.

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. 10,916,138 contains, as measured by the word-processing system used to prepare this paper, 13,977 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,

Dated: March 12, 2026

By: /Naveen Modi/
Naveen Modi (Reg. No. 46,224)

Paul Hastings LLP
2050 M Street NW
Washington, DC 20036
202-551-1700

Counsel for Petitioners

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. 10,916,138 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:

Bookoff McAndrews, PLLC

2000 Pennsylvania Ave NW

Suite 4001

Washington, DC 20006

A courtesy copy was also sent via electronic mail to the Patent Owner's litigation counsel at the following addresses:

Michael E. Flynn-O'Brien
Bunsow, De Mory LLP-Redwood
701 El Camino Real
Redwood City, CA 94063
mflynnobrien@bdiplaw.com

bdip-carma_uber@bdiplaw.com

By: /Naveen Modi/

Naveen Modi (Reg. No. 46,224)

Paul Hastings LLP

2050 M Street NW

Washington, DC 20036

202-551-1700

Counsel for Petitioners