UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/670,220	02/09/2021	10916138	00199-0001-15000	9574

108449 7590 01/20/2021

Bookoff McAndrews, PLLC
2020 K Street NW
Suite 400
Washington, DC 20006

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment is 0 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site http://pair.uspto.gov for additional applicants):

CARMA TECHNOLOGY LIMITED, Cork City, IRELAND;
Sean O'SULLIVAN, Princeton, NJ;

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The USA offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to encourage and facilitate business investment. To learn more about why the USA is the best country in the world to develop technology, manufacture products, and grow your business, visit SelectUSA.gov.

IR103 (Rev. 10/09)

"device';

in claim 8, line 1, "claim 7" has been changed to --claim 2--;

in claim 9, line 1, "claim 8" has been changed to --claim 2--;

in claim 10, line 1, "claim 7" has been changed to --claim 2--;

Change(s) applied to document, /M.W./ 10/30/2020

in claim 12, line ~~26~~ 25, -- ; 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; 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 sending, by the shared transport system, the second transport request to the transport provider device.-- has been inserted after "device';

in claim 18, line 1, "claim 17" has been changed to --claim 12--;

in claim 19, line 1, "claim 18" has been changed to --claim 12--;

in claim 20, line 1, "claim 17" has been changed to --claim 12--;

in claim 21, line 22, -- ; 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

Notice of References Cited	Application/Control No. 16/670,220	Applicant(s)/Patent Under Reexamination O'SULLIVAN, Sean	
	Examiner KEITH FERGUSON	Art Unit 2648	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-20060010037-A1	01-2006	Angert; Charles D.	G06Q10/087	705/15
*	B	US-6363323-B1	03-2002	Jones; Martin Kelly	G06Q10/08	340/989
*	C	US-20080125967-A1	05-2008	SPRIGG; Stephen A.	G01C21/343	701/422
	D					
	E					
	F					
	G					
	H					
	I					
	J					
	K					
	L					
	M					

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC Classification
*	N	JP-2003036498-A 02/2003	~~02-200~~	JP	MURAMATSU, HARUJI	
	O					
	P					
	Q					
	R					
	S					
	T					

Change(s) applied to document, /M.A.F./ 10/30/2020

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

PATENT
Customer No.: 108449
Attorney Docket No.: 00199-0001-15000

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	)	
	)	
Sean O'SULLIVAN	)	Group Art Unit: 2648
	)	
Application No.: 16/670,220	)	Examiner: Keith Ferguson
	)	
Filed: October 31, 2019	)	Confirmation No.: 9574
	)	
For: SYSTEMS AND METHODS FOR UTILIZING A SHARED TRANSPORT NETWORK FOR DELIVERY OF GOODS	)	***VIA EFS WEB***

MAIL STOP ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Commissioner:

FEE ADDRESS FOR MAINTENANCE FEE PURPOSES IN ACCORDANCE WITH 37 C.F.R. 1.363

In accordance with the provisions of 37 C.F.R. 1.363, the fee address set forth below is being supplied for purposes of receiving notices, receipts, and other correspondence relating to the payment of maintenance fees:

CPA GLOBAL
2318 Mill Rd.
12th Floor
Alexandria, VA 22314
Customer No.: 00197

Respectfully submitted,

BOOKOFF McANDREWS, PLLC

Dated: December 22, 2020

By: /Joel S. Simon/
Joel S. Simon
Reg. No. 70271

Electronic Patent Application Fee Transmittal

Application Number:	16670220
Filing Date:	31-Oct-2019
Title of Invention:	SYSTEMS AND METHODS FOR UTILIZING A SHARED TRANSPORT NETWORK FOR DELIVERY OF GOODS
First Named Inventor/Applicant Name:	Sean O'SULLIVAN
Filer:	Joel Stuart Simon/Jeovany Cantillano
Attorney Docket Number:	00199-0001-15000

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
UTILITY APPL ISSUE FEE	2501	1	500	500

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Miscellaneous:				
			Total in USD ($)	**500**

Electronic Acknowledgement Receipt	
EFS ID:	41463282
Application Number:	16670220
International Application Number:	
Confirmation Number:	9574
Title of Invention:	SYSTEMS AND METHODS FOR UTILIZING A SHARED TRANSPORT NETWORK FOR DELIVERY OF GOODS
First Named Inventor/Applicant Name:	Sean O'SULLIVAN
Customer Number:	108449
Filer:	Joel Stuart Simon/Jeovany Cantillano
Filer Authorized By:	Joel Stuart Simon
Attorney Docket Number:	00199-0001-15000
Receipt Date:	22-DEC-2020
Filing Date:	31-OCT-2019
Time Stamp:	13:40:22
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	$500
RAM confirmation Number	E2020BLD40468273
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Issue Fee Payment (PTO-85B)	Issue_Fee_Transmittal.pdf	1639276 71bb429b9cc70dbd01aaef444887e50ec157d23f	no	1
Warnings:					
Information:					
2	Post Allowance Communication - Incoming	Comments.pdf	102919 28f02980e751ab9353f2f3289ae9740265faa20b	no	2
Warnings:					
Information:					
3	Maintenance Fee Address Change	Fee_Address.pdf	78482 49cda98ce699a7d0d7d78edf79d29a35b4e2d121	no	1
Warnings:					
Information:					
4	Fee Worksheet (SB06)	fee-info.pdf	30289 953543b68e7311ba0c6a74243c1f559a5d9e473c	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	1850966		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

108449 7590 09/25/2020

Bookoff McAndrews, PLLC
2020 K Street NW
Suite 400
Washington, DC 20006

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

(Typed or printed name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/670,220	10/31/2019	Sean O'SULLIVAN	00199-0001-15000	9574

TITLE OF INVENTION: SYSTEMS AND METHODS FOR UTILIZING A SHARED TRANSPORT NETWORK FOR DELIVERY OF GOODS

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$500	$0.00	$0.00	$500	12/28/2020

EXAMINER	ART UNIT	CLASS-SUBCLASS
FERGUSON, KEITH	2648	455-041100

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

☒ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-09 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 Bookoff McAndrews, PLLC
2
3

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE	(B) RESIDENCE: (CITY and STATE OR COUNTRY)
Carma Technology Limited	Cork, Ireland

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☒ Corporation or other private group entity ☐ Government

4a. Fees submitted: ☒ Issue Fee ☐ Publication Fee (if required) ☐ Advance Order - # of Copies _____

4b. Method of Payment: *(Please first reapply any previously paid fee shown above)*

☒ Electronic Payment via EFS-Web ☐ Enclosed check ☐ Non-electronic payment by credit card (Attach form PTO-2038)

☒ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. 505906

5. **Change in Entity Status** (from status indicated above)

☐ Applicant certifying micro entity status. See 37 CFR 1.29

☐ Applicant asserting small entity status. See 37 CFR 1.27

☐ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature /Joel S. Simon/ Date 2020-12-22

Typed or printed name Joel S. Simon Registration No. 70271

PATENT
Customer No.: 108449
Attorney Docket No.: 00199-0001-15000

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	)	
	)	
Sean O'SULLIVAN	)	Group Art Unit: 2648
	)	
Application No.: 16/670,220	)	Examiner: Keith Ferguson
	)	
Filed: October 31, 2019	)	Confirmation No.: 9574
	)	
For: SYSTEMS AND METHODS FOR UTILIZING A SHARED TRANSPORT NETWORK FOR DELIVERY OF GOODS	)	***VIA EFS WEB***

MAIL STOP ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Commissioner:

COMMENTS ON STATEMENT OF REASONS FOR ALLOWANCE

Applicant thanks the Examiner for the Notice of Allowance mailed on September 25, 2020 indicating that claims 2-6, 8-16, and 18-21 are allowed, and for the statement of Reasons for Allowance mailed on October 6, 2020. Without withdrawing any of the allowed claims from issue, Applicant submits these comments.

The Examiner made characterizations and assertions about the claims and the related prior art in the statement of Reasons for Allowance. Although Applicant agrees with the Examiner's ultimate conclusions that the claims are patentable because the prior art does not teach or suggest the claimed features set forth in the claims, Applicant does not necessarily agree with each or every characterization and assertion contained in the Examiner's statement.

Furthermore, it is understood that the Examiner's characterizations were for purposes of referring to the prior art, and do not in any way imply that the claims are limited by words not actually present in the claims. Therefore, unless expressly noted otherwise, Applicant declines to subscribe to any statement or characterization contained in the Notice of Allowance and its accompanying Reasons for Allowance.

Should the Examiner disagree with the Applicant's comments on the Reasons for Allowance, the Examiner is invited to contact the undersigned at (202) 808-3560, in order to resolve such disagreement.

Please charge any additional required fees, charge any underpayments, or credit any overpayment, to Deposit Account No. 50-5906.

Respectfully submitted,

BOOKOFF McANDREWS, PLLC

Dated: December 22, 2020

By: /Joel S. Simon/
Joel S. Simon
Reg. No. 70271

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/670,220	10/31/2019	Sean O'SULLIVAN	00199-0001-15000	9574

108449 7590 12/15/2020

Bookoff McAndrews, PLLC
2020 K Street NW
Suite 400
Washington, DC 20006

EXAMINER	
FERGUSON, KEITH	

ART UNIT	PAPER NUMBER
2648	

NOTIFICATION DATE	DELIVERY MODE
12/15/2020	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

KRoss@bomcip.com
eofficeaction@appcoll.com
usptomail@bomcip.com

Response to Rule 312 Communication	Application No.	Applicant(s)	
	16/670,220	O'SULLIVAN, Sean	
	Examiner	Art Unit	AIA (FITF) Status
	KEITH FERGUSON	2648	No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

1. ☑ The amendment filed on 07 December 2020 under 37 CFR 1.312 has been considered, and has been:
   a) ☐ entered.
   b) ☑ entered as directed to matters of form not affecting the scope of the invention.
   c) ☐ disapproved because the amendment was filed after the payment of the issue fee.
      Any amendment filed after the date the issue fee is paid must be accompanied by a petition under 37 CFR 1.313(c)(1) and the required fee to withdraw the application from issue.
   d) ☐ disapproved. See explanation below.
   e) ☐ entered in part. See explanation below.

/KEITH FERGUSON/
Primary Examiner, Art Unit 2648

Electronic Acknowledgement Receipt	
EFS ID:	41306417
Application Number:	16670220
International Application Number:	
Confirmation Number:	9574
Title of Invention:	SYSTEMS AND METHODS FOR UTILIZING A SHARED TRANSPORT NETWORK FOR DELIVERY OF GOODS
First Named Inventor/Applicant Name:	Sean O'SULLIVAN
Customer Number:	108449
Filer:	Joel Stuart Simon/Jeovany Cantillano
Filer Authorized By:	Joel Stuart Simon
Attorney Docket Number:	00199-0001-15000
Receipt Date:	07-DEC-2020
Filing Date:	31-OCT-2019
Time Stamp:	08:34:20
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Amendment after Notice of Allowance (Rule 312)	312Amendment.pdf	106014 f84922a1a42d574eda7b63b5833e9d83df7f6ea3	no	11
Warnings:					

Information:	
Total Files Size (in bytes):	106014

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.
National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.
New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PATENT
Customer No.: 108449
Attorney Docket No.: 00199-0001-15000

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	)	
	)	
Sean O'SULLIVAN	)	Group Art Unit: 2648
	)	
Application No.: 16/670,220	)	Examiner: Keith Ferguson
	)	
Filed: October 31, 2019	)	Confirmation No.: 9574
	)	
For: SYSTEMS AND METHODS FOR UTILIZING A SHARED TRANSPORT NETWORK FOR DELIVERY OF GOODS	)	***VIA EFS WEB***

MAIL STOP ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Commissioner:

AMENDMENT PURSUANT TO 37 C.F.R. §1.312

A Notice of Allowance was mailed on September 25, 2020; the Issue Fee is due on December 28, 2020.

Pursuant to 37 CFR § 1.312, Applicant requests that this application be amended as follows:

Amendments to the Claims are reflected in the listing of claims beginning on page 2 of this Reply.

Remarks follow the claim amendments section of this Reply.

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Canceled)

2. (Currently Amended) A method of transporting a good using a shared transport system, the method comprising:

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;

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;

sending, by the shared transport system, the first transport request to the transport provider device;

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;

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

determining, by the shared transport system, progress of the delivery of the first good based on determining a location of the transport provider device;

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;

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

sending, by the shared transport system, the second transport request to the transport provider device.

3. (Previously Presented) The method of claim 2, wherein the transport provider device includes global positioning system (GPS) technology.

4. (Previously Presented) The method of claim 3, wherein determining the location of the transport provider device comprises utilizing the GPS technology.

5. (Previously Presented) The method of claim 2, wherein determining the location of the transport provider device comprises periodically polling location information associated with the transport provider device.

6. (Previously Presented) The method of claim 2, further comprising:

sending, by the shared transport system, instructions for displaying the progress of the delivery of the first good to the first transport user device, wherein displaying the progress of the delivery of the first good comprises displaying the location of the transport provider device on a map.

7. (Canceled)

8. (Previously Presented) The method of claim 2, wherein updating, by the shared transport system, the provider characteristics associated with the transport provider comprises updating the available space or capacity of the transport provider.

9. (Previously Presented) The method of claim 2, wherein comparing the updated provider characteristics associated with the transport provider with the second transport request comprises comparing the updated available space or capacity of the transport provider with the second needed space or capacity for the second good.

10. (Previously Presented) The method of claim 2, wherein comparing the updated provider characteristics associated with the transport provider with the second transport request comprises comparing the current location or planned route with the second pick-up and drop-off locations.

11. (Canceled)

12. (Currently Amended) A computer system for transporting a good using a shared transport system, the system comprising:

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 functions to:

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;

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;

send, by the shared transport system, the first transport request to the transport provider device;

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;

determine, by the shared transport system, that the transport provider has picked up the first good; [[and]]

determine, by the shared transport system, progress of the delivery of the first good based on determining a location of the transport provider device;

~~updating~~ 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;

~~receiving~~ 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;

~~determining~~ 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

~~sending~~ send, by the shared transport system, the second transport request to the transport provider device.

13. (Previously Presented) The computer system of claim 12, wherein the transport provider device includes global positioning system (GPS) technology.

14. (Previously Presented) The computer system of claim 13, wherein determining the location of the transport provider device comprises utilizing the GPS technology.

15. (Previously Presented) The computer system of claim 12, wherein determining the location of the transport provider device comprises periodically polling location information associated with the transport provider device.

16. (Previously Presented) The computer system of claim 12, further including functions to:

send, by the shared transport system, instructions for displaying the progress of the delivery of the first good to the first transport user device, wherein displaying the progress of the delivery of the first good comprises displaying the location of the transport provider device on a map.

17. (Canceled)

18. (Previously Presented) The computer system of claim 12, wherein updating, by the shared transport system, the provider characteristics associated with

the transport provider comprises updating the available space or capacity of the transport provider.

19. (Previously Presented) The computer system of claim 12, wherein comparing the updated provider characteristics associated with the transport provider with the second transport request comprises comparing the updated available space or capacity of the transport provider with the second needed space or capacity for the second good.

20. (Previously Presented) The computer system of claim 12, wherein comparing the updated provider characteristics associated with the transport provider with the second transport request comprises comparing the current location or planned route with the second pick-up and drop-off locations.

21. (Currently Amended) 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:

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;

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;

sending, by the shared transport system, the first transport request to the transport provider device;

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;

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

determining, by the shared transport system, progress of the delivery of the first good based on determining a location of the transport provider device;

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;

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

sending, by the shared transport system, the second transport request to the transport provider device.

REMARKS

By this Rule 312 Amendment, Applicant has amended claims 2, 12, and 21 to correct minor informalities (e.g., grammatical and typographical concerns). No new matter has been added by this amendment.

This Amendment does not necessitate any further search or examination by the Examiner. Accordingly, Applicant respectfully requests that the Examiner consider and enter this Amendment without withdrawing this application from issue.

If the Examiner believes a telephone conversation might expedite processing of this Rule 312 Amendment, the Examiner is invited to call Applicant's undersigned representative at 202-808-3560.

Please grant any extensions of time required to enter this response and charge any additional required fees to Deposit Account No. 50-5906. In addition, the Commissioner is hereby authorized to charge any additional fees due and any other fees due under 37 C.F.R. § 1.16 or § 1.17 during the pendency of this application to Deposit Account No. 50-5906.

Respectfully submitted,

BOOKOFF McANDREWS, PLLC
Customer Number: 108449

Dated: December 7, 2020

By: /Joel S. Simon/
Joel S. Simon
Reg. No. 70271

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/670,220	10/31/2019	Sean O'SULLIVAN	00199-0001-15000	9574

108449 7590 11/05/2020

Bookoff McAndrews, PLLC
2020 K Street NW
Suite 400
Washington, DC 20006

EXAMINER	
FERGUSON, KEITH	

ART UNIT	PAPER NUMBER
2648	

NOTIFICATION DATE	DELIVERY MODE
11/05/2020	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

KRoss@bomcip.com
eofficeaction@appcoll.com
usptomail@bomcip.com

Notice of Allowability	Application No. 16/670,220	Applicant(s) O'SULLIVAN, Sean	
	Examiner KEITH FERGUSON	Art Unit 2648	AIA (FITF) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☑ This communication is responsive to 5/8/2020.
   ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

3. ☑ The allowed claim(s) is/are 2-6,8-16 and 18-21 . As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information , please see **http://www.uspto.gov/patents/init_events/pph/index.jsp** or send an inquiry to **PPHfeedback@uspto.gov.**

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   Certified copies:

   a) ☐ All b) ☐ Some *c) ☐ None of the:

   1. ☐ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
   3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____ .

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____.
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material _____.
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date. _____.
5. ☐ Examiner's Amendment/Comment
6. ☐ Examiner's Statement of Reasons for Allowance
7. ☐ Other _____.

/KEITH FERGUSON/
Primary Examiner, Art Unit 2648

DO NOT ENTER: /K.F/

RESPONSE UNDER 37 C.F.R. § 1.116
EXPEDITED PROCEDURE REQUESTED
EXAMINING GROUP 2648
PATENT
Customer No.: 108,449
Attorney Docket No.: 00199-0001-15000

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	)	
	)	
Sean O'SULLIVAN	)	Group Art Unit: 2648
	)	
Application No.: 16/670,220	)	Examiner: Keith Ferguson
	)	
Filed: October 31, 2019	)	Confirmation No.: 9574
	)	
For: SYSTEMS AND METHODS FOR UTILIZING A SHARED TRANSPORT NETWORK FOR DELIVERY OF GOODS	)	***VIA EFS WEB***

MAIL STOP AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Commissioner:

REPLY TO OFFICE ACTION

In reply to the Final Office Action mailed on July 16, 2020, from which the period for reply extends through October 16, 2020, and the two-month after-final period for reply extends through September 16, 2020, and pursuant to 37 C.F.R. § 1.116, Applicant proposes to amend the above-identified application as follows:

Amendments to the Claims are reflected in the listing of claims beginning on page 2 of this Reply.

Remarks follow the claim amendments section of this Reply.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/670,220	10/31/2019	Sean O'SULLIVAN	00199-0001-15000	9574

108449 7590 10/06/2020

Bookoff McAndrews, PLLC
2020 K Street NW
Suite 400
Washington, DC 20006

EXAMINER	
FERGUSON, KEITH	

ART UNIT	PAPER NUMBER
2648	

NOTIFICATION DATE	DELIVERY MODE
10/06/2020	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

KRoss@bomcip.com
eofficeaction@appcoll.com
usptomail@bomcip.com

Notice of Allowability	Application No. 16/670,220	Applicant(s) O'SULLIVAN, Sean	
	Examiner KEITH FERGUSON	Art Unit 2648	AIA (FITF) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☑ This communication is responsive to 9/15/2020.
   ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

3. ☑ The allowed claim(s) is/are 2-6,8-16 and 18-21 . As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information , please see **http://www.uspto.gov/patents/init_events/pph/index.jsp** or send an inquiry to **PPHfeedback@uspto.gov.**

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   Certified copies:

   a) ☐ All b) ☐ Some *c) ☐ None of the:

   1. ☐ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
   3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____ .

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____.
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material _____.
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date. _____.
5. ☐ Examiner's Amendment/Comment
6. ☑ Examiner's Statement of Reasons for Allowance
7. ☐ Other _____.

/KEITH FERGUSON/
Primary Examiner, Art Unit 2648

UNITED STATES DEPARTMENT OF COMMERCE
U.S. Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450

APPLICATION NO./ CONTROL NO.	FILING DATE	FIRST NAMED INVENTOR/ PATENT IN REEXAMINATION	ATTORNEY DOCKET NO.
16/670,220	10/31/2019	O'SULLIVAN, Sean	00199-0001-1500

		EXAMINER	
Bookoff McAndrews, PLLC 2020 K Street NW Suite 400 Washington, DC 20006		KEITH FERGUSON	
		ART UNIT	PAPER
		2648	20200922

DATE MAILED: _____

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner for Patents

Examiner's Statement of Reasons for Allowance	
/KEITH FERGUSON/ Primary Examiner, Art Unit 2648	

PTO-90C (Rev.04-03)

DETAILED ACTION

Notice of Pre-AIA or AIA Status

1. The present application is being examined under the pre-AIA first to invent provisions.

Allowable Subject Matter

2. Claims 2-6, 8-16 and 18-21 are allowed.

3. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claims 2,12 and 21, the prior art of record fails to teach or suggest alone, or in combination 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 item-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 item-good; determining, by the shared transport system, that the transport provider is available for the delivery of the second item-good based on comparing the updated provider characteristics associated with the transport provider with the second transport request; and sending, by the shared transport system, the second transport request to the transport provider device.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KEITH FERGUSON whose telephone number is (571)272-7865. The examiner can normally be reached on M-F 7 am -3 pm.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wesley L Kim can be reached on (571) 272-7867. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see https://ppair-my.uspto.gov/pair/PrivatePair. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/KEITH FERGUSON/
Primary Examiner, Art Unit 2648

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

108449 7590 09/25/2020

Bookoff McAndrews, PLLC
2020 K Street NW
Suite 400
Washington, DC 20006

EXAMINER
FERGUSON, KEITH

ART UNIT	PAPER NUMBER
2648	

DATE MAILED: 09/25/2020

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/670,220	10/31/2019	Sean O'SULLIVAN	00199-0001-15000	9574

TITLE OF INVENTION: SYSTEMS AND METHODS FOR UTILIZING A SHARED TRANSPORT NETWORK FOR DELIVERY OF GOODS

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$500	$0.00	$0.00	$500	12/28/2020

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Maintenance fees are due in utility patents issuing on applications filed on or after Dec. 12, 1980. It is patentee's responsibility to ensure timely payment of maintenance fees when due. More information is available at www.uspto.gov/PatentMaintenanceFees.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

108449 7590 09/25/2020

Bookoff McAndrews, PLLC
2020 K Street NW
Suite 400
Washington, DC 20006

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

(Typed or printed name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/670,220	10/31/2019	Sean O'SULLIVAN	00199-0001-15000	9574

TITLE OF INVENTION: SYSTEMS AND METHODS FOR UTILIZING A SHARED TRANSPORT NETWORK FOR DELIVERY OF GOODS

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$500	$0.00	$0.00	$500	12/28/2020

EXAMINER	ART UNIT	CLASS-SUBCLASS
FERGUSON, KEITH	2648	455-041100

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

❑ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

❑ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-09 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 _____
2 _____
3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ❑ Individual ❑ Corporation or other private group entity ❑ Government

4a. Fees submitted: ❑ Issue Fee ❑ Publication Fee (if required) ❑ Advance Order - # of Copies _____

4b. Method of Payment: *(Please first reapply any previously paid fee shown above)*

❑ Electronic Payment via EFS-Web ❑ Enclosed check ❑ Non-electronic payment by credit card (Attach form PTO-2038)

❑ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. _____

5. **Change in Entity Status** (from status indicated above)

❑ Applicant certifying micro entity status. See 37 CFR 1.29

❑ Applicant asserting small entity status. See 37 CFR 1.27

❑ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/670,220	10/31/2019	Sean O'SULLIVAN	00199-0001-15000	9574

108449 7590 09/25/2020

Bookoff McAndrews, PLLC
2020 K Street NW
Suite 400
Washington, DC 20006

EXAMINER	
FERGUSON, KEITH	

ART UNIT	PAPER NUMBER
2648	

DATE MAILED: 09/25/2020

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Notice of Allowability	Application No. 16/670,220	Applicant(s) O'SULLIVAN, Sean	
	Examiner KEITH FERGUSON	Art Unit 2648	AIA (FITF) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☑ This communication is responsive to 9/15/2020.
   ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

3. ☑ The allowed claim(s) is/are 2-6,8-16 and 18-21 . As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information , please see **http://www.uspto.gov/patents/init_events/pph/index.jsp** or send an inquiry to **PPHfeedback@uspto.gov.**

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   Certified copies:

   a) ☐ All b) ☐ Some *c) ☐ None of the:

   1. ☐ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
   3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____ .

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____.
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material _____.
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date. _____.
5. ☑ Examiner's Amendment/Comment
6. ☐ Examiner's Statement of Reasons for Allowance
7. ☐ Other _____.

/KEITH FERGUSON/
Primary Examiner, Art Unit 2648

DETAILED ACTION

Notice of Pre-AIA or AIA Status

1. The present application is being examined under the pre-AIA first to invent provisions.

Part III EXAMINER'S AMENDMENT

2. An Examiner's Amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 C.F.R. § 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the Issue Fee.

Authorization for this Examiner's Amendment was given in a telephone interview with Sangwoo Ahn on September 21, 2020 regarding claims mailed 5/08/2020.

The application has been amended as follows:

Claim 7 has been canceled;

claim 17 has been canceled;

in claim 2, line 20, -- ; 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; 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 sending, by the shared transport system, the second transport request to the transport provider device.-- has been inserted after

“device’;

in claim 8, line 1, “claim 7” has been changed to --claim 2--;

in claim 9, line 1, “claim 8” has been changed to --claim 2--;

in claim 10, line 1, “claim 7” has been changed to --claim 2--;

in claim 12, line 26, -- ; 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; 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 sending, by the shared transport system, the second transport request to the transport provider device.-- has been inserted after “device’;

in claim 18, line 1, “claim 17” has been changed to --claim 12--;

in claim 19, line 1, “claim 18” has been changed to --claim 12--;

in claim 20, line 1, “claim 17” has been changed to --claim 12--;

in claim 21, line 22, -- ; 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; 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 sending, by the shared transport system, the second transport request to the transport provider device.-- has been inserted after "device".

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KEITH FERGUSON whose telephone number is (571)272-7865. The examiner can normally be reached on M-F 7 am -3 pm.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wesley L Kim can be reached on (571) 272-7867. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see https://ppair-my.uspto.gov/pair/PrivatePair. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/KEITH FERGUSON/
Primary Examiner, Art Unit 2648
September 21, 2020

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/670,220	O'SULLIVAN, Sean
	Examiner	Art Unit
	KEITH FERGUSON	2648

CPC - Searched*		
Symbol	Date	Examiner
G06Q50/30, G06Q10/00, G06Q10/025, G06Q10/0833	02/05/2020	KF

CPC Combination Sets - Searched*		
Symbol	Date	Examiner
G06Q50/30, G06Q10/00, G06Q10/025, G06Q10/0833, G08G1/123, G08G1/017, G08G1/202	02/05/2020	KF

US Classification - Searched*			
Class	Subclass	Date	Examiner

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	Date	Examiner
east search notes included	02/05/2020	KF
inventor search	02/05/2020	KF
consulted with SPE about 112 first paragraph	02/05/2020	KF
consulted with SPE about 112 first paragraph	07/13/2020	KF
update search notes	07/13/2020	KF
update search notes included	09/21/2020	KF

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/670,220	O'SULLIVAN, Sean
	Examiner	Art Unit
	KEITH FERGUSON	2648

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner
G06Q, G08G	G06Q50/30, G06Q10/00, G06Q10/025, G06Q10/0833, G08G1/123, G08G1/017, G08G1/202	09/21/2020	KF

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/670,220	O'SULLIVAN, Sean
	Examiner	**Art Unit**
	KEITH FERGUSON	2648

CPC						
Symbol					**Type**	**Version**
G08G	/	1	/	123	F	2013-01-01
G06Q	/	10	/	00	I	2013-01-01
G06Q	/	10	/	025	I	2013-01-01
G06Q	/	50	/	30	I	2013-01-01
G06Q	/	10	/	063112	I	2013-01-01

CPC Combination Sets								
Symbol					**Type**	**Set**	**Ranking**	**Version**
	/		/					

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	18	
/KEITH FERGUSON/ Primary Examiner, Art Unit 2648	21 September 2020	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	12	1

U.S. Patent and Trademark Office — Part of Paper No.: 20200921

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/670,220	O'SULLIVAN, Sean
	Examiner	**Art Unit**
	KEITH FERGUSON	2648

INTERNATIONAL CLASSIFICATION				
CLAIMED				
G08G	/	1	/	123

NON-CLAIMED				
	/		/	

US ORIGINAL CLASSIFICATION	
CLASS	**SUBCLASS**

CROSS REFERENCES(S)						
CLASS	**SUBCLASS (ONE SUBCLASS PER BLOCK)**					

NONE		**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	18	
/KEITH FERGUSON/ Primary Examiner, Art Unit 2648	21 September 2020	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	12	1

U.S. Patent and Trademark Office — Part of Paper No.: 20200921

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/670,220	O'SULLIVAN, Sean
	Examiner	**Art Unit**
	KEITH FERGUSON	2648

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIMS

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
	1	8	10	16	19										
1	2	9	11	17	20										
2	3	10	12	18	21										
3	4	11	13												
4	5	12	14												
5	6	13	15												
	7	14	16												
6	8		17												
7	9	15	18												

NONE		**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	18	
/KEITH FERGUSON/ Primary Examiner, Art Unit 2648	21 September 2020	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	12	1

U.S. Patent and Trademark Office — Part of Paper No.: 20200921

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	1,687	(transport$3 or deliver$3) near2 (second or other) near (good or item or person or item)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/09/21 13:20
L2	288,782	updat$3 same (good or item or person or item)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/09/21 13:22
L3	478	l1 and l2	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/09/21 13:23
L4	338	(vehicle or car or automobile or driver or cab or train or rider or ride adj shar$3 or uber or lyft) and l3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/09/21 13:23
S1	58,915	(pickup or pick$3 adj up pick$up or gather$3) near1 (individual or user or client or passenger or person or people)	US-PGPUB; USPAT;	OR	ON	2020/01/24 13:38

			USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			
S2	8,251	(o'sullivan or osullivan).in.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/24 13:39
S3	42	S1 and S2	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/24 13:39
S4	8,855	(taxi or cab or train) and S1	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/24 13:42
S5	64	lost near3 (item or article or briefcase or purse or equipment or notebook or laptop) and S4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/24 13:44
S6	175	lost near3 (item or article or briefcase or purse or equipment or notebook or laptop) same (driver or shauffer or pilot)	US-PGPUB; USPAT; USOCR;	OR	ON	2020/01/24 13:59

			FPRS; EPO; JPO; DERWENT; IBM_TDB			
S7	45	(taxi or cab or train) and S6	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/24 13:59
S8	1,306	(taxi or cab or train) and lost near3 (item or article or briefcase or purse or equipment or notebook or laptop)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/24 14:08
S9	1,306	(taxi or cab or train) and lost$3 near3 (item or article or briefcase or purse or equipment or notebook or laptop)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/24 14:09
S11	1,187	lost$2 near3 (item or article or briefcase or purse or equipment or notebook or laptop) same (vehicle or car or automobile or driver or cab or train)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/24 14:10
S12	1,704	(lost$2 or missing) near3 (item or article or briefcase or purse or equipment or notebook or laptop) same (vehicle or car or automobile or driver or cab or train)	US-PGPUB; USPAT; USOCR; FPRS;	OR	ON	2020/01/24 14:10

			EPO; JPO; DERWENT; IBM_TDB			
S13	323	S9 and S12	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/24 14:11
S14	1,306	(taxi or cab or train) and lost$3 near3 (item or article or briefcase or purse or equipment or notebook or laptop)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/24 15:41
S15	1,704	(lost$2 or missing) near3 (item or article or briefcase or purse or equipment or notebook or laptop) same (vehicle or car or automobile or driver or cab or train)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/24 15:41
S16	323	S14 and S15	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/24 15:41
S17	45	S16 AND ((G06Q50/30 OR G06Q10/00 OR G06Q10/025 OR G06Q10/0833 OR G08G1/123 OR G08G1/017 OR G08G1/202).CPC. OR (G06Q10/00 OR G06Q50/30 OR G08G1/123 OR G08G1/017).IPCR.)	US-PGPUB; USPAT; USOCR; FPRS; EPO;	OR	ON	2020/01/24 15:41

			JPO; DERWENT; IBM_TDB			
S18	6,705	(pick-up or pick adj up) near3 (item or article or good or merchandise or suppl$3) and deliver$3 with (item or article or good or merchandise or suppl$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/02/03 09:35
S19	8,360	(progress or advanc$5) with (deliver$3 or transport$3 or convery or carry$3) with (item or article or good or merchandise or suppl$3) same (location$3 or position$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/02/03 09:39
S20	270	S18 and S19	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/02/03 09:40
S21	13,667,272	(vehicle or car or automobile or driver or cab or train or rider or ride adj shar$3 or uber or lyft)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/02/03 10:59
S22	8,360	(progress or advanc$5) with (deliver$3 or transport$3 or convery or carry$3) with (item or article or good or merchandise or suppl$3) same (location$3 or position$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO;	OR	ON	2020/02/03 11:01

			DERWENT; IBM_TDB			
S23	3,220	S22 and S21	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/02/03 11:01
S24	206	(pick-up or pick adj up) near3 (item or article or good or merchandise or suppl$3) and S23	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/02/03 11:03
S25	3	("20020011940").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2020/02/03 13:01
S27	8,360	(progress or advanc$5) with (deliver$3 or transport$3 or convery or carry$3) with (item or article or good or merchandise or suppl$3) same (location$3 or position$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/02/03 13:06
S28	0	"20020011940".pn. and (item or article or good or merchandise or suppl$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWEN	OR	ON	2020/02/03 13:09

			T; IBM_TDB			
S29	0	"20020011940".pn. and thing	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/02/03 13:12
S30	2	"20020011940".pn. and shar$3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/02/03 13:28
S31	2	"20020011940".pn. and passengers	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/02/03 13:42
S32	2,287	ferguson.xa.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/02/04 13:15
S33	568	(o'sullivan or osullivan).in. and display$ and transport	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWEN	OR	ON	2020/02/04 13:16

			T; IBM_TDB			
S34	45	gps and S33	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/02/04 13:17
S35	3	"20110102165".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/02/04 13:27
S36	2	"20030139941".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/02/04 13:28
S37	2	"20090326991".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/02/04 13:29
S38	15	periodical$3 near1 poll$3 near2 (taxi or cab or train or transport or driver) same (location$3 or position$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWEN	OR	ON	2020/02/04 13:38

			T; IBM_TDB			
S39	21	periodical$3 near1 poll$3 near2 (location$3 or position$3) same (taxi or cab or train or transport$3 or driver)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/02/04 13:40
S40	65	periodic$5 near1 poll$3 near2 (location$3 or position$3) same (taxi or cab or train or transport$3 or driver)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/02/04 13:42
S41	227	periodic$5 near1 poll$3 near4 (taxi or cab or train or transport$3 or driver)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/02/04 13:44
S42	176	(location$3 or position$3) and S41	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/02/04 13:48
S43	561,100	(deliver$3 or transport$3 or convery or carry$3) with (item or article or good or merchandise or suppl$3 or product or import or export or freight or cargo or shipment) same (location$3 or position$3 or area)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWEN	OR	ON	2020/06/11 14:13

			T; IBM_TDB			
S44	31,626	(pick-up or pick adj up) with (item or article or good or merchandise or suppl$3 or product or import or export or freight or cargo or shipment) same (location$3 or position$3 or area)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/06/11 14:16
S45	13,224	S43 and S44	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/06/11 14:17
S46	2,227,465	(spac$3 or capacit$3) with (item or article or good or merchandise or suppl$3 or product or import or export or freight or cargo or shipment)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/06/11 14:52
S47	5,433	S45 and S46	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/06/11 14:53
S48	13,863,610	(truck or vehicle or van or car or automobile or train)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWEN	OR	ON	2020/06/11 14:55

			T; IBM_TDB			
S49	3,458	S47 and S48	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/06/11 14:55
S50	232,449	(truck or vehicle or van or car or automobile or train) same (deliver$3 or transport$3 or convery or carry$3) with (item or article or good or merchandise or suppl$3 or product or import or export or freight or cargo or shipment)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/06/11 14:56
S51	2,442	S49 and S50	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/06/11 14:57
S52	497	(truck or vehicle or van or car or automobile or train) same (deliver$3 or transport$3 or convery or carry$3).ab. and S51	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/06/11 14:58
S53	131	S52 AND ((G06Q50/30 OR G06Q10/00 OR G06Q10/025 OR G06Q10/0833 OR G08G1/123 OR G08G1/017 OR G08G1/202).CPC. OR (G06Q10/00 OR G06Q50/30 OR G08G1/123 OR G08G1/017).IPCR.)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWEN	OR	ON	2020/06/11 15:12

			T; IBM_TDB			
S54	149,079	(pick-up or pick adj up or drop-off or drop adj off) with (good or item or article or unit or object or thing)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/07/02 09:41
S55	3,940,477	(ride-shar$3 or transport$6 or deliver$3 or truck or airplane or aircraft or train or uber or ups or fedex) with (good or item or article or unit or object or thing)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/07/02 09:45
S56	145,320	S54 and S55	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/07/02 09:47
S57	74,772	request$3 with (ride-shar$3 or transport$6 or deliver$3 or truck or airplane or aircraft or train or uber or ups or fedex) with (good or item or article or unit or object or thing)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/07/02 09:55
S58	4,354	S56 and S57	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWEN	OR	ON	2020/07/02 09:58

			T; IBM_TDB			
S59	3,601,471	(ride-shar$3 or transport$6 or deliver$3 or uber or ups or fedex) with (good or item or article or unit or object or thing)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/07/02 10:00
S60	4,353	S58 and S59	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/07/02 10:01
S61	91,106	(identify$3 or identit$3 or identifier or nam$3 or identification or id) with (ride-shar$3 or transport$6 or deliver$3 or uber or ups or fedex or provider or provid$3) near3 (good or item or article or unit or object or thing)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/07/02 10:05
S62	1,665	S60 and S61	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/07/02 10:07
S63	1,095,191	(room or capacit$3 or spac$3) near3 (good or item or article or unit or object or thing)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWEN	OR	ON	2020/07/02 10:08

			T; IBM_TDB			
S64	522	S62 and S63	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/07/02 10:08
S65	14,504	accept$3 near1 request$3 same (good or item or article or unit or object or thing)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/07/02 10:10
S66	16	S64 and S65	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/07/02 10:14
S67	4,142,773	(ride-shar$3 or transport$6 or deliver$3 or truck or airplane or aircraft or train or uber or ups or fedex) same (location$3 or area or route)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/07/02 11:03
S68	508	S64 and S67	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWEN	OR	ON	2020/07/02 11:04

			T; IBM_TDB			
S69	310	(gps or global adj system) and S68	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/07/02 11:04
S70	0	("20040243430.pn.and(goodoritemorcapacit$3)").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2020/07/13 12:27
S71	2	"20040243430".pn. and (good or item or capacit$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/07/13 12:28
S72	177	(o'sullivan or osullivan).in. and confirmation	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/09/18 08:33
S73	67	(pickup or pick$3 adj up pick$up) and S72	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWEN	OR	ON	2020/09/18 08:34

			T; IBM_TDB			
S74	1,117	confirm$5 with delivered near2 (good or item or person)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/09/18 09:09
S75	171	(ride-shar$3 or transport$6 or deliver$3 or truck or airplane or aircraft or train or uber or ups or fedex) and S72	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/09/18 09:10
S76	1,117	(ride-shar$3 or transport$6 or deliver$3 or truck or airplane or aircraft or train or uber or ups or fedex) and S74	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/09/18 09:10
S77	207	S74 AND ((G06Q50/30 OR G06Q10/00 OR G06Q10/025 OR G06Q10/0833 OR G08G1/123 OR G08G1/017 OR G08G1/202).CPC. OR (G06Q10/00 OR G06Q50/30 OR G08G1/123 OR G08G1/017).IPCR.)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/09/18 09:11
S78	119	(taxi or cab or train) and S74	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWEN	OR	ON	2020/09/18 09:55

			T; IBM_TDB			
S79	1,446	confirm$5 with delivered near2 (good or item or person or personel or package)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/09/18 10:03
S80	904	(vehicle or car or automobile or driver or cab or train or rider or ride adj shar$3 or uber or lyft) and S79	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/09/18 10:03

9/21/2020 1:23:40 PM
C:\Users\kferguson\Documents\EAST\Workspaces\16670220.wsp

Electronic Acknowledgement Receipt	
EFS ID:	40560139
Application Number:	16670220
International Application Number:	
Confirmation Number:	9574
Title of Invention:	SYSTEMS AND METHODS FOR UTILIZING A SHARED TRANSPORT NETWORK FOR DELIVERY OF GOODS
First Named Inventor/Applicant Name:	Sean O'SULLIVAN
Customer Number:	108449
Filer:	Sangwoo Ahn/Victoria Lyon
Filer Authorized By:	Sangwoo Ahn
Attorney Docket Number:	00199-0001-15000
Receipt Date:	15-SEP-2020
Filing Date:	31-OCT-2019
Time Stamp:	13:01:37
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Response After Final Action	Amendment.pdf	104296 897e6af0156f6a5b23146c633459745a47c15527	no	14
Warnings:					

Information:	
Total Files Size (in bytes):	104296

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.
National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.
New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

RESPONSE UNDER 37 C.F.R. § 1.116
EXPEDITED PROCEDURE REQUESTED
EXAMINING GROUP 2648
PATENT
Customer No.: 108,449
Attorney Docket No.: 00199-0001-15000

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	)	
	)	
Sean O'SULLIVAN	)	Group Art Unit: 2648
	)	
Application No.: 16/670,220	)	Examiner: Keith Ferguson
	)	
Filed: October 31, 2019	)	Confirmation No.: 9574
	)	
For: SYSTEMS AND METHODS FOR UTILIZING A SHARED TRANSPORT NETWORK FOR DELIVERY OF GOODS	)	***VIA EFS WEB***

MAIL STOP AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Commissioner:

REPLY TO OFFICE ACTION

In reply to the Final Office Action mailed on July 16, 2020, from which the period for reply extends through October 16, 2020, and the two-month after-final period for reply extends through September 16, 2020, and pursuant to 37 C.F.R. § 1.116, Applicant proposes to amend the above-identified application as follows:

Amendments to the Claims are reflected in the listing of claims beginning on page 2 of this Reply.

Remarks follow the claim amendments section of this Reply.

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Canceled)

2. (Currently Amended) A method of transporting a good using a shared transport system, the method comprising:

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;

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;

sending, by the shared transport system, the first transport request to the transport provider device;

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;

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

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

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.

3. (Previously Presented) The method of claim 2, wherein the transport provider device includes global positioning system (GPS) technology.

4. (Previously Presented) The method of claim 3, wherein determining the location of the transport provider device comprises utilizing the GPS technology.

5. (Previously Presented) The method of claim 2, wherein determining the location of the transport provider device comprises periodically polling location information associated with the transport provider device.

6. (Previously Presented) The method of claim 2, further comprising:

sending, by the shared transport system, instructions for displaying the progress of the delivery of the first good to the first transport user device, wherein displaying the

progress of the delivery of the first good comprises displaying the location of the transport provider device on a map.

7. (Previously Presented) The method of claim 2, further comprising:

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;

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

sending, by the shared transport system, the second transport request to the transport provider device.

8. (Previously Presented) The method of claim 7, wherein updating, by the shared transport system, the provider characteristics associated with the transport provider comprises updating the available space or capacity of the transport provider.

9. (Previously Presented) The method of claim 8, wherein comparing the updated provider characteristics associated with the transport provider with the second transport request comprises comparing the updated available space or capacity of the transport provider with the second needed space or capacity for the second good.

10. (Previously Presented) The method of claim 7, wherein comparing the updated provider characteristics associated with the transport provider with the second transport request comprises comparing the current location or planned route with the second pick-up and drop-off locations.

11. (Canceled)

12. (Currently Amended) A computer system for transporting a good using a shared transport system, the system comprising:

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 functions to:

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;

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;

send, by the shared transport system, the first transport request to the transport provider device;

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;

determine, by the shared transport system, that the transport provider has picked up the first good; [[and]]

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

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.

13. (Previously Presented) The computer system of claim 12, wherein the transport provider device includes global positioning system (GPS) technology.

14. (Previously Presented) The computer system of claim 13, wherein determining the location of the transport provider device comprises utilizing the GPS technology.

15. (Previously Presented) The computer system of claim 12, wherein determining the location of the transport provider device comprises periodically polling location information associated with the transport provider device.

16. (Previously Presented) The computer system of claim 12, further including functions to:

send, by the shared transport system, instructions for displaying the progress of the delivery of the first good to the first transport user device, wherein displaying the progress of the delivery of the first good comprises displaying the location of the transport provider device on a map.

17. (Previously Presented) The computer system of claim 12, further including functions to:

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;

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;

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

send, by the shared transport system, the second transport request to the transport provider device.

18. (Previously Presented) The computer system of claim 17, wherein updating, by the shared transport system, the provider characteristics associated with the transport provider comprises updating the available space or capacity of the transport provider.

19. (Previously Presented) The computer system of claim 18, wherein comparing the updated provider characteristics associated with the transport provider with the second transport request comprises comparing the updated available space or capacity of the transport provider with the second needed space or capacity for the second good.

20. (Previously Presented) The computer system of claim 17, wherein comparing the updated provider characteristics associated with the transport provider with the second transport request comprises comparing the current location or planned route with the second pick-up and drop-off locations.

21. (Currently Amended) 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:

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;

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;

sending, by the shared transport system, the first transport request to the transport provider device;

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;

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

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

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.

REMARKS

Applicant submits this Reply in response to the Final Office Action mailed on July 16, 2020 ("Office Action").

I. Status of the Claims

By this Reply, Applicant amends claims 2, 12, and 21, and cancels claim 11. The amended claims are fully supported by the specification as originally filed. Claims 2-21 are pending in this application, of which claims 2, 12, and 21 are independent.

II. Interview

Applicant sincerely thanks Examiner Ferguson for the courtesies extended during the interview of August 19, 2020. During the interview, the Examiner and Applicant's representative discussed whether incorporating the subject matter of claim 11, which was not rejected in the Office Action, into independent claims 2, 12, and 21 would result in allowance of the application. The Examiner indicated that additional search would be needed to make that determination, however, because the Office Action did not address claim 11, a Non-Final Office Action would be issued if a reference teaching the subject matter of claim 11 were found.

III. Section 103 Rejections

Claims 2-6, 12-16, and 21 stand rejected under 35 U.S.C. § 103 as allegedly being unpatentable over various combinations of Cappel (US 2002/0011940), Sprigg (US 2008/0125967), Jones (US 6363323), Horstemeyer (US 2004/0243430),

Muramatsu (JP 2003036498), and Angert (US 2006/0010037). (Office Action at pages 3-9.)

Applicant does not necessarily agree with these rejections. However, solely to advance the prosecution of this application, Applicant has amended independent claims 2, 12, and 21 to incorporate the subject matter that was previously recited in claim 11. Again, the Office did not reject claim 11 as being obvious.

For this reason, the newly-amended claims are not rendered obvious by the cited references. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejections under Section 103.

IV. Conclusion

The Office Action contains characterizations of the claims and the related art with which the applicant does not necessarily agree. Unless expressly noted otherwise, applicant declines to subscribe to any statement or characterization in the Office Action.

In discussing the specification, claims, and drawings in this Reply, it is to be understood that Applicant is in no way intending to limit the scope of the claims to any exemplary embodiments described in the specification or abstract and/or shown in the drawings. Rather, Applicant is entitled to have the claims interpreted broadly to the maximum extent permitted by statute, regulation, and applicable case law.

Applicant respectfully requests that this Reply under 37 C.F.R. § 1.116 be entered by the Examiner, placing the claims in condition for allowance. The proposed claim amendments do not raise new issues or necessitate the undertaking of any additional search of the art by the Examiner. Therefore, this Reply should allow for

immediate action by the Examiner. Further, if the Examiner cites a new reference to address the present claims, the finality of the Office Action should be withdrawn and a Non-Final Office Action issued as the claim amendments do not raise any new issues.

Furthermore, Applicant respectfully points out that the Final Office Action presented new arguments as to the application of the art against the pending claims. It is respectfully submitted that the entering of this Reply would allow Applicant to respond to the final rejection and place the application in condition for allowance.

Finally, Applicant submits that the entry of this Reply would place the application in better form for appeal, should the Examiner dispute the patentability of the pending claims.

In view of the foregoing remarks, Applicant submits that this claimed invention is neither anticipated nor rendered obvious in view of the prior art references cited against this application. Applicant therefore requests reconsideration and reexamination of the application, and timely allowance of the pending claims.

If the Examiner believes a telephone conversation might advance prosecution, the Examiner is invited to call Applicant's undersigned representative at (202) 422-2971.

Please grant any extensions of time required to enter this response and charge any additional required fees to Deposit Account No. 50-5906. In addition, the Commissioner is hereby authorized to charge any additional fees due and any other fees due under 37 C.F.R. § 1.16 or § 1.17 during the pendency of this application to Deposit Account No. 50-5906.

Respectfully submitted,

BOOKOFF McANDREWS, PLLC
Customer Number: 108,449

Dated: September 15, 2020

By: /Sangwoo Ahn/
Sangwoo Ahn
Reg. No. 76,905
202-422-2971

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 16/670,220	Filing Date 10/31/2019	☐ To be Mailed

ENTITY: ☐ LARGE ☑ SMALL ☐ MICRO

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A		N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A		N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*		x $50 =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*		x $230 =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).				
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))					
* If the difference in column 1 is less than zero, enter "0" in column 2.				TOTAL	

APPLICATION AS AMENDED - PART II

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT	09/15/2020	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 19	Minus	** 20	= 0		x $50 =	0
	Independent (37 CFR 1.16(h))	* 3	Minus	*** 3	= 0		x $230 =	0
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	0

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=		x $0 =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=		x $0 =	
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.	LIE
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".	/KIMBERLY N PANNELL/
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".	
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.	

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/670,220	10/31/2019	Sean O'SULLIVAN	00199-0001-15000	9574

108449 7590 07/16/2020

Bookoff McAndrews, PLLC
2020 K Street NW
Suite 400
Washington, DC 20006

EXAMINER	
FERGUSON, KEITH	

ART UNIT	PAPER NUMBER
2648	

NOTIFICATION DATE	DELIVERY MODE
07/16/2020	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

KRoss@bomcip.com
eofficeaction@appcoll.com
usptomail@bomcip.com

Office Action Summary	Application No. 16/670,220	Applicant(s) O'SULLIVAN, Sean	
	Examiner KEITH FERGUSON	Art Unit 2648	AIA (FITF) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☑ Responsive to communication(s) filed on 5/8/2020.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☑ This action is **FINAL.** 2b) ☐ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5) ☑ Claim(s) 1-21 is/are pending in the application.

5a) Of the above claim(s) 1 is/are withdrawn from consideration.

6) ☐ Claim(s) _____ is/are allowed.

7) ☑ Claim(s) 2-21 is/are rejected.

8) ☐ Claim(s) _____ is/are objected to.

9) ☐ Claim(s) _____ are subject to restriction and/or election requirement

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to **PPHfeedback@uspto.gov.**

Application Papers

10)☑ The specification is objected to by the Examiner.

11)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a)☐ All b)☐ Some** c)☐ None of the:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☑ Notice of References Cited (PTO-892)

2) ☐ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date _____.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____.

4) ☐ Other: _____.

DETAILED ACTION

Notice of Pre-AIA or AIA Status

1. The present application is being examined under the pre-AIA first to invent provisions.

Specification

4. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

(a) TITLE OF THE INVENTION.

(b) CROSS-REFERENCE TO RELATED APPLICATIONS.

(c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.

(d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.

(e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC OR AS A TEXT FILE VIA THE OFFICE ELECTRONIC FILING SYSTEM (EFS-WEB).

(f) STATEMENT REGARDING PRIOR DISCLOSURES BY THE INVENTOR OR A JOINT INVENTOR.

(g) BACKGROUND OF THE INVENTION.

(1) Field of the Invention.

(2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.

(h) BRIEF SUMMARY OF THE INVENTION.

(i) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).

(j) DETAILED DESCRIPTION OF THE INVENTION.

(k) CLAIM OR CLAIMS (commencing on a separate sheet).

(l) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).

(m) SEQUENCE LISTING. (See MPEP § 2422.03 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document either on compact disc or as a text file via the Office electronic filing system (EFS-Web.)

Claim Rejections - 35 USC § 103

5. In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

6. The following is a quotation of pre-AIA 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 2-4, 12-14 and 21 is/are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Cappel (US 20020011940) (applicants IDS) in view of Sprigg (US 20080125967) , Jones (US 6,263,323) and Horstemeyer (U.S. 2004/0243430), newly recited reference.

Regarding claim 2, Cappel disclose a method of transporting a passenger (item) using a shared transport system (abstract, fig. 3 and P:0051-P:0062), the method comprising: receiving, by the shared

transport system (P:0053), a first transport request from a first transport user device for delivery of a first item (fig. 3 and P:0051), wherein the first transport request includes a first pick-up location (P:0051), a first drop-off location (P:0051) and a first needed space (riders space)(P:0003); identifying, by the shared transport system (P:0041 and P:0044), a STP (transport provider) based on comparing provider characteristics of the transport provider with the first transport request)(P:0041, P:0044 and P:0050-P:0053), the provider characteristics including a current location or planned route and an available space or capacity of the transport provider (i.e. onboard/off board passenger)(P:0003, P:0044 and P:0050-P:0053), the provider characteristics being received from a transport provider device of the transport provider (P:0053-P:0054); sending, by the shared transport system, the first transport request to the transport provider device (P:0053-P:0054); sending, by the shared transport system, first transport instructions to the transport provider device (P:0053). Cappel differs from claim 2 of the present invention in that it does not explicit disclose determining that the transport provider has accepted the first transport request; determining, by the shared transport system, that the transport provider has picked up the first item; determining, by the shared transport system, progress of the delivery of the first item based on determining a location of the transport provider device and "receiving ... a first transport request from a first transport user device for delivery of a first good ... a first needed space or capacity for the first good" and "determining ... that the transport provider has picked up the first good. Sprigg teaches in the same field of endeavor, a transport provider accepted the first transport request (fig. 1-6 and P:0042). Jones teaches in the same field of endeavor, delivery vehicles for delivering items to a destination or for pick-up items at a destination, where "items" can include packages, goods, or persons to be delivered of pick-up (col. 4 line 63 through col. 5 line 5), determining, by a base station manager (shared transport system) (col. 2 lines 11-43 and col. 10 lines 32-49), that a vehicle (transport provider) has picked up the first item (col. 14 lines 61-67); and determining, by the shared transport system (col. 10 lines 32-49), progress of the delivery of the first item based on

determining a location of the transport provider device (col. 10 lines 32-49 and col. 14 lines 61-67). Horstemeyer teaches a mobile thing that is destined to pickup or deliver an item at a stop location (abstract); and "Items" can include any of many various types of packages or goods to be delivered or picked up, for example but not limited to, mail, pizza, beverages, shipping vessels, containers, produce, etc. Furthermore, items can also include "persons" to be picked up or delivered, such as when a bus picks up and/or delivers passengers at different bus stops or such as when an airplane picks up and/or delivers passengers at airports "(P:0089,P:0425-P:0426). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Cappel with determining that the transport provider has accepted the first transport request; determining, by the shared transport system, that the transport provider has picked up the first item; determining, by the shared transport system, progress of the delivery of the first item based on determining a location of the transport provider device and "receiving ... a first transport request from a first transport user device for delivery of a first good ... a first needed space or capacity for the first good" and "determining ... that the transport provider has picked up the first good in order for the passenger transportation system to know if the transportation provider is going to pick up the passenger, if the transportation provider has space for the passenger and/or goods and monitor the progress of the transportation device in rout to the bus station to pick up the passenger and/or goods to be transported to its final destination, as taught by Sprigg, Jones and Horstemeyer.

Regarding claims 12 and 21, Cappel disclose computer system/non-transitory readable medium (P:0003, fig. 1 number 10, 5 and 25, P:0041-P:0042 and P:0044) for transporting an item using a shared transport system (P:0003, fig. 1 and P:0042) , the system comprising: a database (memory) (fig. 1 number 10, 5 and 25) having processor-readable instructions stored therein (P:0041-P:0042); and a processor (inherent when using world wide web, taught in P:0042) configured to access the memory

and execute the processor-readable instructions (P:0003, fig. 1 and P:0042) , which when executed by the processor configures the processor to perform a plurality of functions(P:0003, fig. 1 and P:0041-P:0042) , including functions to: receiving, by the shared transport system (P:0053), a first transport request from a first transport user device for delivery of a first item (fig. 3 and P:0051), wherein the first transport request includes a first pick-up location (P:0051), a first drop-off location (P:0051) and a first needed space (riders space)(P:0003); identifying, by the shared transport system (P:0041 and P:0044), a STP (transport provider) based on comparing provider characteristics of the transport provider with the first transport request)(P:0041, P:0044 and P:0050-P:0053), the provider characteristics including a current location or planned route and an available space or capacity of the transport provider (i.e. onboard/off board passenger)(P:0003, P:0044 and P:0050-P:0053), the provider characteristics being received from a transport provider device of the transport provider (P:0053-P:0054); sending, by the shared transport system, the first transport request to the transport provider device (P:0053-P:0054); sending, by the shared transport system, first transport instructions to the transport provider device (P:0053). Cappel differs from claims 12 and 21 of the present invention in that it does not explicit disclose determining that the transport provider has accepted the first transport request; determining, by the shared transport system, that the transport provider has picked up the first item; determining, by the shared transport system, progress of the delivery of the first item based on determining a location of the transport provider device and "receiving ... a first transport request from a first transport user device for delivery of a first good ... a first needed space or capacity for the first good" and "determining ... that the transport provider has picked up the first good. Sprigg teaches in the same field of endeavor, a transport provider accepted the first transport request (fig. 1-6 and P:0042). Jones teaches in the same field of endeavor, delivery vehicles for delivering items to a destination or for pick-up items at a destination, where "items" can include packages, goods, or persons to be delivered of pick-up (col. 4 line 63 through col. 5 line 5), determining, by a base station manager (shared transport system) (col. 2

lines 11-43 and col. 10 lines 32-49), that a vehicle (transport provider) has picked up the first item (col. 14 lines 61-67); and determining, by the shared transport system (col. 10 lines 32-49), progress of the delivery of the first item based on determining a location of the transport provider device (col. 10 lines 32-49 and col. 14 lines 61-67). Horstemeyer teaches a mobile thing that is destined to pickup or deliver an item at a stop location (abstract); and "Items" can include any of many various types of packages or goods to be delivered or picked up, for example but not limited to, mail, pizza, beverages, shipping vessels, containers, produce, etc. Furthermore, items can also include "persons" to be picked up or delivered, such as when a bus picks up and/or delivers passengers at different bus stops or such as when an airplane picks up and/or delivers passengers at airports "(P:0089,P:0425-P:0426). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Cappel with determining that the transport provider has accepted the first transport request; determining, by the shared transport system, that the transport provider has picked up the first item; determining, by the shared transport system, progress of the delivery of the first item based on determining a location of the transport provider device and "receiving ... a first transport request from a first transport user device for delivery of a first good ... a first needed space or capacity for the first good" and "determining ... that the transport provider has picked up the first good in order for the passenger transportation system to know if the transportation provider is going to pick up the passenger, if the transportation provider has space for the passenger and/or goods and monitor the progress of the transportation device in rout to the bus station to pick up the passenger and/or goods to be transported to its final destination, as taught by Sprigg, Jones and Horstemeyer.

Regarding claims 3,4,13 and 14, Cappel disclose the transport provider device includes global positioning system (GPS) technology (P:0050 and P:0065).

8. Claims 5 and 15 is/are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Cappel (US 20020011940) (IDS) in view of Sprigg (US 20080125967), Jones (US 6,263,323) and Horstemeyer (U.S. 2004/0243430), newly recited reference as applied to claims 2 and 12 above and in further view of Muramatsu et al. (JP 2003036498 A).

Regarding claims 5 and 15, the combination of Cappel , Sprigg , Jones and Horstemeyer differs from claims 5 and 15 of the present invention in that they do not explicit disclose periodically polling location information associated with the transport provider device. Muramatsu et al. teaches periodically polling position information associated with taxi vehicles (abstract, solution). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Cappel , Sprigg , Jones and Horstemeyer with periodically polling location information associated with the transport provider device in order for the passenger transportation system to know where the transport devices are located at all times when making a passenger pick-up, as taught by Muramatsu et al.

9. Claims 6 and 16 is/are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Cappel (US 20020011940) (IDS) in view of Sprigg (US 20080125967), Jones (US 6,263,323)) and Horstemeyer (U.S. 2004/0243430) as applied to claims 2 and 12 above and in further view of Angert et al. (US 20060010037).

Regarding claims 6 and 16, the combination of of Cappel , Sprigg , Jones and Horstemeyer differs from claims 6 and 16 of the present invention in that they do not explicit disclose displaying the location of the transport provider device on a map. Angert et al. teaches an internet server that serves a graphical user interface of users to bid for purchase of food items (P:0015), a time of arrival may be related to the users via time/ and/or map display (P:0015), the user may view an audio-visual with a driver, a delivery/preparation vehicle or view the outside of the vehicle so that progress through city

streets, etc, may be tracked (P:0015). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of of Cappel , Sprigg , Jones and Horstemeyer with displaying the location of the transport provider device on a map in order for the passenger transportation system to inform the passenger that the transport device is on its way and allow the passenger to view the location of the transport device on a map to see how close the transport device is to the passenger, as taught by Angert et al..

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KEITH FERGUSON whose telephone number is (571)272-7865. The examiner can normally be reached on M-F 7 am -3 pm.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wesley L Kim can be reached on (571) 272-7867. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see https://ppair-my.uspto.gov/pair/PrivatePair. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/KEITH FERGUSON/
Primary Examiner, Art Unit 2648
July 13, 2020

Notice of References Cited	Application/Control No. 16/670,220	Applicant(s)/Patent Under Reexamination O'SULLIVAN, Sean	
	Examiner KEITH FERGUSON	Art Unit 2648	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-20040243430-A1	12-2004	Horstemeyer, Scott A.	H04L63/08	340/928
	B					
	C					
	D					
	E					
	F					
	G					
	H					
	I					
	J					
	K					
	L					
	M					

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/670,220	O'SULLIVAN, Sean
	Examiner	**Art Unit**
	KEITH FERGUSON	2648

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

CLAIMS

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	02/05/2020	07/13/2020							
	1	✓	-							
	2	✓	✓							
	3	✓	✓							
	4	✓	✓							
	5	✓	✓							
	6	✓	✓							
	7	✓	✓							
	8	✓	✓							
	9	✓	✓							
	10	✓	✓							
	11	✓	✓							
	12	✓	✓							
	13	✓	✓							
	14	✓	✓							
	15	✓	✓							
	16	✓	✓							
	17	✓	✓							
	18	✓	✓							
	19	✓	✓							
	20	✓	✓							
	21	✓	✓							

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/670,220	O'SULLIVAN, Sean
	Examiner	Art Unit
	KEITH FERGUSON	2648

CPC - Searched*		
Symbol	Date	Examiner
G06Q50/30, G06Q10/00, G06Q10/025, G06Q10/0833	02/05/2020	KF

CPC Combination Sets - Searched*		
Symbol	Date	Examiner
G06Q50/30, G06Q10/00, G06Q10/025, G06Q10/0833, G08G1/123, G08G1/017, G08G1/202	02/05/2020	KF

US Classification - Searched*			
Class	Subclass	Date	Examiner

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	Date	Examiner
east search notes included	02/05/2020	KF
inventor search	02/05/2020	KF
consulted with SPE about 112 first paragraph	02/05/2020	KF
consulted with SPE about 112 first paragraph	07/13/2020	KF
update search notes	07/13/2020	KF

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	58,915	(pickup or pick$3 adj up pick$up or gather$3) near1 (individual or user or client or passenger or person or people)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/24 13:38
S2	8,251	(o'sullivan or osullivan).in.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/24 13:39
S3	42	S1 and S2	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/24 13:39
S4	8,855	(taxi or cab or train) and S1	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/24 13:42
S5	64	lost near3 (item or article or briefcase or purse or equipment or notebook or laptop) and S4	US-PGPUB; USPAT;	OR	ON	2020/01/24 13:44

			USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			
S6	175	lost near3 (item or article or briefcase or purse or equipment or notebook or laptop) same (driver or shauffer or pilot)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/24 13:59
S7	45	(taxi or cab or train) and S6	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/24 13:59
S8	1,306	(taxi or cab or train) and lost near3 (item or article or briefcase or purse or equipment or notebook or laptop)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/24 14:08
S9	1,306	(taxi or cab or train) and lost$3 near3 (item or article or briefcase or purse or equipment or notebook or laptop)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/24 14:09
S11	1,187	lost$2 near3 (item or article or briefcase or purse or equipment or notebook or laptop) same (vehicle or car or automobile or driver or cab or train)	US-PGPUB; USPAT; USOCR;	OR	ON	2020/01/24 14:10

			FPRS; EPO; JPO; DERWENT; IBM_TDB			
S12	1,704	(lost$2 or missing) near3 (item or article or briefcase or purse or equipment or notebook or laptop) same (vehicle or car or automobile or driver or cab or train)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/24 14:10
S13	323	S9 and S12	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/24 14:11
S14	1,306	(taxi or cab or train) and lost$3 near3 (item or article or briefcase or purse or equipment or notebook or laptop)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/24 15:41
S15	1,704	(lost$2 or missing) near3 (item or article or briefcase or purse or equipment or notebook or laptop) same (vehicle or car or automobile or driver or cab or train)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/24 15:41
S16	323	S14 and S15	US-PGPUB; USPAT; USOCR; FPRS;	OR	ON	2020/01/24 15:41

			EPO; JPO; DERWENT; IBM_TDB			
S17	45	S16 AND ((G06Q50/30 OR G06Q10/00 OR G06Q10/025 OR G06Q10/0833 OR G08G1/123 OR G08G1/017 OR G08G1/202).CPC. OR (G06Q10/00 OR G06Q50/30 OR G08G1/123 OR G08G1/017).IPCR.)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/24 15:41
S18	6,705	(pick-up or pick adj up) near3 (item or article or good or merchandise or suppl$3) and deliver$3 with (item or article or good or merchandise or suppl$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/02/03 09:35
S19	8,360	(progress or advanc$5) with (deliver$3 or transport$3 or convery or carry$3) with (item or article or good or merchandise or suppl$3) same (location$3 or position$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/02/03 09:39
S20	270	S18 and S19	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/02/03 09:40
S21	13,667,272	(vehicle or car or automobile or driver or cab or train or rider or ride adj shar$3 or uber or lyft)	US-PGPUB; USPAT; USOCR; FPRS; EPO;	OR	ON	2020/02/03 10:59

			JPO; DERWENT; IBM_TDB			
S22	8,360	(progress or advanc$5) with (deliver$3 or transport$3 or convery or carry$3) with (item or article or good or merchandise or suppl$3) same (location$3 or position$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/02/03 11:01
S23	3,220	S22 and S21	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/02/03 11:01
S24	206	(pick-up or pick adj up) near3 (item or article or good or merchandise or suppl$3) and S23	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/02/03 11:03
S25	3	("20020011940").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2020/02/03 13:01
S27	8,360	(progress or advanc$5) with (deliver$3 or transport$3 or convery or carry$3) with (item or article or good or merchandise or suppl$3) same (location$3 or position$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO;	OR	ON	2020/02/03 13:06

			DERWENT; IBM_TDB			
S28	0	"20020011940".pn. and (item or article or good or merchandise or suppl$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/02/03 13:09
S29	0	"20020011940".pn. and thing	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/02/03 13:12
S30	2	"20020011940".pn. and shar$3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/02/03 13:28
S31	2	"20020011940".pn. and passengers	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/02/03 13:42
S32	2,287	ferguson.xa.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWEN	OR	ON	2020/02/04 13:15

			T; IBM_TDB			
S33	568	(o'sullivan or osullivan).in. and display$ and transport	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/02/04 13:16
S34	45	gps and S33	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/02/04 13:17
S35	3	"20110102165".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/02/04 13:27
S36	2	"20030139941".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/02/04 13:28
S37	2	"20090326991".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWEN	OR	ON	2020/02/04 13:29

			T; IBM_TDB			
S38	15	periodical$3 near1 poll$3 near2 (taxi or cab or train or transport or driver) same (location$3 or position$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/02/04 13:38
S39	21	periodical$3 near1 poll$3 near2 (location$3 or position$3) same (taxi or cab or train or transport$3 or driver)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/02/04 13:40
S40	65	periodic$5 near1 poll$3 near2 (location$3 or position$3) same (taxi or cab or train or transport$3 or driver)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/02/04 13:42
S41	227	periodic$5 near1 poll$3 near4 (taxi or cab or train or transport$3 or driver)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/02/04 13:44
S42	176	(location$3 or position$3) and S41	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWEN	OR	ON	2020/02/04 13:48

			T; IBM_TDB			
S43	561,100	(deliver$3 or transport$3 or convery or carry$3) with (item or article or good or merchandise or suppl$3 or product or import or export or freight or cargo or shipment) same (location$3 or position$3 or area)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/06/11 14:13
S44	31,626	(pick-up or pick adj up) with (item or article or good or merchandise or suppl$3 or product or import or export or freight or cargo or shipment) same (location$3 or position$3 or area)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/06/11 14:16
S45	13,224	S43 and S44	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/06/11 14:17
S46	2,227,465	(spac$3 or capacit$3) with (item or article or good or merchandise or suppl$3 or product or import or export or freight or cargo or shipment)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/06/11 14:52
S47	5,433	S45 and S46	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWEN	OR	ON	2020/06/11 14:53

			T; IBM_TDB			
S48	13,863,610	(truck or vehicle or van or car or automobile or train)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/06/11 14:55
S49	3,458	S47 and S48	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/06/11 14:55
S50	232,449	(truck or vehicle or van or car or automobile or train) same (deliver$3 or transport$3 or convery or carry$3) with (item or article or good or merchandise or suppl$3 or product or import or export or freight or cargo or shipment)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/06/11 14:56
S51	2,442	S49 and S50	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/06/11 14:57
S52	497	(truck or vehicle or van or car or automobile or train) same (deliver$3 or transport$3 or convery or carry$3).ab. and S51	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWEN	OR	ON	2020/06/11 14:58

			T; IBM_TDB			
S53	131	S52 AND ((G06Q50/30 OR G06Q10/00 OR G06Q10/025 OR G06Q10/0833 OR G08G1/123 OR G08G1/017 OR G08G1/202).CPC. OR (G06Q10/00 OR G06Q50/30 OR G08G1/123 OR G08G1/017).IPCR.)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/06/11 15:12
S54	149,079	(pick-up or pick adj up or drop-off or drop adj off) with (good or item or article or unit or object or thing)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/07/02 09:41
S55	3,940,477	(ride-shar$3 or transport$6 or deliver$3 or truck or airplane or aircraft or train or uber or ups or fedex) with (good or item or article or unit or object or thing)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/07/02 09:45
S56	145,320	S54 and S55	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/07/02 09:47
S57	74,772	request$3 with (ride-shar$3 or transport$6 or deliver$3 or truck or airplane or aircraft or train or uber or ups or fedex) with (good or item or article or unit or object or thing)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWEN	OR	ON	2020/07/02 09:55

			T; IBM_TDB			
S58	4,354	S56 and S57	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/07/02 09:58
S59	3,601,471	(ride-shar$3 or transport$6 or deliver$3 or uber or ups or fedex) with (good or item or article or unit or object or thing)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/07/02 10:00
S60	4,353	S58 and S59	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/07/02 10:01
S61	91,106	(identify$3 or identit$3 or identifier or nam$3 or identification or id) with (ride-shar$3 or transport$6 or deliver$3 or uber or ups or fedex or provider or provid$3) near3 (good or item or article or unit or object or thing)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/07/02 10:05
S62	1,665	S60 and S61	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWEN	OR	ON	2020/07/02 10:07

			T; IBM_TDB			
S63	1,095,191	(room or capacit$3 or spac$3) near3 (good or item or article or unit or object or thing)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/07/02 10:08
S64	522	S62 and S63	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/07/02 10:08
S65	14,504	accept$3 near1 request$3 same (good or item or article or unit or object or thing)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/07/02 10:10
S66	16	S64 and S65	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/07/02 10:14
S67	4,142,773	(ride-shar$3 or transport$6 or deliver$3 or truck or airplane or aircraft or train or uber or ups or fedex) same (location$3 or area or route)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWEN	OR	ON	2020/07/02 11:03

			T; IBM_TDB			
S68	508	S64 and S67	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/07/02 11:04
S69	310	(gps or global adj system) and S68	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/07/02 11:04
S70	0	("20040243430.pn.and(goodoritemorcapacit$3)").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2020/07/13 12:27
S71	2	"20040243430".pn. and (good or item or capacit$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/07/13 12:28

7/13/2020 2:06:13 PM
C:\Users\kferguson\Documents\EAST\Workspaces\16670220.wsp

Bibliographic Data

Application No: 16/670,220

Foreign Priority claimed: ○ Yes ◉ No

35 USC 119 (a-d) conditions met: ☐ Yes ☑ No ☐ Met After Allowance

Verified and Acknowledged: /KEITH FERGUSON/ (Examiner's Signature) | KF (Initials)

Title: SYSTEMS AND METHODS FOR UTILIZING A SHARED TRANSPORT NETWORK FOR DELIVERY OF GOODS

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
10/31/2019	455	2648	00199-0001-15000
RULE			

APPLICANTS

CARMA TECHNOLOGY LIMITED, Cork City, IRELAND

INVENTORS

Sean O'SULLIVAN Princeton, NJ, UNITED STATES

CONTINUING DATA

This application is a CON of 16564819 09/09/2019 PAT 10672271

16564819 is a CON of 16197953 11/21/2018 PAT 10453339

16197953 is a CON of 15998864 08/17/2018

15998864 is a CON of 12924487 09/28/2010 PAT 10083608

12924487 is a DIV of 12069656 02/12/2008 PAT 7840427

12069656 has PRO of 60900808 02/12/2007

FOREIGN APPLICATIONS

IF REQUIRED, FOREIGN LICENSE GRANTED**

11/19/2019

**** SMALL ENTITY ****

STATE OR COUNTRY

UNITED STATES

ADDRESS

Bookoff McAndrews, PLLC
2020 K Street NW
Suite 400
Washington, DC 20006
UNITED STATES

FILING FEE RECEIVED

$2,855

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 16/670,220	Filing Date 10/31/2019	☐ To be Mailed

ENTITY: ☐ LARGE ☑ SMALL ☐ MICRO

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A		N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A		N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*		x $50 =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*		x $230 =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).				
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))					
* If the difference in column 1 is less than zero, enter "0" in column 2.				TOTAL	

APPLICATION AS AMENDED - PART II

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT	05/08/2020	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 20	Minus	** 20	= 0		x $50 =	0
	Independent (37 CFR 1.16(h))	* 3	Minus	*** 3	= 0		x $230 =	0
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	0

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=		x $0 =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=		x $0 =	
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.	LIE
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".	/MINNIE A JACKSON/
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".	
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.	

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Electronic Acknowledgement Receipt	
EFS ID:	39387190
Application Number:	16670220
International Application Number:	
Confirmation Number:	9574
Title of Invention:	SYSTEMS AND METHODS FOR UTILIZING A SHARED TRANSPORT NETWORK FOR DELIVERY OF GOODS
First Named Inventor/Applicant Name:	Sean O'SULLIVAN
Customer Number:	108449
Filer:	Sangwoo Ahn/Victoria Lyon
Filer Authorized By:	Sangwoo Ahn
Attorney Docket Number:	00199-0001-15000
Receipt Date:	08-MAY-2020
Filing Date:	31-OCT-2019
Time Stamp:	10:50:12
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Amendment/Req. Reconsideration-After Non-Final Reject	Amendment.pdf	107713 4640fc040fb1e129ce60643b6061c84b3a71af39	no	15

Warnings:

Information:	
Total Files Size (in bytes):	107713

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.
National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.
New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PATENT
Customer No.: 108,449
Attorney Docket No.: 00199-0001-15000

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	)	
	)	
Sean O'SULLIVAN	)	Group Art Unit: 2648
	)	
Application No.: 16/670,220	)	Examiner: Keith Ferguson
	)	
Filed: October 31, 2019	)	Confirmation No.: 9574
	)	
For: SYSTEMS AND METHODS FOR UTILIZING A SHARED TRANSPORT NETWORK FOR DELIVERY OF GOODS	)	***VIA EFS WEB***

MAIL STOP AMENDMENT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Commissioner:

REPLY TO OFFICE ACTION

In reply to the Non-final Office Action mailed on February 10, 2020, from which the period for reply extends through May 11, 2020 (as May 10, 2020, falls on a Sunday), Applicant amends the above-identified application as follows:

Amendments to the Claims are reflected in the listing of claims beginning on page 2 of this Reply.

Remarks follow the claim amendments section of this Reply.

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Canceled)

2. (Currently Amended) A method of transporting ~~an item~~ a good using a shared transport system, the method comprising:

receiving, by the shared transport system, a first transport request from a first transport user device for delivery of a first ~~item~~ 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 ~~item~~ good;

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;

sending, by the shared transport system, the first transport request to the transport provider device;

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;

determining, by the shared transport system, that the transport provider has picked up the first ~~item~~ good; and

determining, by the shared transport system, progress of the delivery of the first ~~item~~ good based on determining a location of the transport provider device.

3. (Previously Presented) The method of claim 2, wherein the transport provider device includes global positioning system (GPS) technology.

4. (Previously Presented) The method of claim 3, wherein determining the location of the transport provider device comprises utilizing the GPS technology.

5. (Previously Presented) The method of claim 2, wherein determining the location of the transport provider device comprises periodically polling location information associated with the transport provider device.

6. (Currently Amended) The method of claim 2, further comprising:

sending, by the shared transport system, instructions for displaying the progress of the delivery of the first ~~item~~ good to the first transport user device, wherein displaying the progress of the delivery of the first ~~item~~ good comprises displaying the location of the transport provider device on a map.

7. (Currently Amended) The method of claim 2, further comprising:

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 ~~item~~ 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 ~~item~~ good;

determining, by the shared transport system, that the transport provider is available for the delivery of the second ~~item~~ good based on comparing the updated provider characteristics associated with the transport provider with the second transport request; and

sending, by the shared transport system, the second transport request to the transport provider device.

8. (Previously Presented) The method of claim 7, wherein updating, by the shared transport system, the provider characteristics associated with the transport provider comprises updating the available space or capacity of the transport provider.

9. (Currently Amended) The method of claim 8, wherein comparing the updated provider characteristics associated with the transport provider with the second transport request comprises comparing the updated available space or capacity of the transport provider with the second needed space or capacity for the second ~~item~~ good.

10. (Previously Presented) The method of claim 7, wherein comparing the updated provider characteristics associated with the transport provider with the second transport request comprises comparing the current location or planned route with the second pick-up and drop-off locations.

11. (Currently Amended) The method of claim 2, further comprising:

determining, by the shared transport system, that the transport provider has delivered the first ~~item~~ 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 ~~item~~ good and the transport provider device no longer exists.

12. (Currently Amended) A computer system for transporting ~~an item~~ a good using a shared transport system, the system comprising:

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 functions to:

receive, by the shared transport system, a first transport request from a first transport user device for delivery of a first ~~item~~ 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 ~~item~~ good;

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;

send, by the shared transport system, the first transport request to the transport provider device;

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;

determine, by the shared transport system, that the transport provider has picked up the first ~~item~~ good; and

determining, by the shared transport system, progress of the delivery of the first ~~item~~ good based on determining a location of the transport provider device.

13. (Previously Presented) The computer system of claim 12, wherein the transport provider device includes global positioning system (GPS) technology.

14. (Previously Presented) The computer system of claim 13, wherein determining the location of the transport provider device comprises utilizing the GPS technology.

15. (Previously Presented) The computer system of claim 12, wherein determining the location of the transport provider device comprises periodically polling location information associated with the transport provider device.

16. (Currently Amended) The computer system of claim 12, further including functions to:

send, by the shared transport system, instructions for displaying the progress of the delivery of the first ~~item~~ good to the first transport user device, wherein displaying the progress of the delivery of the first ~~item~~ good comprises displaying the location of the transport provider device on a map.

17. (Currently Amended) The computer system of claim 12, further including functions to:

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;

receive, by the shared transport system, a second transport request from a second transport user device for delivery of a second ~~item~~ 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 ~~item~~ good;

determine, by the shared transport system, that the transport provider is available for the delivery of the second ~~item~~ good based on comparing the updated provider

characteristics associated with the transport provider with the second transport request; and

send, by the shared transport system, the second transport request to the transport provider device.

18. (Previously Presented) The computer system of claim 17, wherein updating, by the shared transport system, the provider characteristics associated with the transport provider comprises updating the available space or capacity of the transport provider.

19. (Currently Amended) The computer system of claim 18, wherein comparing the updated provider characteristics associated with the transport provider with the second transport request comprises comparing the updated available space or capacity of the transport provider with the second needed space or capacity for the second ~~item~~ good.

20. (Previously Presented) The computer system of claim 17, wherein comparing the updated provider characteristics associated with the transport provider with the second transport request comprises comparing the current location or planned route with the second pick-up and drop-off locations.

21. (Currently Amended) 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 ~~an item~~ a good using a shared transport system, the plurality of functions comprising:

receiving, by the shared transport system, a first transport request from a first transport user device for delivery of a first ~~item~~ 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 ~~item~~ good;

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;

sending, by the shared transport system, the first transport request to the transport provider device;

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;

determining, by the shared transport system, that the transport provider has picked up the first ~~item~~ good; and

determining, by the shared transport system, progress of the delivery of the first ~~item~~ good based on determining a location of the transport provider device.

REMARKS

Applicant submits this Reply in response to the Non-Final Office Action mailed on February 10, 2020 ("Office Action").

I. Status of the Claims

By this Reply, Applicant amends claims 2, 6 – 7, 9, 11 – 12, 16 – 17, 19, and 21. The amended claims are fully supported by the specification as originally filed. Claims 2-21 are pending in this application, of which claims 2, 12, and 21 are independent.

II. Interview

Applicant sincerely thanks Examiner Ferguson for the courtesies extended during the interview of April 30, 2020. During the interview, the Examiner and Applicant's representative discussed the rejections under Section 112 and Section 103 in view of proposed claim amendments. The Examiner agreed that the proposed claims would likely overcome the Section 112 rejections, and also the cited references under Section 103.

The claims presented in this Reply are consistent with the proposed claims discussed during the interview. Therefore, Applicant respectfully requests favorable consideration of the claims presented herein.

III. Section 112 Rejections

In the Office Action, claims 1-21 stand rejected under 35 U.S.C. § 112(a) as allegedly failing to comply with the written description requirement. The Office alleges

that the disclosure lacks description on the transport of an "item," and merely discusses a messaging system for contacting a rider in the event of "a lost or found item."

Although Applicant does not necessarily agree with this rationale, Applicant has amended the claims to recite a "good" in lieu of an "item." The specification explicitly teaches in pages 4-5 "match[ing] a need to move individuals and/or goods from one geographic point to another geographic point" and "incorporating unused transportation capacity (i.e., empty seats) with a real-time allocation and matching service that enables individuals and goods to conveniently hire that capacity." The specification also states in page 42 "[a] modification of the above system to allow it to be used to transport goods and merchandise by having the Transport User send packages instead of using the system for personal transport." In other words, the use or application of the disclosed system in transporting goods in addition to persons was fully contemplated in the specification at the time of its original filing.

For convenience, below is a chart listing exemplary, non-limiting sections in the specification that provide examples of support for the language at issue of claims 1 and 6.

Claim language	**Exemplary non-limiting descriptions from the specification**
determining … that the transport provider has picked up the first good; and determining … progress of the delivery of the first good based on determining a location of the transport provider device	Page 22: "at point along the way, the Rider 10 and Driver 13 could be polled for their location information to verify that the ride was progressing … The delivery of the transport service could be proven beyond a reasonable doubt through the continuous coordinated proximity between the Driver and the Rider according to the verification of simultaneous geographic proximity" Page 23: "the verification of the Rider pick-up

	and delivery could be accomplished through the use of a PIN transmitted to the Rider, the entry of that PIN by the driver" Page 42: "modification of the above system to allow it to be used to transport goods and merchandise by having the Transport User send packages instead of using the system for personal transport" Pages 51-52: "verification of the pick-up of the transport capacity by the transport provider … near-field communications between the in-vehicle system and the transport user's personal communications device … verifying the transport demand's physical presence … automatic determination of continuous proximity between the transport capacity's geographic location with the transport demand's geographic location, by period confirmation by the central tracking system of the location of the in-vehicle device and the personal communication device"
sending … instructions for displaying the progress of the delivery of the first good to the first transport user device, wherein displaying … comprises displaying the location of the transport provider device on a map	Page 34: "From the live usage data of the system, maps can be presented which show the real-time capacity of the system … live maps could be displayed which show the real time transport capacity of the network" Page 42: "modification of the above system to allow it to be used to transport goods and merchandise by having the Transport User send packages instead of using the system for personal transport" Page 47-48: "Transport User Device … a GPS phone with an ability to display graphics, serving the primary functions of … receive updates on travel information … provide proof of identity and location … Network Operations Center … Computers and Display systems networked to the Shared Transit Marketplace Server … serving the primary functions of … management of physical and logical and transportation network capacity and organization" Page 53: "ability to continuously track the physical location of an errant vehicle and the transport capacity"

	Pages 57-58: "system also provides for showing real-time, variable transport capacity on a display"

In view of the above, Applicant respectfully requests reconsideration and withdrawal of the Section 112 rejections.

IV. Section 103 Rejections

Claims 2-6, 12-16, and 21 stand rejected under 35 U.S.C. § 103 as allegedly being unpatentable over various combinations of Cappel (US 2002/0011940), Sprigg (US 2008/0125967), Jones (US 6363323), Muramatsu (JP 2003036498), and Angert (US 2006/0010037). (Office Action at pages 5-9.)

With respect to independent claims 2, 12, and 21, the cited references fail to teach or suggest at least the steps of "receiving … a first transport request from a first transport user device for delivery of a first good … a first needed space or capacity for the first good" and "determining … that the transport provider has picked up the first good." Specifically, Cappel and Sprigg are totally silent on the concept of identifying and utilizing an available transport provider to transport goods and determining the pick-up and progress of the delivery of goods. While Jones teaches monitoring the location of a vehicle, which might be carrying an item, Jones is silent on receiving a transport request comprising a needed space or capacity for a good and determining that the provider has picked up the good, as recited in claims 2, 12, and 21.

For these reasons and based on the agreement reached during the interview that the present claims would likely overcome the cited references, independent claims 2,

12, and 21 are not rendered obvious by the cited references. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the Section 103 rejections.

V. Conclusion

The Office Action contains characterizations of the claims and the related art with which the applicant does not necessarily agree. Unless expressly noted otherwise, applicant declines to subscribe to any statement or characterization in the Office Action.

In discussing the specification, claims, and drawings in this Reply, it is to be understood that Applicant is in no way intending to limit the scope of the claims to any exemplary embodiments described in the specification or abstract and/or shown in the drawings. Rather, Applicant is entitled to have the claims interpreted broadly to the maximum extent permitted by statute, regulation, and applicable case law.

In view of the foregoing remarks, Applicant submits that this claimed invention is neither anticipated nor rendered obvious in view of the prior art references cited against this application. Applicant therefore requests reconsideration and reexamination of the application, and timely allowance of the pending claims.

If the Examiner believes a telephone conversation might advance prosecution, the Examiner is invited to call Applicant's undersigned representative at (202) 808-3942.

Please grant any extensions of time required to enter this response and charge any additional required fees to Deposit Account No. 50-5906. In addition, the Commissioner is hereby authorized to charge any additional fees due and any other fees due under 37 C.F.R. § 1.16 or § 1.17 during the pendency of this application to Deposit Account No. 50-5906.

Respectfully submitted,

BOOKOFF McANDREWS, PLLC
Customer Number: 108,449

Dated: May 8, 2020

By: /Sangwoo Ahn/
Sangwoo Ahn
Reg. No. 76,905
202-808-3942

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/670,220	10/31/2019	Sean O'SULLIVAN	00199-0001-15000	9574

108449 7590 05/05/2020

Bookoff McAndrews, PLLC
2020 K Street NW
Suite 400
Washington, DC 20006

EXAMINER	
FERGUSON, KEITH	

ART UNIT	PAPER NUMBER
2648	

NOTIFICATION DATE	DELIVERY MODE
05/05/2020	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

KRoss@bomcip.com
eofficeaction@appcoll.com
usptomail@bomcip.com

Applicant-Initiated Interview Summary	**Application No.** 16/670,220	**Applicant(s)** O'SULLIVAN, Sean	
	Examiner KEITH FERGUSON	**Art Unit** 2648	**AIA (FITF) Status** No

All participants (applicant, applicants representative, PTO personnel):

(1) KEITH FERGUSON. (3) _____.

(2) Sangwoo Ahn. (4) _____.

Date of Interview: 30 April 2020.

Type: ☑ Telephonic ☐ Video Conference
☐ Personal [copy given to: ☐ applicant ☐ applicant's representative]

Exhibit shown or demonstration conducted: ☐ Yes ☑ No.
If Yes, brief description: _____.

Issues Discussed ☐101 ☐112 ☐102 ☐103 ☑Others
(For each of the checked box(es) above, please describe below the issue and detailed description of the discussion)

Claim(s) discussed: 2.

Identification of prior art discussed: art of record.

Substance of Interview
(For each issue discussed, provide a detailed description and indicate if agreement was reached. Some topics may include: identification or clarification of a reference or a portion thereof, claim interpretation, proposed amendments, arguments of any applied references etc...)

Applicant proposed claim changes to claim 2. Applicant will replace claim 2 limitation "item" with claim limitation "good" . The examiner will do a new search and/or call applicant when warranted to further process the application..

Applicant recordation instructions: The formal written reply to the last Office action must include the substance of the interview. (See MPEP section 713.04). If a reply to the last Office action has already been filed, applicant is given a non-extendable period of the longer of one month or thirty days from this interview date, or the mailing date of this interview summary form, whichever is later, to file a statement of the substance of the interview.

Examiner recordation instructions: Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.

☐ Attachment

/KEITH FERGUSON/ Primary Examiner, Art Unit 2648	

Summary of Record of Interview Requirements

Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record
A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

Title 37 Code of Federal Regulations (CFR) 1.133 Interviews
Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

37 CFR §1.2 Business to be transacted in writing.
All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiners responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicants correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:
- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:
1) A brief description of the nature of any exhibit shown or any demonstration conducted,-
2) an identification of the claims discussed,
3) an identification of the specific prior art discussed,
4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
5) a brief identification of the general thrust of the principal arguments presented to the examiner,
(The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
6) a general indication of any other pertinent matters discussed, and
7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicants record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiners version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, Interview Record OK on the paper recording the substance of the interview along with the date and the examiners initials.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
16/670,220	10/31/2019	Sean O'SULLIVAN	00199-0001-15000

CONFIRMATION NO. 9574

108449
Bookoff McAndrews, PLLC
2020 K Street NW
Suite 400
Washington, DC 20006

PUBLICATION NOTICE

OC000000115026934

Title:SYSTEMS AND METHODS FOR UTILIZING A SHARED TRANSPORT NETWORK FOR DELIVERY OF GOODS

Publication No.US-2020-0066154-A1
Publication Date:02/27/2020

NOTICE OF PUBLICATION OF APPLICATION

The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

The publication may be accessed through the USPTO's publically available Searchable Databases via the Internet at www.uspto.gov. The direct link to access the publication is currently http://www.uspto.gov/patft/.

The publication process established by the Office does not provide for mailing a copy of the publication to applicant. A copy of the publication may be obtained from the Office upon payment of the appropriate fee set forth in 37 CFR 1.19(a)(1). Orders for copies of patent application publications are handled by the USPTO's Public Records Division. The Public Records Division can be reached by telephone at (571) 272-3150 or (800) 972-6382, by facsimile at (571) 273-3250, by mail addressed to the United States Patent and Trademark Office, Public Records Division, Alexandria, VA 22313-1450 or via the Internet.

In addition, information on the status of the application, including the mailing date of Office actions and the dates of receipt of correspondence filed in the Office, may also be accessed via the Internet through the Patent Electronic Business Center at www.uspto.gov using the public side of the Patent Application Information and Retrieval (PAIR) system. The direct link to access this status information is currently https://portal.uspto.gov/pair/PublicPair. Prior to publication, such status information is confidential and may only be obtained by applicant using the private side of PAIR.

Further assistance in electronically accessing the publication, or about PAIR, is available by calling the Patent Electronic Business Center at 1-866-217-9197.

Office of Data Managment, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/670,220	10/31/2019	Sean O'SULLIVAN	00199-0001-15000	9574

108449 7590 02/10/2020

Bookoff McAndrews, PLLC
2020 K Street NW
Suite 400
Washington, DC 20006

EXAMINER	
FERGUSON, KEITH	

ART UNIT	PAPER NUMBER
2648	

NOTIFICATION DATE	DELIVERY MODE
02/10/2020	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

KRoss@bomcip.com
eofficeaction@appcoll.com
usptomail@bomcip.com

Office Action Summary	Application No. 16/670,220	Applicant(s) O'SULLIVAN, Sean	
	Examiner KEITH FERGUSON	Art Unit 2648	AIA (FITF) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☑ Responsive to communication(s) filed on 10/31/2019.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☐ This action is **FINAL.** 2b) ☑ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5) ☑ Claim(s) 1-21 is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6) ☐ Claim(s) _____ is/are allowed.

7) ☑ Claim(s) 1-21 is/are rejected.

8) ☐ Claim(s) _____ is/are objected to.

9) ☐ Claim(s) _____ are subject to restriction and/or election requirement

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to **PPHfeedback@uspto.gov.**

Application Papers

10)☑ The specification is objected to by the Examiner.

11)☑ The drawing(s) filed on 10/31/2019 is/are: a)☑ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a)☐ All b)☐ Some** c)☐ None of the:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☑ Notice of References Cited (PTO-892)

2) ☑ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date _____.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____.

4) ☐ Other: _____.

DETAILED ACTION

Notice of Pre-AIA or AIA Status

1. The present application is being examined under the pre-AIA first to invent provisions.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112(a):

> (a) IN GENERAL.—The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor or joint inventor of carrying out the invention.

The following is a quotation of the first paragraph of pre-AIA 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1-21 are rejected under 35 U.S.C. 112(a) or 35 U.S.C. 112 (pre-AIA), first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor or a joint inventor, or for pre-AIA the inventor(s), at the time the application was filed, had possession of the claimed invention. Regarding claims 1,12 and 21 "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 item", "determining, by the shared transport system, that the transport provider has picked up the first item"; and "determining, by the shared transport system, progress of the delivery of the first item based on determining a location of the transport provider device" is not disclosed in applicant's disclosure or PRO 60/900,808 dated 02/12/2007. Applicant's specification, page 26, first paragraph, recites "Normally Riders and Drivers would have no need or use for contacting each other directly; however, there could be a few circumstances where it would be useful for one to contact

the other, such as in the event of "a lost or found Item" in a car, or perhaps in certain rare cases where they need to reach each other to arrange exact transport details." However, applicant's specification does not disclose "determining, by the shared transport system, that the transport provider has picked up the first item"; and "determining, by the shared transport system, "progress of the delivery of the first item" based on "determining a location" of the "transport provider device".

3. Claims 6 and 16 are rejected under 35 U.S.C. 112(a) or 35 U.S.C. 112 (pre-AIA), first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor or a joint inventor, or for pre-AIA the inventor(s), at the time the application was filed, had possession of the claimed invention. Regarding claims 6 and 16, claim limitation "sending, by the shared transport system, instructions for displaying the progress of the delivery of the first item to the first transport user device, wherein displaying the progress of the delivery of the first item comprises displaying the location of the transport provider device on a map" is not disclosed in applicants original disclosure. Applicant's specification, page 26, first paragraph, recites "Normally Riders and Drivers would have no need or use for contacting each other directly; however, there could be a few circumstances where it would be useful for one to contact the other, such as in the event of "a lost or found Item" in a car, or perhaps in certain rare cases where they need to reach each other to arrange exact transport details."

Specification

4. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

(a) TITLE OF THE INVENTION.

(b) CROSS-REFERENCE TO RELATED APPLICATIONS.

(c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.

(d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.

(e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC OR AS A TEXT FILE VIA THE OFFICE ELECTRONIC FILING SYSTEM (EFS-WEB).

(f) STATEMENT REGARDING PRIOR DISCLOSURES BY THE INVENTOR OR A JOINT INVENTOR.

(g) BACKGROUND OF THE INVENTION.

(1) Field of the Invention.

(2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.

(h) BRIEF SUMMARY OF THE INVENTION.

(i) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).

(j) DETAILED DESCRIPTION OF THE INVENTION.

(k) CLAIM OR CLAIMS (commencing on a separate sheet).

(l) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).

(m) SEQUENCE LISTING. (See MPEP § 2422.03 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document either on compact disc or as a text file via the Office electronic filing system (EFS-Web.)

Claim Rejections - 35 USC § 103

5. In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

6. The following is a quotation of pre-AIA 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 2-4, 12-14 and 21 is/are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Cappel (US 20020011940) (applicants IDS) in view of Sprigg (US 20080125967) and Jones (US 6,263,323).

Regarding claim 2, Cappel disclose a method of transporting a passenger (item) using a shared transport system (abstract, fig. 3 and P:0051-P:0062), the method comprising: receiving, by the shared transport system (P:0053), a first transport request from a first transport user device for delivery of a first item (fig. 3 and P:0051), wherein the first transport request includes a first pick-up location (P:0051), a first drop-off location (P:0051) and a first needed space (riders space)(P:0003); identifying, by the shared transport system (P:0041 and P:0044), a STP (transport provider) based on comparing provider characteristics of the transport provider with the first transport request)(P:0041, P:0044 and P:0050-P:0053), the provider characteristics including a current location or planned route and an available space or capacity of the transport provider (i.e. onboard/off board passenger)(P:0003,

P:0044 and P:0050-P:0053), the provider characteristics being received from a transport provider device of the transport provider (P:0053-P:0054); sending, by the shared transport system, the first transport request to the transport provider device (P:0053-P:0054); sending, by the shared transport system, first transport instructions to the transport provider device (P:0053). Cappel differs from claim 2 of the present invention in that it does not explicit disclose determining that the transport provider has accepted the first transport request; determining, by the shared transport system, that the transport provider has picked up the first item; and determining, by the shared transport system, progress of the delivery of the first item based on determining a location of the transport provider device. Sprigg teaches in the same field of endeavor, a transport provider accepted the first transport request (fig. 1-6 and P:0042). Jones teaches in the same field of endeavor, delivery vehicles for delivering items to a destination or for pick-up items at a destination, where "items" can include packages, goods, or persons to be delivered of pick-up (col. 4 line 63 through col. 5 line 5), determining, by a base station manager (shared transport system) (col. 2 lines 11-43 and col. 10 lines 32-49), that a vehicle (transport provider) has picked up the first item (col. 14 lines 61-67); and determining, by the shared transport system (col. 10 lines 32-49), progress of the delivery of the first item based on determining a location of the transport provider device (col. 10 lines 32-49 and col. 14 lines 61-67). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Cappel with determining that the transport provider has accepted the first transport request; determining, by the shared transport system, that the transport provider has picked up the first item; and determining, by the shared transport system, progress of the delivery of the first item based on determining a location of the transport provider device in order for the passenger transportation system to know if the transportation provider is going to pick up the passenger and monitor the progress of the transportation device in rout to the bus station to pick up the passenger to be transported to its final destination, as taught by Sprigg and Jones.

Regarding claims 12 and 21, Cappel disclose computer system/non-transitory readable medium (P:0003, fig. 1 number 10, 5 and 25, P:0041-P:0042 and P:0044) for transporting an item using a shared transport system (P:0003, fig. 1 and P:0042) , the system comprising: a database (memory) (fig. 1 number 10, 5 and 25) having processor-readable instructions stored therein (P:0041-P:0042); and a processor (inherent when using world wide web, taught in P:0042) configured to access the memory and execute the processor-readable instructions (P:0003, fig. 1 and P:0042) , which when executed by the processor configures the processor to perform a plurality of functions(P:0003, fig. 1 and P:0041-P:0042) , including functions to: receiving, by the shared transport system (P:0053), a first transport request from a first transport user device for delivery of a first item (fig. 3 and P:0051), wherein the first transport request includes a first pick-up location (P:0051), a first drop-off location (P:0051) and a first needed space (riders space)(P:0003); identifying, by the shared transport system (P:0041 and P:0044), a STP (transport provider) based on comparing provider characteristics of the transport provider with the first transport request)(P:0041, P:0044 and P:0050-P:0053), the provider characteristics including a current location or planned route and an available space or capacity of the transport provider (i.e. onboard/off board passenger)(P:0003, P:0044 and P:0050-P:0053), the provider characteristics being received from a transport provider device of the transport provider (P:0053-P:0054); sending, by the shared transport system, the first transport request to the transport provider device (P:0053-P:0054); sending, by the shared transport system, first transport instructions to the transport provider device (P:0053). Cappel differs from claims 12 and 21 of the present invention in that it does not explicit disclose determining that the transport provider has accepted the first transport request; determining, by the shared transport system, that the transport provider has picked up the first item; and determining, by the shared transport system, progress of the delivery of the first item based on determining a location of the transport provider device. Sprigg teaches in the same field of endeavor, a

transport provider accepted the first transport request (fig. 1-6 and P:0042). Jones teaches in the same field of endeavor, delivery vehicles for delivering items to a destination or for pick-up items at a destination, where "items" can include packages, goods, or persons to be delivered of pick-up (col. 4 line 63 through col. 5 line 5), determining, by a base station manager (shared transport system) (col. 2 lines 11-43 and col. 10 lines 32-49), that a vehicle (transport provider) has picked up the first item (col. 14 lines 61-67); and determining, by the shared transport system (col. 10 lines 32-49), progress of the delivery of the first item based on determining a location of the transport provider device (col. 10 lines 32-49 and col. 14 lines 61-67). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Cappel with determining that the transport provider has accepted the first transport request; determining, by the shared transport system, that the transport provider has picked up the first item; and determining, by the shared transport system, progress of the delivery of the first item based on determining a location of the transport provider device in order for the passenger transportation system to know if the transportation provider is going to pick up the passenger and monitor the progress of the transportation device in rout to the bus station to pick up the passenger to be transported to its final destination, as taught by Sprigg and Jones.

Regarding claims 3,4,13 and 14, Cappel disclose the transport provider device includes global positioning system (GPS) technology (P:0050 and P:0065).

8. Claims 5 and 15 is/are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Cappel (US 20020011940) (IDS) in view of Sprigg (US 20080125967) and Jones (US 6,263,323) as applied to claims 2 and 12 above and in further view of Muramatsu et al. (JP 2003036498 A).

Regarding claims 5 and 15, the combination of Cappel , Sprigg and Jones differs from claims 5 and 15 of the present invention in that they do not explicit disclose periodically polling location

information associated with the transport provider device. Muramatsu et al. teaches periodically polling position information associated with taxi vehicles (abstract, solution). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Cappel , Sprigg and Jones with periodically polling location information associated with the transport provider device in order for the passenger transportation system to know where the transport devices are located at all times when making a passenger pick-up, as taught by Muramatsu et al.

9. Claims 6 and 16 is/are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Cappel (US 20020011940) (IDS) in view of Sprigg (US 20080125967) and Jones (US 6,263,323) as applied to claims 2 and 12 above and in further view of Angert et al. (US 20060010037).

Regarding claims 6 and 16, the combination of Cappel , Sprigg and Jones differs from claims 6 and 16 of the present invention in that they do not explicit disclose displaying the location of the transport provider device on a map. Angert et al. teaches an internet server that serves a graphical user interface of users to bid for purchase of food items (P:0015), a time of arrival may be related to the users via time/ and/or map display (P:0015), the user may view an audio-visual with a driver, a delivery/preparation vehicle or view the outside of the vehicle so that progress through city streets, etc, may be tracked (P:0015). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Cappel, Sprigg and Jones with displaying the location of the transport provider device on a map in order for the passenger transportation system to inform the passenger that the transport device is on its way and allow the passenger to view the location of the transport device on a map to see how close the transport device is to the passenger, as taught by Angert et al..

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KEITH FERGUSON whose telephone number is (571)272-7865. The examiner can normally be reached on M-F 7 am -3 pm.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wesley L Kim can be reached on (571) 272-7867. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/KEITH FERGUSON/
Primary Examiner, Art Unit 2648
February 5, 2020

Notice of References Cited	Application/Control No. 16/670,220	Applicant(s)/Patent Under Reexamination O'SULLIVAN, Sean	
	Examiner KEITH FERGUSON	Art Unit 2648	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-20060010037-A1	01-2006	Angert; Charles D.	G06Q10/087	705/15
*	B	US-6363323-B1	03-2002	Jones; Martin Kelly	G06Q10/08	340/989
*	C	US-20080125967-A1	05-2008	SPRIGG; Stephen A.	G01C21/343	701/422
	D					
	E					
	F					
	G					
	H					
	I					
	J					
	K					
	L					
	M					

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC Classification
*	N	JP-2003036498-A	02-200	JP	MURAMATSU, HARUJI	
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/670,220	O'SULLIVAN, Sean
	Examiner	Art Unit
	KEITH FERGUSON	2648

CPC - Searched*		
Symbol	Date	Examiner
G06Q50/30, G06Q10/00, G06Q10/025, G06Q10/0833	02/05/2020	KF

CPC Combination Sets - Searched*		
Symbol	Date	Examiner
G06Q50/30, G06Q10/00, G06Q10/025, G06Q10/0833, G08G1/123, G08G1/017, G08G1/202	02/05/2020	KF

US Classification - Searched*			
Class	Subclass	Date	Examiner

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	Date	Examiner
east search notes included	02/05/2020	KF
inventor search	02/05/2020	KF
consulted with SPE about 112 first paragraph	02/05/2020	KF

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/670,220	O'SULLIVAN, Sean
	Examiner	**Art Unit**
	KEITH FERGUSON	2648

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

CLAIMS

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	02/05/2020								
	1	✓								
	2	✓								
	3	✓								
	4	✓								
	5	✓								
	6	✓								
	7	✓								
	8	✓								
	9	✓								
	10	✓								
	11	✓								
	12	✓								
	13	✓								
	14	✓								
	15	✓								
	16	✓								
	17	✓								
	18	✓								
	19	✓								
	20	✓								
	21	✓								

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	58915	(pickup or pick$3 adj up pick$up or gather$3) near1 (individual or user or client or passenger or person or people)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/24 13:38
S2	8251	(o'sullivan or osullivan).in.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/24 13:39
S3	42	S1 and S2	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/24 13:39
S4	8855	(taxi or cab or train) and S1	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/24 13:42
S5	64	lost near3 (item or article or briefcase or purse or equipment or notebook or laptop) and S4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/24 13:44
S6	175	lost near3 (item or article or briefcase or purse or equipment or notebook or laptop) same (driver or shauffer or pilot)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/24 13:59
S7	45	(taxi or cab or train) and S6	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/24 13:59
S8	1306	(taxi or cab or train) and lost near3	US-PGPUB;	OR	ON	2020/01/24

		(item or article or briefcase or purse or equipment or notebook or laptop)	USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			14:08
S9	1306	(taxi or cab or train) and lost$3 near3 (item or article or briefcase or purse or equipment or notebook or laptop)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/24 14:09
S11	1187	lost$2 near3 (item or article or briefcase or purse or equipment or notebook or laptop) same (vehicle or car or automobile or driver or cab or train)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/24 14:10
S12	1704	(lost$2 or missing) near3 (item or article or briefcase or purse or equipment or notebook or laptop) same (vehicle or car or automobile or driver or cab or train)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/24 14:10
S13	323	S9 and S12	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/24 14:11
S14	1306	(taxi or cab or train) and lost$3 near3 (item or article or briefcase or purse or equipment or notebook or laptop)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/24 15:41
S15	1704	(lost$2 or missing) near3 (item or article or briefcase or purse or equipment or notebook or laptop) same (vehicle or car or automobile or driver or cab or train)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/24 15:41
S16	323	S14 and S15	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/24 15:41
S17	45	S16 AND ((G06Q50/30 OR G06Q10/00 OR G06Q10/025 OR G06Q10/0833 OR G08G1/123 OR G08G1/017 OR G08G1/202).CPC. OR (G06Q10/00 OR G06Q50/30 OR G08G1/123 OR G08G1/017).IPCR.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT;	OR	ON	2020/01/24 15:41

		)	IBM_TDB			
S18	6705	(pick-up or pick adj up) near3 (item or article or good or merchandise or suppl$3) and deliver$3 with (item or article or good or merchandise or suppl$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/02/03 09:35
S19	8360	(progress or advanc$5) with (deliver$3 or transport$3 or convery or carry$3) with (item or article or good or merchandise or suppl$3) same (location$3 or position$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/02/03 09:39
S20	270	S18 and S19	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/02/03 09:40
S21	13667272	(vehicle or car or automobile or driver or cab or train or rider or ride adj shar$3 or uber or lyft)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/02/03 10:59
S22	8360	(progress or advanc$5) with (deliver$3 or transport$3 or convery or carry$3) with (item or article or good or merchandise or suppl$3) same (location$3 or position$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/02/03 11:01
S23	3220	S22 and S21	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/02/03 11:01
S24	206	(pick-up or pick adj up) near3 (item or article or good or merchandise or suppl$3) and S23	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/02/03 11:03
S25	3	("20020011940").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2020/02/03 13:01
S27	8360	(progress or advanc$5) with (deliver$3 or transport$3 or convery or carry$3) with (item or article or good or merchandise or	US-PGPUB; USPAT; USOCR; FPRS; EPO;	OR	ON	2020/02/03 13:06

		suppl$3) same (location$3 or position$3)	JPO; DERWENT; IBM_TDB			
S28	0	"20020011940".pn. and (item or article or good or merchandise or suppl$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/02/03 13:09
S29	0	"20020011940".pn. and thing	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/02/03 13:12
S30	2	"20020011940".pn. and shar$3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/02/03 13:28
S31	2	"20020011940".pn. and passengers	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/02/03 13:42
S32	2287	ferguson.xa.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/02/04 13:15
S33	568	(o'sullivan or osullivan).in. and display$ and transport	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/02/04 13:16
S34	45	gps and S33	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/02/04 13:17
S35	3	"20110102165".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/02/04 13:27
S36	2	"20030139941".pn.	US-PGPUB; USPAT;	OR	ON	2020/02/04 13:28

			USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			
S37	2	"20090326991".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/02/04 13:29
S38	15	periodical$3 near1 poll$3 near2 (taxi or cab or train or transport or driver) same (location$3 or position$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/02/04 13:38
S39	21	periodical$3 near1 poll$3 near2 (location$3 or position$3) same (taxi or cab or train or transport$3 or driver)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/02/04 13:40
S40	65	periodic$5 near1 poll$3 near2 (location$3 or position$3) same (taxi or cab or train or transport$3 or driver)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/02/04 13:42
S41	227	periodic$5 near1 poll$3 near4 (taxi or cab or train or transport$3 or driver)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/02/04 13:44
S42	176	(location$3 or position$3) and S41	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/02/04 13:48

2/5/2020 12:10:02 PM
C:\Users\kferguson\Documents\EAST\Workspaces\16670220.wsp

(19)日本国特許庁（ＪＰ）　(12) **公開特許公報（Ａ）**　(11)特許出願公開番号
特開2003－36498
（P2003－36498A）
(43)公開日　平成15年２月７日(2003.2.7)

(51)Int.Cl.[7]	識別記号	ＦＩ		テーマコード（参考）
Ｇ０８Ｇ　1/123		Ｇ０８Ｇ　1/123	Ａ	２Ｃ０３２
Ｇ０６Ｆ　17/30	１１０	Ｇ０６Ｆ　17/30	１１０Ｆ	５Ｂ０７５
	１７０		１７０Ｃ	５Ｈ１８０
17/60	１１２	17/60	１１２Ｇ	
Ｇ０８Ｇ　1/00		Ｇ０８Ｇ　1/00	Ｄ	

審査請求　未請求　請求項の数８　ＯＬ　（全 17 頁）　最終頁に続く

(21)出願番号　特願2001－221793(P2001－221793)

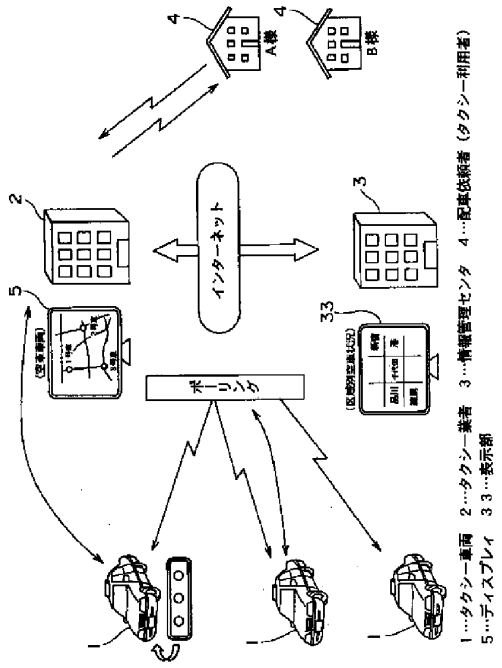
(22)出願日　平成13年７月23日(2001.7.23)

(71)出願人　000006895
矢崎総業株式会社
東京都港区三田１丁目４番28号
(72)発明者　村松　治司
静岡県裾野市御宿1500番地　矢崎総業株式会社内
(72)発明者　大石　博基
静岡県静岡市稲川２－１－34　株式会社デイシス内
(74)代理人　100075959
弁理士　小林　保　（外１名）

最終頁に続く

(54)【発明の名称】　タクシー管理システム

(57)【要約】
【課題】　タクシー業者に何の設備も設けることなく、自社の所有する全タクシー車両の空車状態を常に把握でき、タクシー利用者からのタクシー車両の配車依頼があった際に配車依頼者に適切なタクシー車両の配車を行うことができ、必要に応じてタクシー車両の運行管理データを容易に得ることのできるタクシー管理システムを提供すること。
【解決手段】　ＧＰＳ受信機を内蔵した通信ユニット１１を搭載するタクシー車両１を多数台管理するタクシー業者２の依頼に基づき該タクシー業者２の全タクシー車両１の車両データを車両データベース３５に記憶して把握する情報管理センタにおいて，前記全タクシー車両１に対して位置情報のポーリングを定期的に行い、位置情報のポーリングを受けた全タクシー車両１から応答する位置情報に基づいて前記全車両の空車状況、全車両の位置データを空車データベース３７に書込・書換を行い、該全タクシー車両１の空車状況と位置情報に基づいて地図上に空車情報を重畳して前記タクシー業者２に送信するようにする。



1

【特許請求の範囲】

【請求項１】　ＧＰＳ受信機を内蔵した通信ユニットを搭載するタクシー車両を多数台管理するタクシー業者の依頼に基づき該タクシー業者の全タクシー車両の車両データを車両データベースに記憶して把握する情報管理センタにおいて，前記全タクシー車両に対して位置情報のポーリングを定期的に行い、位置情報のポーリングを受けた全タクシー車両から応答する位置情報に基づいて前記全車両の空車状況、全車両の位置データを空車データベースに書込・書換を行い、該全タクシー車両の空車状況と位置情報に基づいて地図上に空車情報を重畳して前記タクシー業者に送信するようにしたことを特徴とするタクシー管理システム。

【請求項２】　前記全タクシー車両に対して定期的に行う位置情報のポーリングに対し、当該車両が空車のときに応答するようにしたものである請求項１に記載のタクシー管理システム。

【請求項３】　前記全タクシー車両は、タクシー車両のメータ表示フラグが空車ポジションから他のポジションに変更または、他のポジションから空車ポジションに変更になったときに、前記情報管理センタに表示フラグのポジションと表示フラグ変更位置の位置情報を送信すると共に、該位置情報の送信位置から定距離毎に位置情報を送信するようにしたものである請求項１又は２に記載のタクシー管理システム。

【請求項４】　前記全タクシー車両は、タクシー車両のメータ表示フラグが空車ポジションから他のポジションに変更または、他のポジションから空車ポジションに変更になったときに、前記情報管理センタにタクシーメータの情報を送信するようにしたものである請求項１、２又は３に記載のタクシー管理システム。

【請求項５】　前記全タクシー車両のメータ表示フラグの空車ポジションから他のポジションへの変更または、他のポジションから空車ポジションへの変更の際に前記情報管理センタに送信される位置情報及びタクシーメータ情報により、前記タクシー業者からの請求に基づき、営業日報明細票、未収管理票、時間帯別営業収益分布、時間帯別乗車回数分布のいずれかを作成して提供することを特徴とする請求項１、２、３又は４に記載のタクシー管理システム。

【請求項６】　前記タクシー業者にタクシー利用者からタクシー車両の配車依頼が有り、該タクシー業者から前記配車依頼者の位置と空車タクシー車両を特定したタクシー利用者へ配車依頼を受けた前記情報管理センタは、該配車依頼者の位置から該配車依頼者の位置に最も近い空車タクシー車両を検索し、検索した空車タクシー車両に対し前記配車依頼者の位置を地図上に重畳して該配車依頼者の位置周辺の地図を配信して迎車指示を送信して配車依頼を行うようにしたものである請求項１、２、３、４又は５に記載のタクシー管理システム。

2

【請求項７】　前記迎車指示の送信を受けたタクシー車両において送信されてきた配車依頼者の位置情報を記憶すると共に該配車依頼者の位置情報に基づいて依頼者エリアを演算して設定し、前記ＧＰＳ受信機を内蔵した通信ユニットによって求めた当該タクシー車両の位置が前記タクシー車両において設定した前記依頼者エリア内に進入したときに情報管理センタに依頼者エリア進入信号を送信し、

前記依頼者エリア進入信号を受信した情報管理センタにおいて、当該タクシー車両の配車依頼者先への到着予定時刻を演算し、当該タクシー車両の配車依頼者に対して該到着予定時刻を送信するようにしたことを特徴とする請求項１、２、３、４、５又は６に記載のタクシー管理システム。

【請求項８】　前記情報管理センタがタクシー車両に配車依頼者の位置情報を送信して迎車指示を送信する際に、当該配車依頼者の位置を示す広域道路地図を同時に送信し、前記情報管理センタがタクシー車両から依頼者エリア進入信号を受信することにより当該配車依頼者の周辺道路地図を送信するようにしたものである請求項１、２、３、４、５、６又は７に記載のタクシー管理システム。

【発明の詳細な説明】

【０００１】

【発明の属する技術分野】本発明は、ＧＰＳ受信機を内蔵した通信ユニットを搭載したタクシー車両の空車状況と、位置データを情報管理センタが管理し、タクシー業者では地図上に重畳しされた自己の所有するタクシー車両の空車情報を備え、タクシー利用者からタクシー業者にタクシー車両の配車依頼があったときに、タクシー業者から情報管理センタに配車依頼者に対してタクシー車両の配車依頼を行い、情報管理センタ側では、各タクシー車両の運行情報を把握し、タクシー業者からの請求により日報等を提供するようにしたタクシー管理システムに関する。

【０００２】

【従来の技術】従来のタクシー管理システムとしては、例えば、特開平１１－２８３１９４号に示されるようなタクシーの到着報知システムがある。この到着報知システムは、顧客へのタクシー到着報知のため、システムコストを軽減し、タクシー運転手の負担を軽減するためのものである。配車依頼を受けて到着したときに、タクシー乗務員が到着スイッチを押すことによってセンタから自動的に相手方に電話連絡するというものである。

【０００３】また、特開平６－１２４１９号に示されるようなタクシー運行管理システムがある。このタクシー運行管理システムは、営業所に備えたタクシーで記憶された情報を読み取り処理するデータ読取り装置によって、読み取った情報を基に日報を作成し分析・統計資料を作成するデータ処理装置を用いて日報、各種統計・分

析資料を作成するものである。

【０００４】

【発明が解決しようとする課題】このため、従来のタクシー管理システムにあっては、タクシー乗務員が到着スイッチを押す操作をしない限り機能しないという問題があった。

【０００５】また、従来のタクシー管理システムにあっては、営業所に設けられたデータ読取り装置を用いて読み取った情報を基に日報を作成し分析・統計資料を作成するデータ処理装置を用いて日報、各種統計・分析資料を作成するため、全てタクシー業者が処理するものとなっていたため、新たな設備が必要となり全てのタクシー業者ができるものになっていないという問題があった。

【０００６】本発明の目的は、タクシー業者に何の設備も設けることなく、自社の所有する全タクシー車両の空車状態を常に把握でき、タクシー利用者からのタクシー車両の配車依頼があった際に配車依頼者に適切なタクシー車両の配車を行うことができ、必要に応じてタクシー車両の運行管理データを容易に得ることのできるタクシー管理システムを提供することにある。

【０００７】

【課題を解決するための手段】上記の目的を達成するために、請求項１に記載のタクシー管理システムは、ＧＰＳ受信機を内蔵した通信ユニットを搭載するタクシー車両を多数台管理するタクシー業者の依頼に基づき該タクシー業者の全タクシー車両の車両データを車両データベースに記憶して把握する情報管理センタにおいて，全タクシー車両に対して位置情報のポーリングを定期的に行い、位置情報のポーリングを受けた全タクシー車両から応答する位置情報に基づいて全車両の空車状況、全車両の位置データを空車データベースに書込・書換を行い、全タクシー車両の空車状況と位置情報に基づいて地図上に空車情報を重畳してタクシー業者に送信するようにしたものである。このように構成することにより、請求項１に記載の発明によると、タクシー業者に何の設備も設けることなく、自社の所有する全タクシー車両の空車状態を常に把握することができる。

【０００８】上記の目的を達成するために、請求項２に記載のタクシー管理システムは、全タクシー車両に対して定期的に行う位置情報のポーリングに対し、タクシー車両が空車のときに応答するようにしたものである。このように構成することにより、請求項２に記載の発明によると、タクシー業者に何の設備も設けることなく、自社の所有する全タクシー車両の空車状態を常に把握でき、タクシー利用者からのタクシー車両の配車依頼があった際に配車依頼者に適切なタクシー車両の配車を行うことができる。

【０００９】上記の目的を達成するために、請求項３に記載のタクシー管理システムは、全タクシー車両を、タクシー車両のメータ表示フラグが空車ポジションから他のポジションに変更または、他のポジションから空車ポジションに変更になったときに、情報管理センタに表示フラグのポジションと表示フラグ変更位置の位置情報を送信すると共に、位置情報の送信位置から定距離毎に位置情報を送信するようにしたものである。このように構成することにより、請求項３に記載の発明によると、空車状態と迎車・賃走開始位置、賃走終了位置を的確に把握することができ、ポーリングだけでなく「空車」の通報の後の追跡、フォローができ、ポーリングの通信費を抑えることができる。

【００１０】上記の目的を達成するために、請求項４に記載のタクシー管理システムは、全タクシー車両を、タクシー車両のメータ表示フラグが空車ポジションから他のポジションに変更または、他のポジションから空車ポジションに変更になったときに、前記情報管理センタにタクシーメータの情報を送信するようにしたものである。このように構成することにより、請求項４に記載の発明によると、常時当該車両の走行距離、請求金額、乗車頻度等を的確に知ることができる。

【００１１】上記の目的を達成するために、請求項５に記載のタクシー管理システムは、全タクシー車両のメータ表示フラグの空車ポジションから他のポジションへの変更または、他のポジションから空車ポジションへの変更の際に前記情報管理センタに送信される位置情報及びタクシーメータ情報により、タクシー業者からの請求に基づき、営業日報明細票、未収管理票、時間帯別営業収益分布、時間帯別乗車回数分布のいずれかを作成して提供するようにしたものである。このように構成することにより、請求項５に記載の発明によると、常時当該車両の走行距離、請求金額、営業状態、乗車頻度等を的確に知ることができる。

【００１２】上記の目的を達成するために、請求項６に記載のタクシー管理システムは、タクシー業者にタクシー利用者からタクシー車両の配車依頼が有り、タクシー業者から配車依頼者の位置と空車タクシー車両を特定したタクシー利用者へ配車依頼を受けた前記情報管理センタは、配車依頼者の位置から配車依頼者の位置に最も近い空車タクシー車両を検索し、検索した空車タクシー車両に対し配車依頼者の位置を地図上に重畳して配車依頼者の位置周辺の地図を配信して迎車指示を送信して配車依頼を行うようにしたものであ。このように構成することにより、請求項６に記載の発明によると、タクシー利用者からのタクシー車両の配車依頼があった際に配車依頼者に最短の時間で迎車し配車依頼者のところに到着することができる。

【００１３】上記の目的を達成するために、請求項７に記載のタクシー管理システムは、迎車指示の送信を受けたタクシー車両において送信されてきた配車依頼者の位置情報を記憶すると共に配車依頼者の位置情報に基づいて依頼者エリアを演算して設定し、ＧＰＳ受信機を内蔵

した通信ユニットによって求めたタクシー車両の位置がタクシー車両において設定した依頼者エリア内に進入したときに情報管理センタに依頼者エリア進入信号を送信し、依頼者エリア進入信号を受信した情報管理センタにおいて、タクシー車両の配車依頼者先への到着予定時刻を演算し、タクシー車両の配車依頼者に対して該到着予定時刻を送信するようにしたものである。このように構成することにより、請求項７に記載の発明によると、タクシー利用者からのタクシー車両の配車依頼があった際に配車依頼者に最短の時間で迎車し配車依頼者のところに到着直前に到着予定時刻を通知することができる。

【００１４】上記の目的を達成するために、請求項８に記載のタクシー管理システムは、情報管理センタがタクシー車両に配車依頼者の位置情報を送信して迎車指示を送信する際に、配車依頼者の位置を示す広域道路地図を同時に送信し、情報管理センタがタクシー車両から依頼者エリア進入信号を受信することにより当該配車依頼者の周辺道路地図を送信するようにしたものである。このように構成することにより、請求項８に記載の発明によると、より正確にタクシー利用者の迎車位置を把握することができ、間違えることなく配車依頼者のところに早く到着することができる。

【００１５】

【発明の実施の形態】以下、本発明に係るタクシー管理システムの実施の形態について説明する。図１は、タクシー管理システムを実施するための送受信関係を示している。

【００１６】図において、タクシー車両１は、タクシー業者２が所有し、このタクシー業者２がタクシー車両１と、このタクシー車両１を運転する運転者を管理している。このタクシー車両１は、ポーリングに基づき車載機器からアンテナを介してタクシー車両１の位置情報、メータ表示フラグのポジション情報、タクシーメータ情報を中継会社を介して情報管理センタ３に送信する。タクシー車両１の位置情報は、タクシー車両１のメータ表示フラグのポジションが空車ポジションのとき、すなわち、タクシー車両１が空車状態の時は、情報管理センタ３からの定期的なポーリングに応答して所定走行距離（例えば、５００ｍ）毎に送信する。したがって、情報管理センタ３からのポーリングが定期的に行われても、タクシー車両１が所定走行距離移動していない場合（例えば、空車にして休息をとっている場合）は、ポーリングに応答しない。

【００１７】また、このタクシー車両１の位置情報は、タクシー車両１のメータ表示フラグのポジションが空車ポジションから他のポジションへ変更になったとき、又は、他のポジションから空車ポジションへ変更になったときに情報管理センタ３に送信する。また、タクシー車両１のメータ表示フラグのポジションが空車ポジションから他のポジションへ変更になった以降、すなわち、タクシー車両１に乗客を乗せた実車の場合には、当該タクシー車両１は空車じゃなく、空車情報としてはデータに入らないため、情報管理センタ３からの定期的なポーリングに対して応答しないようになっている。このタクシー車両１が実車の場合、乗客を降ろした際に他のポジション（賃走ポジション）から空車ポジションへ変更になり、情報管理センタ３に位置情報を送信するので問題はない。このように情報収集に必要な場合のみ送信するようにしてあるため、通信費を低く抑えることができる。

【００１８】この情報管理センタ３では、管理する全タクシー車両１の内、空車状態にあるタクシー車両１を取り出し空車データを作成し、この空車状態にあるタクシー車両１の位置情報を地図に重畳してディスプレイ５に、地図を区域（例えば、東京２３区）別に空車状況を表示する空車データを得ている。この地図に重畳した空車データは、情報管理センタ３からタクシー業者２にインターネットを介して送信される。そして、この空車データの送信を受けたタクシー業者２では、管理する全タクシー車両１の内、空車状態のタクシー車両１の位置情報に基づいて地図上に重畳し空車情報としてディスプレイ５に表示する。

【００１９】また、情報管理センタ３では、管理する全タクシー車両１のメータ表示フラグのポジションが空車ポジションから他のポジション（賃走ポジション）へ変更になったときの位置情報を取り込み、賃走の開始点を把握し、乗客を降ろした際に他のポジション（賃走ポジション）から空車ポジションへ変更になったときの位置情報を取り込み、賃走の終点を把握するようになっており、このタクシー車両１のメータ表示フラグのポジションが空車ポジションになったときのタクシーメータ情報（賃走開始時間、賃走終了時間、走行距離、料金、支払方法、実車地）がタクシー車両１から情報管理センタ３に送信される。これによって実車毎のデータが情報管理センタ３に蓄積され、これを整理することによって各タクシー車両１の運行データを得ることができるようになっている。

【００２０】また、タクシー車両１は、配車依頼者４の依頼者エリア内に進入したときに車載機器からアンテナを介して配車依頼者４の依頼者エリア内に進入したことを示す依頼者エリア進入信号を中継会社を介して情報管理センタ３の制御機器に送信する。

【００２１】タクシー車両１に搭載される車載機器の構成は、図２に示す如き構成となっている。図において、車載機器１１は、ＧＰＳ受信機を内蔵した通信ユニットで、制御ＣＰＵ１２と、制御ＣＰＵ１２によって制御されるＧＰＳ受信機１３と、外部とのやり取りを行うモデムであるＰＣ（通信機器）１５（例えば、携帯電話モジュール等）とによって構成されている。すなわち、制御ＣＰＵ１２には、タクシー車両１の地図上での位置情報をアンテナ１４から受信するＧＰＳ受信機１３とＧＰＳ

受信機１３から入力される位置情報をアンテナ１６から情報管理センタ３に送信するＰＣ１５とが接続されている。さらに、制御ＣＰＵ１２には、ＰＣ（通信機器）１５を介して情報管理センタ３から送信されてきた地図データを表示するディスプレィ１７が接続されている。このディスプレィ１７は、情報管理センタ３からの指示を表示するためのもので、タクシー利用者４からタクシー業者２に通信会社を介してタクシー車両１の配車依頼があった場合、タクシー業者２から情報管理センタ３にタクシー車両１の配車依頼が行われ、情報管理センタ３からタクシー車両１に対し配車依頼を行う際、配車依頼者４の位置を示す広域道路地図の送信を受け、この送信された広域道路地図の上に配車依頼者４を示す位置を記して表示するのに用いられる。また、依頼者エリア進入信号を受信、すなわち、配車依頼者４のエリア内にタクシー車両１が進入したときに、情報管理センタ３から配車依頼者４の周辺位置を示す周辺道路地図の送信を受け、この送信された周辺道路地図の上に配車依頼者を示す位置を記して表示したりする。

【００２２】このディスプレィ１７は、タクシー車両１に必ず設けられているものではなく、タクシー車両１によっては、搭載していない場合もある。このような場合は、情報管理センタ３からの指示は、タクシー車両１に乗車している運転手が所有する携帯電話に行ってもよい。

【００２３】また、ＧＰＳ受信機１３は、複数のＧＰＳ衛星から緯度・経度情報をアンテナ１４を介して受信するものである。また、制御ＣＰＵ１２は、ＧＰＳ受信機１３によって受信した複数のＧＰＳ衛星から緯度・経度情報からタクシー車両１の現在位置（緯度・経度）を演算すると共に、この演算結果を中継会社を介して情報管理センタ３に送信する機能を有している。そして、この制御ＣＰＵ１２には、ＲＯＭ、ＲＡＭが内蔵されている。この内蔵のＲＡＭには、与えられた配車依頼者の位置（緯度・経度）に基づいて、配車依頼者の位置を中心とする所定半径距離が記憶されている。また、この制御ＣＰＵ１２に内蔵のＲＡＭには、広域道路地図及び営業エリア内の各住宅の周辺道路地図を予め格納しておくこともできる。この場合、タクシー利用者からタクシー車両１の配車依頼があったときに情報管理センタ３から広域道路地図及び営業エリア内の各住宅の周辺道路地図をタクシー車両１に送信する必要がなくなる。

【００２４】また、この内蔵のＲＯＭには、与えられた配車依頼者の位置（緯度・経度）に基づいて、配車依頼者の位置を中心に所定半径距離（半径５００ｍ）に基づいて依頼者エリアを演算する処理プログラムが記憶されている。さらに、この内蔵のＲＯＭには、ＧＰＳ受信機１３によって複数のＧＰＳ衛星から受信した緯度・経度情報からタクシー車両１の現在位置（緯度・経度）を演算する制御、複数のＧＰＳ衛星から緯度・経度情報から算出したタクシー車両１の現在位置（緯度・経度）に基づいて、当該タクシー車両１が内蔵ＲＡＭに記憶されている依頼者エリア内に進入したか否かを検出する制御、当該タクシー車両１が内蔵ＲＡＭに記憶されている依頼者エリア内に進入した場合に依頼者エリア進入信号をＰＣ（通信機器）１５を起動して中継会社を介して情報管理センタ３に送信する制御、を行うプログラムが記憶されている。また、ＰＣ（Ｐｕｂｌｉｃ　Ｃｏｍｍｕｎｉｃａｔｉｏｎ）１５は、制御ＣＰＵ１２で演算した結果をアンテナ１６を介して中継会社に送信するもので、例えば、携帯電話モジュール等によって構成されている。ディスプレィ１７は、情報管理センタ３から送信されてきた情報（地図データ）及び制御ＣＰＵ１２に内蔵のＲＡＭに格納してある情報（所定半径距離、地図データ）を表示するものである。

【００２５】一方、情報管理センタ３は、図３に示す如き構成を有している。すなわち、ＣＰＵ３１には、メモリ装置が接続されており、このメモリ装置は、車両データベース３５と、地図データベース３６と、空車データベース３７と、道路情報データベース３８と、データメモリエリア３９とを有している。また、このＣＰＵ３１には、各種データを入力する入力部（キーボード）３２が接続されている。さらに、このＣＰＵ３１には、アンテナ３４が接続されており、このアンテナ３４を使ってＣＰＵ３１は、中継会社を介してタクシー車両１の車載機器から送信されてくる位置情報を受信したり、タクシー車両１が依頼者エリア内に進入したことを示す依頼者エリア進入信号をタクシー車両１の車載機器から受信したときに送信タクシー業者２に送信する機能を有している。また、このＣＰＵ３１には、表示部（ディスプレイ）３３が接続されており、ＣＰＵ３１が受信したタクシー車両１の車載機器から送信されてきた情報を表示する機能を有している。

【００２６】車両データベース３５には、管理する全てのタクシー車両１の車種・形式・車両番号・乗車運転手等の車両データがデータベース化して収納されている。この車両データには、情報管理センタ３で管理するタクシー車両１のＧＰＳ受信機を内蔵した通信ユニット１１の携帯電話番号、車種・形式・車両番号・乗車運転手等がある。また、地図データベース３６は、タクシー営業エリアを網羅し、特定地域を詳細に表示可能なデータで、特に特定の周辺地図を拡大、スクロール表示が可能なものとなっている。また、空車データベース３７は、管理している全タクシー車両１のメータ表示フラグが空車ポジションになっているものの車両Ｎｏ．とそれぞれの車両位置情報（緯度・経度情報）、乗車運転手名が記録されている。道路情報データベース３８は、色々な箇所から収集される道路情報をデータベース化して収納しておくものである。また、データメモリエリア３９は、タクシー車両１等から情報管理センタ３に送信されてく

るデータを一時的に記憶しておくものである。

【００２７】タクシー車両１が配車依頼者４の近くに近づいたとき、どの範囲まで接近したときに依頼者へ通知するかを特定する依頼者への通知範囲は、図４に示す如く設定される。すなわち、配車依頼者Ａ、配車依頼者Ｂ、配車依頼者Ｃ、配車依頼者Ｄ、配車依頼者Ｅ、配車依頼者Ｆ、配車依頼者Ｇ・・・・があり、各配車依頼者Ａ、Ｂ、Ｃ、Ｄ、Ｅ、Ｆ、Ｇ・・・・は、依頼を受けたときに特定され、それぞれの配車依頼者には、依頼者への通知範囲がそのときに与えられる。この依頼者への通知範囲は、タクシー車両１が配車依頼者４に近づいてタクシー配車依頼者４までの到着時刻が所定時間内の位置に近づいたことを意味しており、例えば、配車依頼者４を中心に半径５００ｍ内を指している。実際には、道路の渋滞具合が各配車依頼者近傍の道路状況によって異なるため、各配車依頼者毎に依頼者への通知範囲を設定してもよい。そして、配車依頼者Ａにはエリアａ（半径５００ｍ内）が、配車依頼者Ｂにはエリアｂ（半径５００ｍ内）が、配車依頼者Ｃにはエリアｃ（半径５００ｍ内）が、配車依頼者Ｄにはエリアｄ（半径５００ｍ内）が、配車依頼者Ｅにはエリアｅ（半径５００ｍ内）が、配車依頼者Ｆにはエリアｆ（半径５００ｍ内）が、配車依頼者Ｇにはエリアｇ（半径５００ｍ内）・・・がそれぞれ設けられることになる。

【００２８】そして、配車依頼者の位置情報は、配車依頼を受けたときに依頼者の電話番号によって特定され、それぞれの配車依頼者の位置情報は、図４に示す如く、配車依頼者Ｎｏ．Ａの位置情報は緯度P_{01}、経度Q_{01}、配車依頼者Ｎｏ．Ｂの位置情報は緯度P_{02}、経度Q_{02}、配車依頼者Ｎｏ．Ｃの位置情報は緯度P_{03}、経度Q_{03}、配車依頼者Ｎｏ．Ｄの位置情報は緯度P_{04}、経度Q_{04}、配車依頼者Ｎｏ．Ｅの位置情報は緯度P_{05}、経度Q_{05}、配車依頼者Ｎｏ．Ｆの位置情報は緯度P_{06}、経度Q_{06}、配車依頼者Ｎｏ．Ｇの位置情報は緯度P_{07}、経度Q_{07}、配車依頼者Ｎｏ．・・・・と緯度・経度情報で、データメモリエリア３９に収納される。そして、この配車依頼を受けた依頼者の電話番号によって特定された配車依頼者の位置情報に基づいて、情報管理センタ３のＣＰＵ３１は、各配車依頼者についての依頼者への通知範囲が自動演算され、図４に示す如く、配車依頼者Ｎｏ．Ａのエリアａは緯度P_{11}、経度Q_{11}、配車依頼者Ｎｏ．Ｂのエリアｂは緯度P_{12}、経度Q_{12}、配車依頼者Ｎｏ．Ｃのエリアｃは緯度P_{13}、経度Q_{13}、配車依頼者Ｎｏ．Ｄのエリアｄは緯度P_{14}、経度Q_{14}、配車依頼者Ｎｏ．Ｅのエリアｅは緯度P_{15}、経度Q_{15}、配車依頼者Ｎｏ．Ｆのエリアｆは緯度P_{16}、経度Q_{16}、配車依頼者Ｎｏ．Ｇのエリアｇは緯度P_{17}、経度Q_{17}、依頼者Ｎｏ．・・・・と緯度・経度情報で、データメモリエリア３９に収納される。

【００２９】一方、これらの配車依頼者の位置情報は、情報管理センタ３のＣＰＵ３１によってアンテナ３４を使って中継会社に送信され、この中継会社に送信された配車依頼者の位置情報は、中継会社からタクシー車両１のＧＰＳ受信機を内蔵した通信ユニット（車載機器）１１のアンテナ１６を介して制御ＣＰＵ１２に送信される。この制御ＣＰＵ１２では、送信された配車依頼者の位置情報（緯度・経度情報）に基づいて情報管理センタ３のＣＰＵ３１と同様、各配車依頼者についての依頼者への通知範囲を自動演算し、図４に示す如き情報管理センタ３のデータメモリエリア３９に収納された各配車依頼者への依頼者への通知範囲データ（緯度・経度データ）と同一のデータが各配車依頼者毎にエリアを緯度・経度情報として得られ、タクシー車両１のＧＰＳ受信機を内蔵した通信ユニット（車載機器）１１の制御ＣＰＵ１２に内蔵のＲＡＭに依頼者エリアとして記憶される。

【００３０】このように構成されるタクシー管理システムを用いて、タクシー車両１の空車情報を表示し、タクシー利用者からタクシー車両１の配車依頼があったときのタクシー車両（車載機器）１側、情報管理センタ３側、タクシー業者２側、配車依頼者（タクシー利用者）４側の相互の動作について、図５～図１０に図示のフローチャートを用いて説明する。まず、タクシー業者２においては、ステップ１０２において、情報管理センタ３に対して会員登録の申込を行う。このステップ１０２においてタクシー業者２からの会員申込が行われると、情報管理センタ３側では、ステップ１０４において、会員登録を行う。そして、情報管理センタ３側では、ステップ１０６において、タクシー業者２が管理するタクシー全車の車両データ（メーカー名、車種、初年度登録年月、排気量、グレード、ボディカラー、車体番号、乗車運転手）をタクシー業者２に行う。このステップ１０６においてタクシー全車の車両データの請求を受けると、タクシー業者２は、ステップ１０８において、タクシー業者２が管理するタクシー全車の車両データを情報管理センタ３に提供する。このステップ１０８においてタクシー業者２からタクシー全車の車両データの提供を受けると、情報管理センタ３では、ステップ１１０において、タクシー業者２から提供されたタクシー全車の車両データ（メーカー名、車種、初年度登録年月、排気量、グレード、ボディカラー、車体番号、乗車運転手）を車両データベース３５に登録する。これによって情報管理センタ３は、タクシー業者２の所有する全タクシー車両を把握することになる。

【００３１】情報管理センタ３において、ステップ１１０におけるタクシー全車の車両データの登録が行われると、ステップ１１２において、車両データベース３５に登録したタクシー全車の車両データの確認をタクシー業者２に対して行い、タクシー業者２では、ステップ１１４において、車両データベース３５に登録したタクシー

全車の車両データに間違いがなければ、タクシー全車の車両データの確認の了承を情報管理センタ３に送信する。

【００３２】このタクシー全車の車両データの確認の了承をタクシー業者２から受信すると、情報管理センタ３では、ステップ１１６において、車両データベース３５に登録した全タクシー車両１に対し、位置情報・空車情報のポーリングを順次行う。この情報管理センタ３からの位置情報・空車情報のポーリングを受けると、タクシー車両（車載機器）１においては、タクシー車両１のメータ表示フラグのポジションが空車ポジションである場合に限り、ステップ１１８において、一定の周期で複数のＧＰＳ衛星から送信してくる緯度・経度情報をＧＰＳ受信機１３によって受信し、制御ＣＰＵ１２によってこれらの緯度・経度情報に基づいて演算した現在の位置情報を乗車・空車の情報（空車情報のみ）と共にＰＣ１５を介して情報管理センタ３に送信する。このステップ１１８においてタクシー車両１から位置情報と共に空車情報が送信されると、情報管理センタ３では、ステップ１２０において、車両データベース３５に登録した全タクシー車両についての空車情報、空車タクシー車両の位置情報を受信し、空車データーベース３７に記録される。そして、ステップ１２２において、情報管理センタ３では、この受信・記録した全タクシー車両についての空車情報を空車タクシー車両の位置情報に基づいて地図に重畳してタクシー業者２に送信する。このステップ１２２において情報管理センタ３から地図に重畳した空車タクシー車両の情報を受信したタクシー業者２は、ステップ１２４において、地図データに重畳した空車情報をディスプレイ５に表示する。

【００３３】その後、タクシー車両（車載機器）１は、ステップ１２６において、情報管理センタ３からの位置情報・空車情報のポーリングに対して、タクシー車両１が所定距離（例えば、５００ｍ）走行する毎に一定の周期で複数のＧＰＳ衛星から送信してくる緯度・経度情報をＧＰＳ受信機１３によって受信し、制御ＣＰＵ１２によってこれらの緯度・経度情報に基づいて演算した現在の位置情報をタクシー車両１のＰＣ１５を介して情報管理センタ３に送信する。このタクシー車両１から所定距離走行毎に送信されてくる位置情報・空車情報は、ステップ１２８において、情報管理センタ３で受信され、空車データベース３７に記憶される。このステップ１２８において位置情報・空車情報が受信・記憶されると、再び、ステップ１３０において、情報管理センタ３では、車両データベース３５に登録した全タクシー車両１に対し、位置情報・空車情報のポーリングを順次行う。この情報管理センタ３からの位置情報・空車情報のポーリングを受けると、タクシー車両（車載機器）１においては、タクシー車両１のメータ表示フラグのポジションが空車ポジションである場合に限り、ステップ１３２において、一定の周期で複数のＧＰＳ衛星から送信してくる緯度・経度情報をＧＰＳ受信機１３によって受信し、制御ＣＰＵ１２によってこれらの緯度・経度情報に基づいて演算した現在の位置情報を乗車・空車の情報（空車情報のみ）と共にＰＣ１５を介して情報管理センタ３に送信する。このステップ１３２においてタクシー車両１から位置情報と共に空車情報が送信されると、情報管理センタ３では、ステップ１３４において、車両データベース３５に登録した全タクシー車両についての空車情報、空車タクシー車両の位置情報の受信し、空車データーベース３７に記録されているデータを書換更新する。そして、ステップ１３６において、情報管理センタ３では、この受信・記録した全タクシー車両についての空車情報を空車タクシー車両の位置情報に基づいて地図に重畳してタクシー業者２に送信する。このステップ１３６において情報管理センタ３から地図に重畳した空車タクシー車両の情報を受信したタクシー業者２は、ステップ１３８において、地図データに重畳した空車情報をディスプレイ５に表示する。

【００３４】いま、このような状態で、ステップ１４０において、配車依頼者（タクシー利用者）４が電話等でタクシー業者２に対し配車の依頼を行うと、この配車の依頼をタクシー業者２で受信し、この配車の依頼を受信したタクシー業者２は、ステップ１４２において、配車依頼者４の位置（所在地）と共に配車依頼を情報管理センタ３に送信する。このステップ１４２においてタクシー業者２が送信した配車依頼と配車依頼者４の位置（所在地）をステップ１４４において、情報管理センタ３が受信すると、情報管理センタ３は、配車依頼者４の地図上の位置（所在地）を検索し、ステップ１４６において、会員（タクシー業者）２の管理するタクシー車両１の空車状況の確認を行う。このステップ１４６において会員（タクシー業者）２の管理するタクシー車両１の空車状況の確認を行うと、ステップ１４８において、配車依頼者の位置（所在地）に最も近い空車の検索を行う。このステップ１４８において配車依頼者の位置（所在地）に最も近い空車を検索すると、ステップ１５０において、検索した空車タクシー車両１に対し、配車依頼者４の位置情報（緯度・経度データ）を送信し、配車依頼者４の位置に迎えに行くよう迎車指示を送信する。

【００３５】このステップ１５０において配車依頼者４の位置情報を送信し迎車指示を送信すると、空車タクシー車両１は、ステップ１５２において、配車依頼者４の位置情報を送信し迎車指示を受信し、この受信した配車依頼者４の位置情報に基づいて、依頼者エリアが設定され、配車依頼者についての依頼者への通知範囲が緯度Ｐｏｏ、経度Ｑｏｏというように、緯度・経度情報として自動演算され、設定される。この依頼者エリアは、タクシー車両１のＧＰＳ受信機を内蔵した通信ユニット（車載機器）１１の制御ＣＰＵ１２に内蔵のＲＡＭに記憶さ

れる。このステップ２１６において依頼者エリアが緯度・経度情報として自動演算され設定されると、ステップ１５６において、タクシー車両１は、メータ表示フラグを空車ポジションから迎車ポジションに変更する（この時点で、タクシー車両１は空車でなくなる）。このメータ表示フラグが空車ポジションから迎車ポジションに変更になると、このメータ表示フラグの変更をトリガーとして、タクシー車両１が迎車状態になったことをタクシー車両１の位置情報と共に情報管理センタ３に送信する。

【００３６】このステップ１５６においてタクシー車両１が迎車状態になったことをタクシー車両１の位置情報と共に情報管理センタ３に送信すると、情報管理センタ３では、ステップ１５８において、タクシー車両１の迎車了解の確認を受信し、ステップ１６０において、情報管理センタ３のメモリ装置の空車データベース３７に記憶されている空車データから削除し、迎車データとして登録する。この迎車車両データは、ステップ１６２において、会員（タクシー業者）２に送信される。この送信を受けたタクシー業者２は、ステップ１６４において、配車手配を受信する。

【００３７】さらに、情報管理センタ３では、ステップ１６６において、空車タクシー車両１の配車依頼者４の位置まで到着する予定時刻の演算を行い、その演算結果（到着予定時刻）をタクシー業者２に通知する。この情報管理センタ３からの到着予定時刻を受信する（ステップ１６８）と、タクシー業者２は、ステップ１７０において、配車依頼者４に対し、配車手配車の情報と、到着予定時刻の連絡を行う。このステップ１７０におけるタクシー業者２からの連絡は、ステップ１７２において、配車依頼者４に受信される。

【００３８】さらに、情報管理センタ３で、ステップ１７４において、車両データベース３５に登録した全タクシー車両１に対し、位置情報・空車情報のポーリングを順次行う。ところが、タクシー車両１の位置情報は、メータ表示フラグが空車ポジションに変更になったときに情報管理センタ３に送信され、その後、メータ表示フラグのポジションが「空車」位置に保持されている限り、定距離（例えば、５００ｍ）毎にタクシー車両１から情報管理センタ３に自動発報されるようになっている。そこで、メータ表示フラグのポジションが「空車」位置に変更になって定距離（例えば、５００ｍ）毎にタクシー車両１の位置情報が自動発報されているタクシー車両１に対しては、ステップ１７４において行われる情報管理センタ３からタクシー車両１に対する位置情報・空車情報のポーリングを行わない。このため、ポーリングに係る通信費を削減することができる。

【００３９】この情報管理センタ３からの位置情報・空車情報のポーリングは、メータ表示フラグが空車ポジションに変更になると、その地点からタクシー車両１は定距離（例えば、５００ｍ）毎に情報管理センタ３に位置情報を自動発報しているため、メータ表示フラグのポジションが「空車」位置になっているタクシー車両１に対しては行わない。したがって、情報管理センタ３からの位置情報・空車情報のポーリングを受ける（メータ表示フラグのポジションが空車以外のポジションとなっているタクシー車両１）と、タクシー車両（車載機器）１においては、ステップ１７６において、一定の周期で複数のＧＰＳ衛星から送信してくる緯度・経度情報をＧＰＳ受信機１３によって受信し、制御ＣＰＵ１２によってこれらの緯度・経度情報に基づいて演算した現在の位置情報を乗車・空車の情報（空車情報のみ）と共にＰＣ１５を介して情報管理センタ３に送信する。このステップ１７６においてタクシー車両１から位置情報と共に空車情報が送信されると、情報管理センタ３では、ステップ１７８において、車両データベース３５に登録した全タクシー車両についての空車情報は定距離（例えば、５００ｍ）毎、メータ表示フラグのポジションが空車以外のポジションとなっているタクシー車両の位置情報が受信され、空車データーベース３７に記録される。そして、ステップ１８０において、情報管理センタ３では、この受信・記録した全タクシー車両についての空車情報を空車タクシー車両の位置情報に基づいて地図に重畳してタクシー業者２に送信する。このステップ１８０において情報管理センタ３から地図に重畳した空車タクシー車両の情報を受信したタクシー業者２は、ステップ１８２において、地図データに重畳した空車情報をディスプレイ５に表示する。

【００４０】また、情報管理センタ３で、ステップ１８４において、車両データベース３５に登録した全タクシー車両１に対し、位置情報・空車情報のポーリングを順次行う。ところが、タクシー車両１の位置情報は、メータ表示フラグが空車ポジションに変更になったときに情報管理センタ３に送信され、その後、メータ表示フラグのポジションが「空車」位置に保持されている限り、定距離（例えば、５００ｍ）毎にタクシー車両１から情報管理センタ３に自動発報されるようになっている。そこで、メータ表示フラグのポジションが「空車」位置に変更になって定距離（例えば、５００ｍ）毎にタクシー車両１の位置情報が自動発報されているタクシー車両１に対しては、ステップ１７４において行われる情報管理センタ３からタクシー車両１に対する位置情報・空車情報のポーリングを行わない。このため、ポーリングに係る通信費を削減することができる。

【００４１】この情報管理センタ３からの位置情報・空車情報のポーリングを受けると、タクシー車両（車載機器）１においては、タクシー車両１のメータ表示フラグのポジションが空車以外のポジションである場合に限り、ステップ１８６において、一定の周期で複数のＧＰＳ衛星から送信してくる緯度・経度情報をＧＰＳ受信機

１３によって受信し、制御ＣＰＵ１２によってこれらの緯度・経度情報に基づいて演算した現在の位置情報を乗車・空車の情報（空車情報のみ）と共にＰＣ１５を介して情報管理センタ３に送信する。このステップ１８６においてタクシー車両１から、メータ表示フラグのポジションが空車以外のポジションとなっているタクシー車両についての位置情報と、メータ表示フラグのポジションが空車のポジションであるタクシー車両の空車情報が定距離（例えば、５００ｍ）毎に送信されると、情報管理センタ３では、ステップ１８８において、車両データベース３５に登録した全タクシー車両についての空車情報、空車タクシー車両の位置情報の受信し、空車データーベース３７に記録される。このような繰り返しを行うことにより各タクシー車両１の空車情報、運行情報が情報管理センタ３に収集される。

【００４２】このようにして各タクシー車両１営業が終了すると、タクシー業者２は、情報管理センタ３に対してステップ１９０において、各タクシー車両１毎の営業日報明細の請求を行う。このステップ１９０において営業日報明細の請求が有ると、情報管理センタ３は、ステップ１９２において、図１１に示す如き各タクシー車両１毎の営業日報明細の作成を行い、ステップ１９４において、作成した各タクシー車両１毎の営業日報明細をタクシー業者２に送信する。この営業日報明細には、日報日付、車両コード、乗務員名等が記載され、１日のタクシー車両１の営業状況が示される。このステップ１９４において情報管理センタ３が作成した各タクシー車両１毎の営業日報明細をタクシー業者２に送信する。この情報管理センタ３から送信されると、タクシー業者２は、ステップ１９６において、図１１に示す如き各タクシー車両１毎の営業日報明細を受信する。

【００４３】また、タクシー業者２が、情報管理センタ３に対してステップ１９８において、各タクシー車両１に未収金管理票の請求を情報管理センタ３に行うと、ステップ２００において、各タクシー車両１毎の図１２に示す如き未収金管理票の作成を行う。この未収金管理票は、各タクシー車両１がクレジットカード、チケットカード、プリペイドカード、メンバーズカードで支払った料金が未収金となっているものを表にして出したものである。このステップ２００において各タクシー車両１毎の未収金管理票の作成を行うと、ステップ２０２において、作成した各タクシー車両１毎の未収金管理票をタクシー業者２に送信する。このステップ２０２において情報管理センタ３が作成した未収金管理票をタクシー業者２に送信すると、タクシー業者２は、ステップ２０４において、図１２に示す如き未収金管理票を受信する。

【００４４】また、タクシー業者２が、情報管理センタ３に対してステップ２０６において、各タクシー車両１に時間帯別営業収入分布票の請求を情報管理センタ３に行うと、ステップ２０８において、各タクシー車両１毎の図１３に示す如き時間帯別営業収入分布票の作成を行う。この時間帯別営業収入分布票は、時間帯エリアを２４時間に分け、どこの地区での営業実績がいいかを表にして示したものである。このステップ２０８において時間帯別営業収入分布票の作成を行うと、ステップ２１０において、作成した時間帯別営業収入分布票をタクシー業者２に送信する。このステップ２１０において情報管理センタ３が作成した時間帯別営業収入分布票をタクシー業者２に送信すると、タクシー業者２は、ステップ２１２において、図１３に示す如き時間帯別営業収入分布票を受信する。

【００４５】また、タクシー業者２が、情報管理センタ３に対してステップ２１４において、各タクシー車両１に時間帯別乗車回数分布票の請求を情報管理センタ３に行うと、ステップ２１６において、各タクシー車両１毎の図１４に示す如き時間帯別乗車回数分布票の作成を行う。この時間帯別乗車回数分布票は、時間帯エリアを２４時間に分け、どこの地区での乗車回数が多いかを表にして示したものである。このステップ２１６において時間帯別乗車回数分布票の作成を行うと、ステップ２１８において、作成した時間帯別乗車回数分布票をタクシー業者２に送信する。このステップ２１８において情報管理センタ３が作成した時間帯別乗車回数分布票をタクシー業者２に送信すると、タクシー業者２は、ステップ２２０において、図１４に示す如き時間帯別乗車回数分布票を受信し、フローを終了する。

【００４６】

【発明の効果】以上に説明したように構成されているので、以下のような効果を奏する。

【００４７】請求項１に記載の発明によれば、タクシー業者に何の設備も設けることなく、自社の所有する全タクシー車両の空車状態を常に把握することができる。

【００４８】請求項２に記載の発明によれば、タクシー業者に何の設備も設けることなく、自社の所有する全タクシー車両の空車状態を常に把握でき、タクシー利用者からのタクシー車両の配車依頼があった際に配車依頼者に適切なタクシー車両の配車を行うことができる。

【００４９】請求項３に記載の発明によれば、空車状態と迎車・賃走開始位置、賃走終了位置を的確に把握することができ、ポーリングだけでなく「空車」の通報の後の追跡、フォローができ、ポーリングの通信費を抑えることができる。

【００５０】請求項４に記載の発明によれば、常時当該車両の走行距離、請求金額、乗車頻度等を的確に知ることができる。

【００５１】請求項５に記載の発明によれば、常時当該車両の走行距離、請求金額、営業状態、乗車頻度等を的確に知ることができる。

【００５２】請求項６に記載の発明によれば、タクシー利用者からのタクシー車両の配車依頼があった際に配車

依頼者に最短の時間で迎車し配車依頼者のところに到着することができる。

【００５３】請求項７に記載の発明によれば、タクシー利用者からのタクシー車両の配車依頼があった際に配車依頼者に最短の時間で迎車し配車依頼者のところに到着直前に到着予定時刻を通知することができる。

【００５４】請求項８に記載の発明によれば、より正確にタクシー利用者の迎車位置を把握することができ、間違えることなく配車依頼者のところに早く到着することができる。

【図面の簡単な説明】

【図１】タクシー管理システムを実施するための送受信関係を示す図である。

【図２】図１に図示のタクシー車両に搭載される車載機器の構成を示す図である。

【図３】図１に図示の情報管理センタの構成を示す図である。

【図４】図１に図示の配車依頼者の位置及び依頼者エリアの緯度・経度データを示す図である。

【図５】タクシー管理システムを用いて、タクシー車両１の空車情報を表示し、タクシー利用者からタクシー車両１の配車依頼があったときのタクシー車両１側、情報管理センタ３側、タクシー業者２側、配車依頼者（タクシー利用者）４側の相互の動作を示すフローチャートである。

【図６】タクシー管理システムを用いて、タクシー車両１の空車情報を表示し、タクシー利用者からタクシー車両１の配車依頼があったときのタクシー車両１側、情報管理センタ３側、タクシー業者２側、配車依頼者（タクシー利用者）４側の相互の動作を示すフローチャートである。

【図７】タクシー管理システムを用いて、タクシー車両１の空車情報を表示し、タクシー利用者からタクシー車両１の配車依頼があったときのタクシー車両１側、情報管理センタ３側、タクシー業者２側、配車依頼者（タクシー利用者）４側の相互の動作を示すフローチャートである。

【図８】タクシー管理システムを用いて、タクシー車両１の空車情報を表示し、タクシー利用者からタクシー車両１の配車依頼があったときのタクシー車両１側、情報管理センタ３側、タクシー業者２側、配車依頼者（タクシー利用者）４側の相互の動作を示すフローチャートである。

【図９】タクシー管理システムを用いて、タクシー車両１の空車情報を表示し、タクシー利用者からタクシー車両１の配車依頼があったときのタクシー車両１側、情報管理センタ３側、タクシー業者２側、配車依頼者（タクシー利用者）４側の相互の動作を示すフローチャートである。

【図１０】タクシー管理システムを用いて、タクシー車両１の空車情報を表示し、タクシー利用者からタクシー車両１の配車依頼があったときのタクシー車両１側、情報管理センタ３側、タクシー業者２側、配車依頼者（タクシー利用者）４側の相互の動作を示すフローチャートである。

【図１１】情報管理センタが作成する営業日報明細を示す図である。

【図１２】情報管理センタが作成する未収金管理票を示す図である。

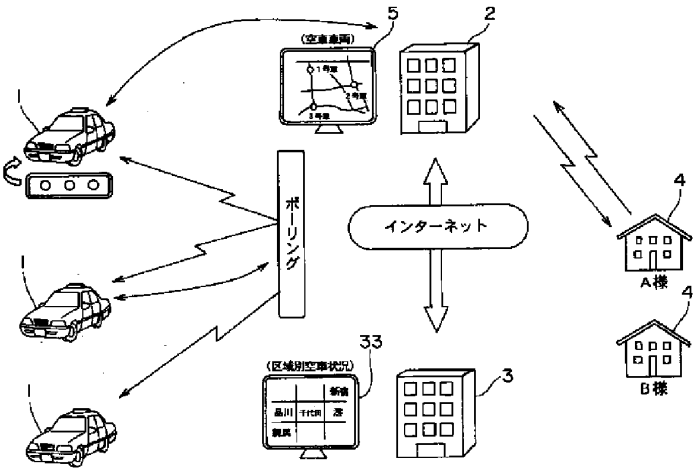
【図１３】情報管理センタが作成する時間帯別営業収入分布票を示す図である。

【図１４】情報管理センタが作成する時間帯別乗車回数分布票を示す図である。

【符号の説明】

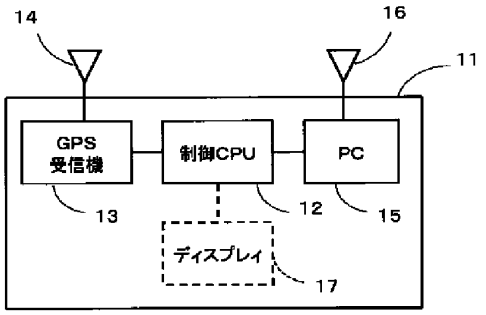
１……タクシー車両
２……タクシー業者
３……情報管理センタ
４……配車依頼者（タクシー利用者）
１１……通信ユニット（車載機器）
１２……制御ＣＰＵ
１３……ＧＰＳ受信機
１５……ＰＣ
１７……ディスプレィ
３１……ＣＰＵ
３２……入力部
３３……表示部
３５……車両データベース
３７……空車データベース

【図１】

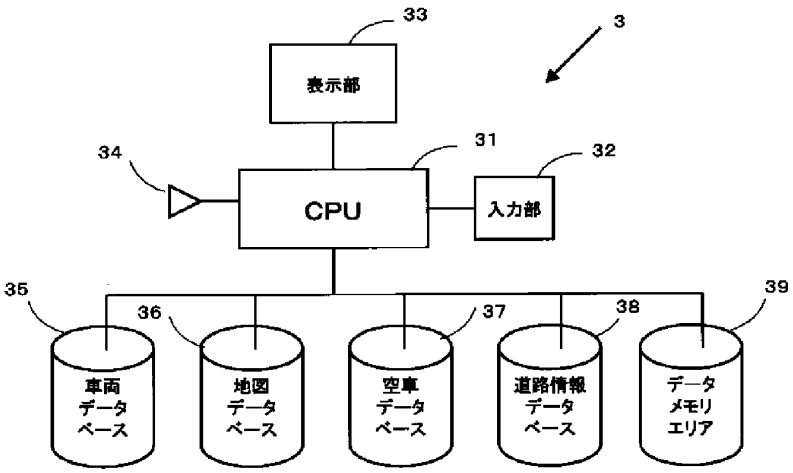


１…タクシー車両　２…タクシー業者　３…情報管理センタ　４…配車依頼者（タクシー利用者）
５…ディスプレイ　３３…表示部

【図２】



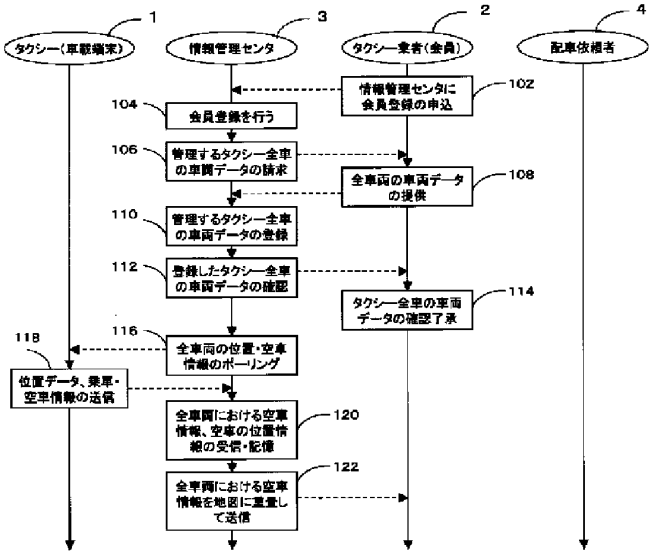
【図３】



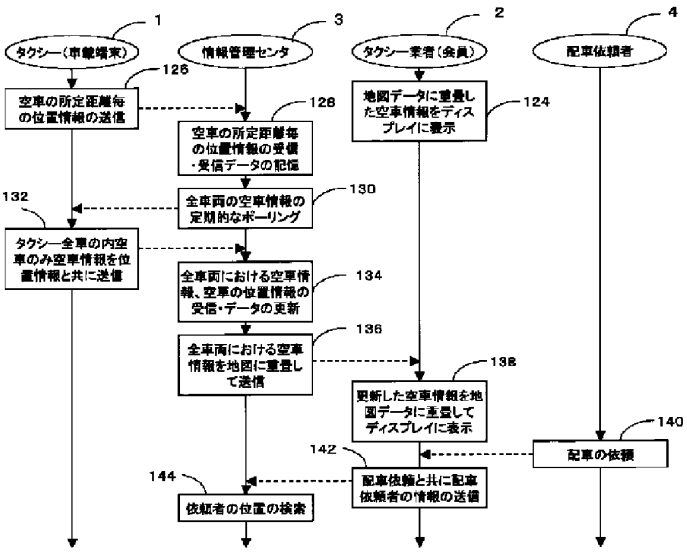
【図４】

配車の依頼者	依頼者位置情報		依頼者への通知範囲		
	緯度	経度	エリア	緯度	経度
A	P_{01}	Q_{01}	a(半径500m内)	P_{11}	Q_{11}
B	P_{02}	Q_{02}	b(半径500m内)	P_{12}	Q_{12}
C	P_{03}	Q_{03}	c(半径500m内)	P_{13}	Q_{13}
D	P_{04}	Q_{04}	d(半径500m内)	P_{14}	Q_{14}
E	P_{05}	Q_{05}	e(半径500m内)	P_{15}	Q_{15}
F	P_{06}	Q_{06}	f(半径500m内)	P_{16}	Q_{16}
G	P_{07}	Q_{07}	g(半径500m内)	P_{17}	Q_{17}
⋮	⋮	⋮	⋮	⋮	⋮

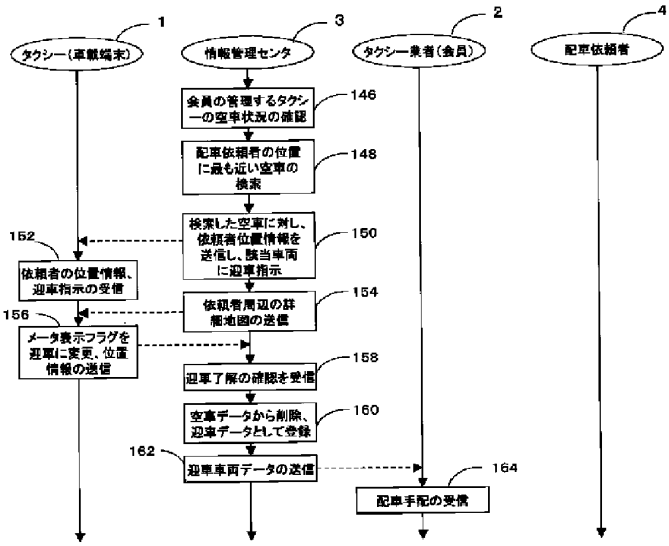
【図５】



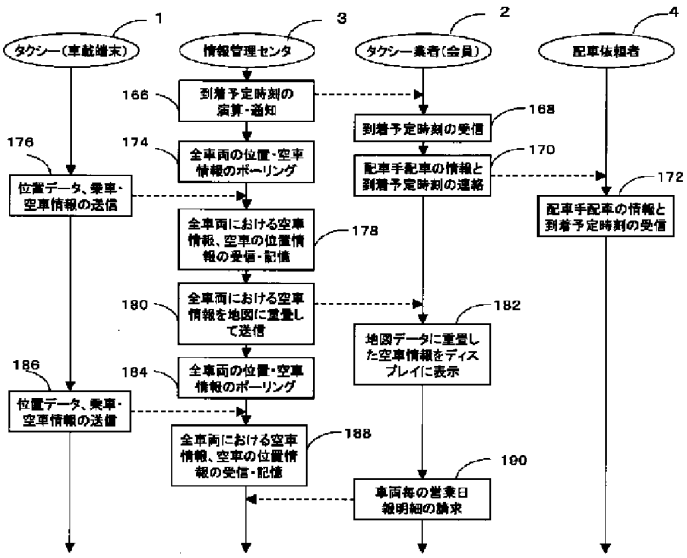
【図６】


1
タクシー（車載端末）
3
情報管理センタ
2
タクシー業者（会員）
4
配車依頼者
126
空車の所定距離毎の位置情報の送信
128
空車の所定距離毎の位置情報の受信・受信データの記憶
124
地図データに重畳した空車情報をディスプレイに表示
132
130
全車両の空車情報の定期的なポーリング
タクシー全車の内空車のみ空車情報を位置情報と共に送信
134
全車両における空車情報、空車の位置情報の受信・データの更新
136
全車両における空車情報を地図に重畳して送信
138
更新した空車情報を地図データに重畳してディスプレイに表示
140
配車の依頼
142
配車依頼と共に配車依頼者の情報の送信
144
依頼者の位置の検索

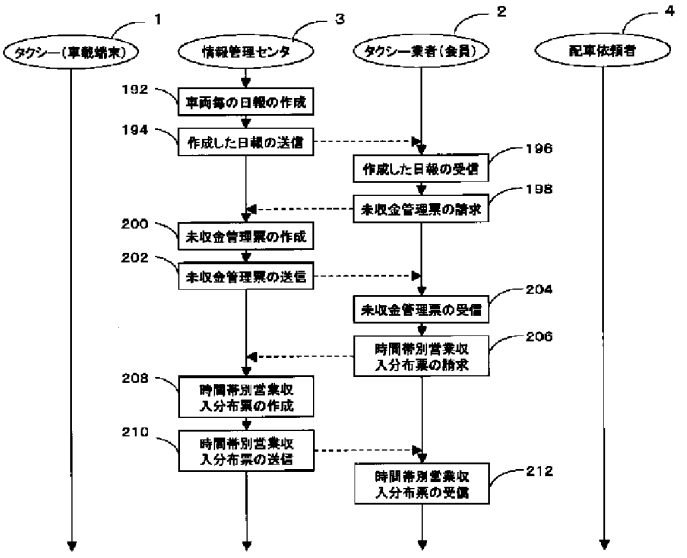
【図７】


1
タクシー（車載端末）
3
情報管理センタ
2
タクシー業者（会員）
4
配車依頼者
146
会員の管理するタクシーの空車状況の確認
148
配車依頼者の位置に最も近い空車の検索
152
150
検索した空車に対し、依頼者位置情報を送信し、該当車両に迎車指示
依頼者の位置情報、迎車指示の受信
154
依頼者周辺の詳細地図の送信
156
メータ表示フラグを迎車に変更、位置情報の送信
158
迎車了解の確認を受信
160
空車データから削除、迎車データとして登録
162
迎車車両データの送信
164
配車手配の受信

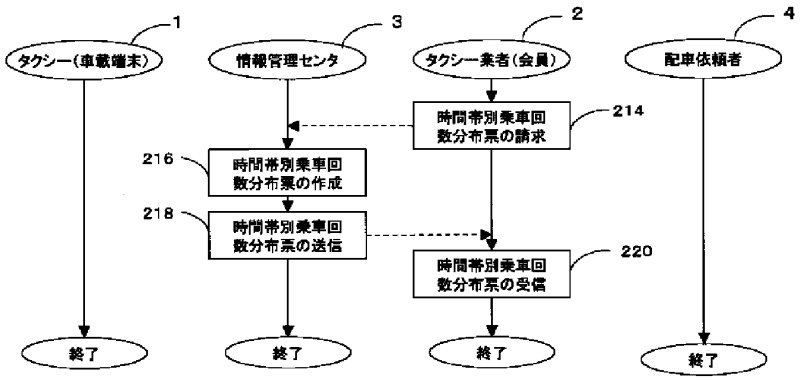
【図８】


1
タクシー（車載端末）
3
情報管理センタ
2
タクシー乗者（会員）
4
配車依頼者
166
到着予定時刻の演算・通知
168
到着予定時刻の受信
176
174
全車両の位置・空車情報のポーリング
170
配車手配車の情報と到着予定時刻の連絡
172
位置データ、乗車・空車情報の送信
配車手配車の情報と到着予定時刻の受信
全車両における空車情報、空車の位置情報の受信・記憶
178
180
全車両における空車情報を地図に重畳して送信
182
地図データに重畳した空車情報をディスプレイに表示
186
184
全車両の位置・空車情報のポーリング
位置データ、乗車・空車情報の送信
188
全車両における空車情報、空車の位置情報の受信・記憶
190
車両毎の営業日報明細の請求

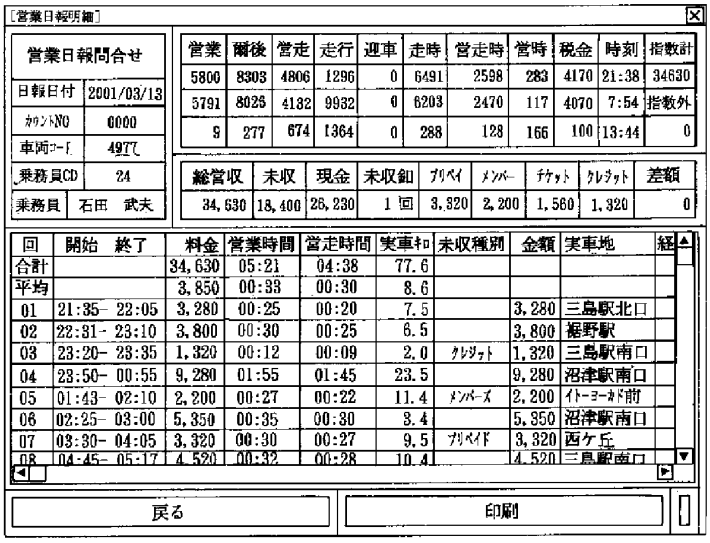
【図９】


1
タクシー（車載端末）
3
情報管理センタ
2
タクシー乗者（会員）
4
配車依頼者
192
車両毎の日報の作成
194
作成した日報の送信
196
作成した日報の受信
198
未収金管理票の請求
200
未収金管理票の作成
202
未収金管理票の送信
204
未収金管理票の受信
206
時間帯別営業収入分布票の請求
208
時間帯別営業収入分布票の作成
210
時間帯別営業収入分布票の送信
212
時間帯別営業収入分布票の受信

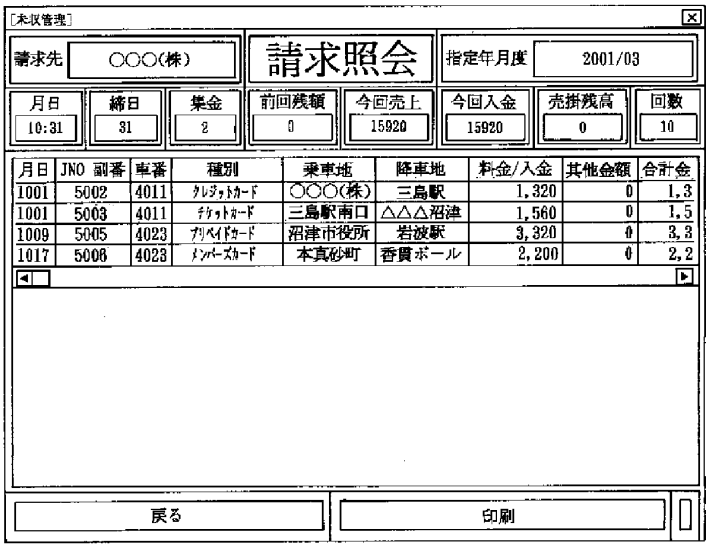
【図１０】


1
タクシー(車載端末)
3
情報管理センタ
2
タクシー乗者(会員)
4
配車依頼者
時間帯別乗車回数分布票の請求
214
216
時間帯別乗車回数分布票の作成
218
時間帯別乗車回数分布票の送信
220
時間帯別乗車回数分布票の受信
終了
終了
終了
終了

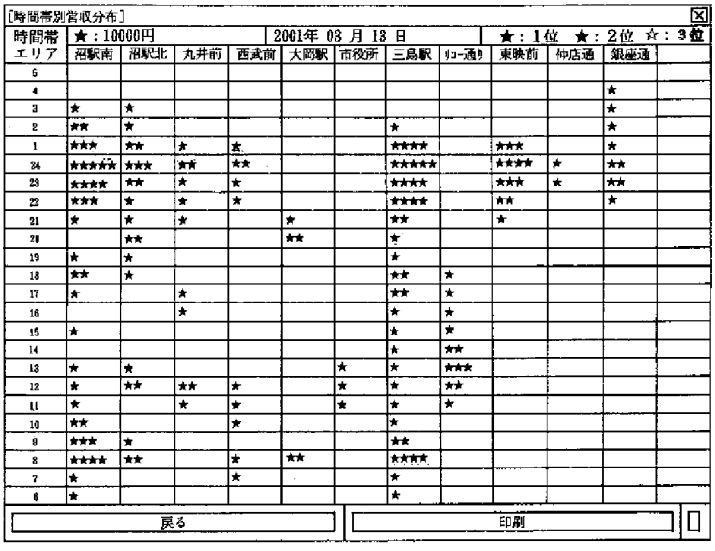
【図１１】


[営業日報明細]
営業日報問合せ
日報日付 2001/03/13
ｶｳﾝﾄNO 0000
車両ｺｰﾄﾞ 4977
乗務員CD 24
乗務員 石田　武夫
営業 稼後 営走 走行 遅車 走時 営走時 営時 税金 時刻 指数計
5806 8303 4806 1296 0 6491 2598 283 4170 21:38 34630
5791 8026 4132 9932 0 6203 2470 117 4070 7:54 指数外
9 277 674 1364 0 288 128 166 100 13:44 0
総営収 未収 現金 未収卸 ﾌﾘﾍﾟｲ ﾒﾝﾊﾞｰ ﾁｹｯﾄ ｸﾚｼﾞｯﾄ 差額
34,630 18,400 26,230 1 回 3,320 2,200 1,560 1,320 0
回 開始 終了 料金 営業時間 営走時間 実車ｷﾛ 未収種別 金額 実車地 経
合計 34,630 05:21 04:38 77.6
平均 3,850 00:33 00:30 8.6
01 21:35- 22:05 3,280 00:25 00:20 7.5 3,280 三島駅北口
02 22:31- 23:10 3,800 00:30 00:25 6.5 3,800 堀野駅
03 23:20- 23:35 1,320 00:12 00:09 2.0 ｸﾚｼﾞｯﾄ 1,320 三島駅南口
04 23:50- 00:55 9,280 01:55 01:45 23.5 9,280 沼津駅南口
05 01:43- 02:10 2,200 00:27 00:22 11.4 ﾒﾝﾊﾞｰｽﾞ 2,200 ｲﾄｰﾖｰｶﾄﾞ前
06 02:25- 03:00 5,350 00:35 00:30 8.4 5,350 沼津駅南口
07 03:30- 04:05 3,320 00:30 00:27 9.5 ﾌﾘﾍﾟｲﾄﾞ 3,320 西ケ丘
08 04:45- 05:17 4,520 00:32 00:28 10.4 4,520 三島駅南口
戻る
印刷

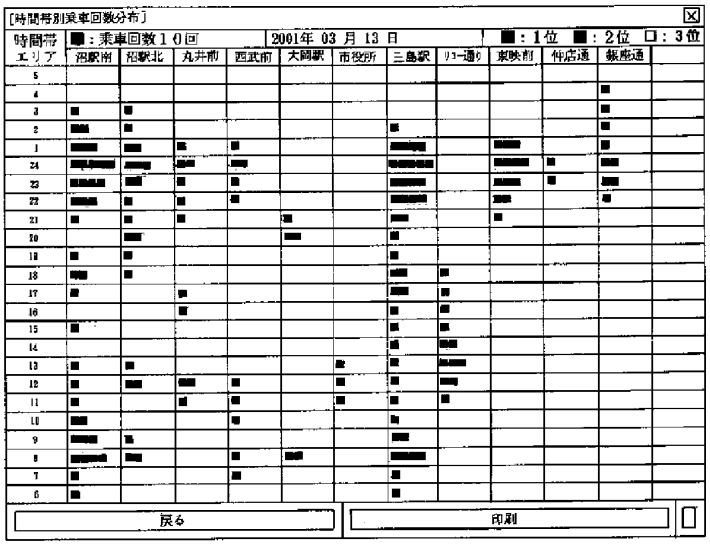
【図１２】


[未収管理]
請求先
○○○(株)
請求照会
指定年月度
2001/03
月日
10:31
締日
31
集金
2
前回残額
0
今回売上
15920
今回入金
15920
売掛残高
0
回数
10
月日 JNO 副番 車番 種別 乗車地 降車地 料金/入金 其他金額 合計金
1001 5002 4011 ｸﾚｼﾞｯﾄｶｰﾄﾞ ○○○(株) 三島駅 1,320 0 1,3
1001 5003 4011 ﾁｹｯﾄｶｰﾄﾞ 三島駅南口 △△△沼津 1,560 0 1,5
1009 5005 4023 ﾌﾟﾘﾍﾟｲﾄﾞｶｰﾄﾞ 沼津市役所 岩波駅 3,320 0 3,3
1017 5006 4023 ﾒﾝﾊﾞｰｽﾞｶｰﾄﾞ 本真砂町 香貫ポール 2,200 0 2,2
戻る
印刷

【図１３】


[時間帯別営収分布]
時間帯
★：10000円
2001年 03 月 18 日
★：1位 ★：2位 ☆：3位
エリア 沼駅南 沼駅北 丸井前 西武前 大岡駅 市役所 三島駅 ﾘｺｰ通り 東映前 仲店通 銀座通
戻る
印刷

【図１４】



フロントページの続き

(51)Int.Cl.[7]	識別記号	ＦＩ		ﾃｰﾏｺｰﾄﾞ(参考)
Ｇ０９Ｂ　29/00		Ｇ０９Ｂ　29/00	Ａ	
			Ｚ	
29/10		29/10	Ａ	

Ｆターム(参考)　2C032 HB22 HC27
5B075 KK07 KK13 KK20 KK33 KK40
ND06 ND20 ND22 ND23 ND34
NS01 PQ02 PQ13 PQ69 PR08
UU14 UU16
5H180 AA14 AA15 BB02 BB04 BB15
BB17 EE03 EE06 FF01 FF05
FF10 FF13 FF17 FF22 FF27
FF32

PAT-NO: JP02003036498A
DOCUMENT-IDENTIFIER: JP 2003036498 A
TITLE: TAXI MANAGING SYSTEM
PUBN-DATE: February 7, 2003

INVENTOR-INFORMATION:

NAME	COUNTRY
MURAMATSU, HARUJI	N/A
OISHI, HIROMOTO	N/A

ASSIGNEE-INFORMATION:

NAME	COUNTRY
YAZAKI CORP	N/A

APPL-NO: JP2001221793
APPL-DATE: July 23, 2001

INT-CL (IPC): G08G001/123 , G06F017/30 , G06F017/60 , G08G001/00 , G09B029/00 , G09B029/10

ABSTRACT:

PROBLEM TO BE SOLVED: To provide a taxi managing system where the empty state of whole taxi vehicles that a taxi company possess can always be grasped without arranging any facility in the taxi company, the appropriate taxi vehicle can be allocated to a person requesting the vehicle when the allocation of the taxi vehicle is requested from a taxi user and operating control data on the taxi vehicle can easily be obtained if need.

SOLUTION: In an information managing center, vehicle data on the whole taxi vehicles 1 in the taxi company 2 are stored in a vehicle database 35 so as to grasp them based on the request of the taxi company 2 managing multiple taxi vehicles 1 loading communication units 11 incorporating GPS receivers. Position information on the whole taxi vehicles 1 are periodically polled. The empty situation of the whole vehicles and position data of the whole

vehicles are written and rewritten into an empty vehicle database 37 based on position information returned from the whole taxi vehicles 1 whose position information are polled. Empty vehicle information is overlapped on a map based on the empty situation and position information of the whole taxi vehicles 1, and it is transmitted to the taxi company 2.

COPYRIGHT: (C)2003,JPO

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (02-18)
Approved for use through 11/30/2020. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT
(Not for submission under 37 CFR 1.99)

Application Number	
Filing Date	2019-10-31
First Named Inventor	Sean O'SULLIVAN
Art Unit	
Examiner Name	
Attorney Docket Number	00199-0001-15000

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1					

If you wish to add additional U.S. Patent citation information please click the Add button. Add

U.S.PATENT APPLICATION PUBLICATIONS Remove

Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20010037174	A1	2001-11-01	Dickerson	
	2	20020011940	A1	2002-01-31	Cappel	
	3	20020034292	A1	2002-03-21	Tuoriniemi et al.	
	4	20020135515	A1	2002-09-26	Rankin et al.	
	5	20030040944	A1	2003-02-27	Hileman	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /K.F/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	
	Filing Date	2019-10-31
	First Named Inventor	Sean O'SULLIVAN
	Art Unit	
	Examiner Name	
	Attorney Docket Number	00199-0001-15000

	6	20040049424	A1	2004-03-11	Murray et al.	
	7	20040106399	A1	2004-06-03	Ki	
	8	20040124977	A1	2004-07-01	Biffar	
	9	20050172148	A1	2005-08-04	Ying	
	10	20070135078	A1	2007-06-14	Ljung	
	11	20070179792	A1	2007-08-02	Kramer	
	12	20080270019	A1	2008-10-30	Anderson et al.	
	13	20080277183	A1	2008-11-13	Huang et al.	

If you wish to add additional U.S. Published Application citation information please click the Add button. Add

FOREIGN PATENT DOCUMENTS Remove

Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2]	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1	02073546	WO	A2	2002-09-19	Andersen et al.		

If you wish to add additional Foreign Patent Document citation information please click the Add button Add

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /K.F/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	
	Filing Date	2019-10-31
	First Named Inventor	Sean O'SULLIVAN
	Art Unit	
	Examiner Name	
	Attorney Docket Number	00199-0001-15000

NON-PATENT LITERATURE DOCUMENTS			Remove
Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1	CHI-CHUNG TAO, "Dynamic Taxi-sharing Service Using Intelligent Transportation System Technologies," 2007, IEEE, 007 International Conference on Wireless Communications, Networking and Mobile Computing Wireless Communications, Networking and Mobile Computing, pp. 3209-3212.	

If you wish to add additional non-patent literature document citation information please click the Add button Add

EXAMINER SIGNATURE

Examiner Signature	/KEITH FERGUSON/	Date Considered	02/05/2020

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /K.F/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99)**	Application Number	
	Filing Date	2019-10-31
	First Named Inventor	Sean O'SULLIVAN
	Art Unit	
	Examiner Name	
	Attorney Docket Number	00199-0001-15000

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Sangwoo Ahn/	Date (YYYY-MM-DD)	2019-10-31
Name/Print	Sangwoo Ahn	Registration Number	76905

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /K.F/

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

~~ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /K.F/~~

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/670,220	10/31/2019	Sean O'SULLIVAN	00199-0001-15000	9574

108449 7590 01/13/2020

Bookoff McAndrews, PLLC
2020 K Street NW
Suite 400
Washington, DC 20006

EXAMINER	

ART UNIT	PAPER NUMBER
2648	

NOTIFICATION DATE	DELIVERY MODE
01/13/2020	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

KRoss@bomcip.com
eofficeaction@appcoll.com
usptomail@bomcip.com

Decision Granting Request for Prioritized Examination (Track I)	**Application No.** 16/670,220	**Applicant(s)** O'SULLIVAN, Sean	
	Examiner CHERYL P GIBSON BAYLOR	**Art Unit** OPET	**AIA (FITF) Status** No

1. THE REQUEST FILED 31 October 2019 IS **GRANTED** .

The above-identified application has met the requirements for prioritized examination

A. ☑ for an original nonprovisional application (Track I).
B. ☐ for an application undergoing continued examination (RCE).

2. **The above-identified application will undergo prioritized examination**. The application will be accorded special status throughout its entire course of prosecution until one of the following occurs:

A. filing a **petition for extension of time** to extend the time period for filing a reply;

B. filing an **amendment to amend the application to contain more than four independent claims, more than thirty total claims** , or a multiple dependent claim;

C. filing a **request for continued examination** ;

D. filing a notice of appeal;

E. filing a request for suspension of action;

F. mailing of a notice of allowance;

G. mailing of a final Office action;

H. completion of examination as defined in 37 CFR 41.102; or

I. abandonment of the application.

Telephone inquiries with regard to this decision should be directed to CHERYL GIBSON BAYLOR at (571)272-3213. In his/her absence, calls may be directed to Petition Help Desk at (571) 272-3282.

/CHERYL GIBSON BAYLOR/ Paralegal Specialist, OPET	

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
16/670,220	10/31/2019	3617	785	00199-0001-15000	20	3

CONFIRMATION NO. 9574

FILING RECEIPT

108449
Bookoff McAndrews, PLLC
2020 K Street NW
Suite 400
Washington, DC 20006

OC000000112737773

Date Mailed: 11/20/2019

Receipt is acknowledged of this non-provisional utility patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF FIRST INVENTOR, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection.

Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please submit a written request for a corrected Filing Receipt, including a properly marked-up ADS showing the changes with strike-through for deletions and underlining for additions. If you received a "Notice to File Missing Parts" or other Notice requiring a response for this application, please submit any request for correction to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections provided that the request is grantable.

Inventor(s)

Sean O'SULLIVAN, Princeton, NJ;

Applicant(s)

CARMA TECHNOLOGY LIMITED, Cork City, IRELAND;

Power of Attorney: The patent practitioners associated with Customer Number 108449

Domestic Priority data as claimed by applicant

This application is a CON of 16/564,819 09/09/2019
which is a CON of 16/197,953 11/21/2018 PAT 10453339
which is a CON of 15/998,864 08/17/2018
which is a CON of 12/924,487 09/28/2010 PAT 10083608
which is a DIV of 12/069,656 02/12/2008 PAT 7840427
which claims benefit of 60/900,808 02/12/2007

Foreign Applications for which priority is claimed (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see http://www.uspto.gov for more information.) - None.
Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.

Permission to Access Application via Priority Document Exchange: Yes

Permission to Access Search Results: Yes

Applicant may provide or rescind an authorization for access using Form PTO/SB/39 or Form PTO/SB/69 as appropriate.

If Required, Foreign Filing License Granted: 11/19/2019
The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 16/670,220**
Projected Publication Date: 02/27/2020
Non-Publication Request: No
Early Publication Request: No
**** SMALL ENTITY ****
Title

SYSTEMS AND METHODS FOR UTILIZING A SHARED TRANSPORT NETWORK FOR DELIVERY OF GOODS

Preliminary Class

104

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at http://www.uspto.gov/web/offices/pac/doc/general/index.html.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, http://www.stopfakes.gov. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific

countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

LICENSE FOR FOREIGN FILING UNDER

Title 35, United States Code, Section 184

Title 37, Code of Federal Regulations, 5.11 & 5.15

GRANTED

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign AssetsControl, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

NOT GRANTED

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

SelectUSA

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The U.S. offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to promote and facilitate business investment. SelectUSA provides information assistance to the international investor community; serves as an ombudsman for existing and potential investors; advocates on behalf of U.S. cities, states, and regions competing for global investment; and counsels U.S. economic development organizations on investment attraction best practices. To learn more about why the United States is the best country in the world to develop

technology, manufacture products, deliver services, and grow your business, visit http://www.SelectUSA.gov or call +1-202-482-6800.

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number: 16/670,220

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY FEE($)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	75		N/A	
SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	330		N/A	
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	380		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	20 minus 20 =	*	x 50 =	0.00	OR		
INDEPENDENT CLAIMS (37 CFR 1.16(h))	3 minus 3 =	*	x 230 =	0.00			
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			0.00			
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				0.00			
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	785		TOTAL	

APPLICATION AS AMENDED - PART II

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY ADDITIONAL FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE($)
AMENDMENT A	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY ADDITIONAL FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE($)
AMENDMENT B	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.

Doc Code: TRACK1.REQ
Document Description: TrackOne Request

PTO/AIA/424 (04-14)

CERTIFICATION AND REQUEST FOR PRIORITIZED EXAMINATION UNDER 37 CFR 1.102(e) (Page 1 of 1)

First Named Inventor:	Sean O'SULLIVAN	Nonprovisional Application Number (if known):	
Title of Invention:	SYSTEMS AND METHODS FOR UTILIZING A SHARED TRANSPORT NETWORK FOR DELIVERY OF GOODS		

APPLICANT HEREBY CERTIFIES THE FOLLOWING AND REQUESTS PRIORITIZED EXAMINATION FOR THE ABOVE-IDENTIFIED APPLICATION.

1. The processing fee set forth in 37 CFR 1.17(i)(1) and the prioritized examination fee set forth in 37 CFR 1.17(c) have been filed with the request. The publication fee requirement is met because that fee, set forth in 37 CFR 1.18(d), is currently $0. The basic filing fee, search fee, and examination fee are filed with the request or have been already been paid. I understand that any required excess claims fees or application size fee must be paid for the application.

2. I understand that the application may not contain, or be amended to contain, more than four independent claims, more than thirty total claims, or any multiple dependent claims, and that any request for an extension of time will cause an outstanding Track I request to be dismissed.

3. The applicable box is checked below:

I. ☑ **Original Application (Track One) - Prioritized Examination under § 1.102(e)(1)**

i. (a) The application is an original nonprovisional utility application filed under 35 U.S.C. 111(a). This certification and request is being filed with the utility application via EFS-Web.

---OR---

(b) The application is an original nonprovisional plant application filed under 35 U.S.C. 111(a). This certification and request is being filed with the plant application in paper.

ii. An executed inventor's oath or declaration under 37 CFR 1.63 or 37 CFR 1.64 for each inventor, **or** the application data sheet meeting the conditions specified in 37 CFR 1.53(f)(3)(i) is filed with the application.

II. ☐ **Request for Continued Examination - Prioritized Examination under § 1.102(e)(2)**

i. A request for continued examination has been filed with, or prior to, this form.
ii. If the application is a utility application, this certification and request is being filed via EFS-Web.
iii. The application is an original nonprovisional utility application filed under 35 U.S.C. 111(a), or is a national stage entry under 35 U.S.C. 371.
iv. This certification and request is being filed prior to the mailing of a first Office action responsive to the request for continued examination.
v. No prior request for continued examination has been granted prioritized examination status under 37 CFR 1.102(e)(2).

Signature /Sangwoo Ahn/	Date October 31, 2019
Name (Print/Typed) Sangwoo Ahn	Practitioner Registration Number 76905

Note: *This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. Submit multiple forms if more than one signature is required.**

☑ *Total of 1 forms are submitted.

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Doc Code: PA..
Document Description: Power of Attorney

PTO/AIA/82A (07-13)
Approved for use through 01/31/2018. OMB 0651-0035
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

TRANSMITTAL FOR POWER OF ATTORNEY TO ONE OR MORE REGISTERED PRACTITIONERS

NOTE: This form is to be submitted with the Power of Attorney by Applicant form (PTO/AIA/82B) to identify the application to which the Power of Attorney is directed, in accordance with 37 CFR 1.5, unless the application number and filing date are identified in the Power of Attorney by Applicant form. If neither form PTO/AIA/82A nor form PTO/AIA82B identifies the application to which the Power of Attorney is directed, the Power of Attorney will not be recognized in the application.

Application Number	Not Yet Assigned
Filing Date	Concurrently Herewith
First Named Inventor	Sean O'SULLIVAN
Title	SYSTEMS AND METHODS FOR UTILIZING A SHARED TRANSPORT NETWORK FOR DELIVERY OF GOODS
Art Unit	Not Yet Assigned
Examiner Name	Not Yet Assigned
Attorney Docket Number	00199-0001-15000

SIGNATURE of Applicant or Patent Practitioner

Signature	/Sangwoo Ahn/	Date (Optional)	
Name	Sangwoo Ahn	Registration Number	76905
Title (if Applicant is a juristic entity)	Authorized Representative		
Applicant Name (if Applicant is a juristic entity)	Carma Technology Ltd.		

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. If more than one applicant, use multiple forms.

☑ *Total of 1 forms are submitted.

This collection of information is required by 37 CFR 1.131, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Doc Code: PA..
Document Description: Power of Attorney

PTO/AIA/82B (07-13)
Approved for use through 01/31/2018. OMB 0651-0035
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number

POWER OF ATTORNEY BY APPLICANT

I hereby revoke all previous powers of attorney given in the application identified in either the attached transmittal letter or the boxes below.

Application Number	Filing Date

(Note: The boxes above may be left blank if information is provided on form PTO/AIA/82A.)

☑ I hereby appoint the Patent Practitioner(s) associated with the following Customer Number as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above: 108449

OR

☐ I hereby appoint Practitioner(s) named in the attached list (form PTO/AIA/82C) as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the patent application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above. (Note: Complete form PTO/AIA/82C.)

Please recognize or change the correspondence address for the application identified in the attached transmittal letter or the boxes above to:

☑ The address associated with the above-mentioned Customer Number

OR

☐ The address associated with Customer Number:

OR

☐ Firm or Individual Name					
Address					
City		State		Zip	
Country					
Telephone		Email			

I am the Applicant (if the Applicant is a juristic entity, list the Applicant name in the box):

Carma Technology Ltd.

☐ Inventor or Joint Inventor (title not required below)
☐ Legal Representative of a Deceased or Legally Incapacitated Inventor (title not required below)
☑ Assignee or Person to Whom the Inventor is Under an Obligation to Assign (provide signer's title if applicant is a juristic entity)
☐ Person Who Otherwise Shows Sufficient Proprietary Interest (e.g., a petition under 37 CFR 1.46(b)(2) was granted in the application or is concurrently being filed with this document) (provide signer's title if applicant is a juristic entity)

SIGNATURE of Applicant for Patent

The undersigned (whose title is supplied below) is authorized to act on behalf of the applicant (e.g., where the applicant is a juristic entity).

Signature		Date (Optional)	
Name	Lawrence Mulligan		
Title	Chief Executive Officer		

NOTE: Signature - This form must be signed by the applicant in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. If more than one applicant, use multiple forms.

☑ Total of 1 forms are submitted.

This collection of information is required by 37 CFR 1.131, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

PATENT
Customer No. 108449
Attorney Docket No. 00199-0001-15000

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re § 1.53(b) continuation application of U.S. Application No. 16/564,819:	)	Parent Art Unit: 2648
Sean O'SULLIVAN	)	Parent Examiner: Cindy Huyen Trandai
Application No.: Not Yet Assigned	)	
Filed: Concurrently Herewith	)	Confirmation No.: Not Yet Assigned
For: SYSTEMS AND METHODS FOR UTILIZING A SHARED TRANSPORT NETWORK FOR DELIVERY OF GOODS	)	***VIA EFS-WEB***

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Commissioner:

INFORMATION DISCLOSURE STATEMENT UNDER 37 C.F.R. § 1.97(b)

Pursuant to 37 C.F.R. §§ 1.56 and 1.97(b), Applicant brings to the attention of the Examiner the documents on the attached IDS Form PTO/SB/08. This Information Disclosure Statement is being filed concurrently with the above-referenced application.

Copies of the U.S. patents and patent publications are not enclosed. The listed foreign patent document and non-patent literature document are of record in prior Application No. 15/998,864 filed on August 17, 2018, and Application No. 12/924,487 filed on September 28, 2010, respectively, upon which Applicant relies for the benefits provided in 35 U.S.C. § 120. Accordingly, copies of the foreign patent document and non-patent literature document are not enclosed.

Applicant respectfully requests that the Examiner consider the listed documents and indicate that they were considered by making appropriate notations on the attached form.

This submission does not represent that a search has been made or that no better art exists and does not constitute an admission that each or all of the listed documents are material or constitute "prior art." If the Examiner applies any of the documents as prior art against any claim in the application and Applicant determines that the cited documents do not constitute "prior art" under United States law, Applicant reserves the right to present to the U.S. Patent and Trademark Office the relevant facts and law regarding the appropriate status of such documents.

Applicant further reserves the right to take appropriate action to establish the patentability of the disclosed invention over the listed documents, should one or more of the documents be applied against the claims of the present application.

If there is any fee due in connection with the filing of this Statement that is not otherwise provided with this filing, please charge the fee to Deposit Account No. 50-5906.

Respectfully submitted,

BOOKOFF McANDREWS, PLLC
Customer Number: 108449

Dated: October 31, 2019

By: /Sangwoo Ahn/
Sangwoo Ahn
Reg. No. 76905
(202) 808-3942

PTO/SB/08a (02-18)
Approved for use through 11/30/2020. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT
(Not for submission under 37 CFR 1.99)

Application Number	
Filing Date	2019-10-31
First Named Inventor	Sean O'SULLIVAN
Art Unit	
Examiner Name	
Attorney Docket Number	00199-0001-15000

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1					

If you wish to add additional U.S. Patent citation information please click the Add button. Add

U.S.PATENT APPLICATION PUBLICATIONS Remove

Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20010037174	A1	2001-11-01	Dickerson	
	2	20020011940	A1	2002-01-31	Cappel	
	3	20020034292	A1	2002-03-21	Tuoriniemi et al.	
	4	20020135515	A1	2002-09-26	Rankin et al.	
	5	20030040944	A1	2003-02-27	Hileman	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	
	Filing Date	2019-10-31
	First Named Inventor	Sean O'SULLIVAN
	Art Unit	
	Examiner Name	
	Attorney Docket Number	00199-0001-15000

	6	20040049424	A1	2004-03-11	Murray et al.	
	7	20040106399	A1	2004-06-03	Ki	
	8	20040124977	A1	2004-07-01	Biffar	
	9	20050172148	A1	2005-08-04	Ying	
	10	20070135078	A1	2007-06-14	Ljung	
	11	20070179792	A1	2007-08-02	Kramer	
	12	20080270019	A1	2008-10-30	Anderson et al.	
	13	20080277183	A1	2008-11-13	Huang et al.	

If you wish to add additional U.S. Published Application citation information please click the Add button. Add

FOREIGN PATENT DOCUMENTS Remove

Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] i	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1	02073546	WO	A2	2002-09-19	Andersen et al.		

If you wish to add additional Foreign Patent Document citation information please click the Add button Add

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	
	Filing Date	2019-10-31
	First Named Inventor	Sean O'SULLIVAN
	Art Unit	
	Examiner Name	
	Attorney Docket Number	00199-0001-15000

NON-PATENT LITERATURE DOCUMENTS			Remove
Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1	CHI-CHUNG TAO, "Dynamic Taxi-sharing Service Using Intelligent Transportation System Technologies," 2007, IEEE, 007 International Conference on Wireless Communications, Networking and Mobile Computing Wireless Communications, Networking and Mobile Computing, pp. 3209-3212.	

If you wish to add additional non-patent literature document citation information please click the Add button Add

EXAMINER SIGNATURE

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	
	Filing Date	2019-10-31
	First Named Inventor	Sean O'SULLIVAN
	Art Unit	
	Examiner Name	
	Attorney Docket Number	00199-0001-15000

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Sangwoo Ahn/	Date (YYYY-MM-DD)	2019-10-31
Name/Print	Sangwoo Ahn	Registration Number	76905

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Patent Application Fee Transmittal

Application Number:	
Filing Date:	
Title of Invention:	SYSTEMS AND METHODS FOR UTILIZING A SHARED TRANSPORT NETWORK FOR DELIVERY OF GOODS
First Named Inventor/Applicant Name:	Sean O'SULLIVAN
Filer:	Sangwoo Ahn/Victoria Lyon
Attorney Docket Number:	00199-0001-15000

Filed as Small Entity

Filing Fees for Track I Prioritized Examination - Nonprovisional Application under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
UTILITY FILING FEE (ELECTRONIC FILING)	4011	1	75	75
UTILITY SEARCH FEE	2111	1	330	330
UTILITY EXAMINATION FEE	2311	1	380	380
REQUEST FOR PRIORITIZED EXAMINATION	2817	1	2000	2000
Pages:				
Claims:				
Miscellaneous-Filing:				
PROCESSING FEE, EXCEPT PROV. APPLS.	2830	1	70	70

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
		Total in USD ($)		**2855**

Electronic Acknowledgement Receipt	
EFS ID:	37621386
Application Number:	16670220
International Application Number:	
Confirmation Number:	9574
Title of Invention:	SYSTEMS AND METHODS FOR UTILIZING A SHARED TRANSPORT NETWORK FOR DELIVERY OF GOODS
First Named Inventor/Applicant Name:	Sean O'SULLIVAN
Customer Number:	108449
Filer:	Sangwoo Ahn/Victoria Lyon
Filer Authorized By:	Sangwoo Ahn
Attorney Docket Number:	00199-0001-15000
Receipt Date:	31-OCT-2019
Filing Date:	
Time Stamp:	15:02:50
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	$2855
RAM confirmation Number	E20190UF03066278
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	TrackOne Request	Track1Request.pdf	138795 8adea0848145e1387baf63f1c508176c8e4d6923	no	2
Warnings:					
Information:					
2	Transmittal of New Application	Track1ConTransmittal.pdf	82725 ae3b319dfbd1564a9fe87b5e113ade74e85f6c14	no	3
Warnings:					
Information:					
3	Specification	Specification.pdf	9516100 747182992dacde31619a87f971173f88bed5f81a	no	62
Warnings:					
Information:					
4	Drawings-only black and white line drawings	DrawingsOrig.pdf	16192281 10ae50112186f523a14149094e637618131263a7	no	32
Warnings:					
Information:					
5	Application Data Sheet	ADS.pdf	1874712 4ea8b4183a1e8962a20c08ef497c3615cc6e7b53	no	9
Warnings:					
Information:					
6	Oath or Declaration filed	Dec.pdf	1699611 c69cf100688db1c8d50be3deb8c05191930123c0	no	1
Warnings:					
Information:					

7	Preliminary Amendment	Prelim.pdf	102440 d89fd9ec718d5a082cc328cb3a6766137070a631	no	12
Warnings:					
Information:					
8	Drawings-only black and white line drawings	DrawingsReplacement.pdf	136047 8c6f2da9c3a92787a9dff69dcdcd1c86541afe3a	no	32
Warnings:					
Information:					
9	Power of Attorney	POA.pdf	198442 ef61c1baf2404212f13e9f0db9f821267b38e132	no	2
Warnings:					
Information:					
10	Transmittal Letter	IDSTransmittal.pdf	83479 372adcb79dcb1e38d208459037cae701dfa3e9c2	no	2
Warnings:					
Information:					
11	Information Disclosure Statement (IDS) Form (SB08)	SB08.pdf	1054001 949b500d4152ac09238f313f03b27a2f332cfcff	no	5
Warnings:					
Information:					
12	Fee Worksheet (SB06)	fee-info.pdf	38625 b1fbe5b9cc4f2b87329fdc34455885d2ae71da1e	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	31117258		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PATENT
Customer No.: 108449
Attorney Docket No.: 00199-0001-15000

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re § 1.53(b) continuation application of U.S. Application No. 16/564,819:	)	Parent Art Unit: 2648
Sean O'SULLIVAN	)	Parent Examiner: Cindy Huyen Trandai
Application No.: Not Yet Assigned	)	
Filed: Concurrently Herewith	)	Confirmation No.: Not Yet Assigned
For: SYSTEMS AND METHODS FOR UTILIZING A SHARED TRANSPORT NETWORK FOR DELIVERY OF GOODS	)	***VIA EFS-WEB***

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Commissioner:

TRANSMITTAL OF CONTINUATION PATENT APPLICATION FILED UNDER 37 CFR § 1.53(b)

This is a request for filing a continuation application under 37 CFR §1.53(b) of pending prior U.S. Application No. 16/564,819, filed September 9, 2019, which is a continuation of U.S. Application No. 16/197,953, filed November 21, 2018, which is a continuation of U.S. Application No. 15/998,864, filed August 17, 2018, which is a continuation of U.S. Application No. 12/924,487, filed September 28, 2010, which is a division of U.S. Application No. 12/069,656, filed February 12, 2008, which claims priority to U.S. Provisional Application No. 60/900,808, filed February 12, 2007, which are incorporated herein by reference in their entireties.

Enclosed is a new continuation application, including the following:

1. A complete copy of prior U.S. Application No. 16/564,819, as filed on September 9, 2019, including the specification, claims, and abstract (62 pages), and drawings (32 sheets).

2. Application Data Sheet (ADS) in accordance with 37 CFR § 1.76 (9 pages).

3. Executed Declaration (1 page).

4. Preliminary Amendment (12 pages).

5. Power of Attorney and Transmittal (2 pages).

6. Certification and Request for Prioritized Examination under 37 CFR 1.102(e) (2 pages).

7. Information Disclosure Statement (2 pages) and SB/08 (5 pages).

8. The total required fees of $2855.00, as set forth below, are being paid electronically by credit card at the time of filing.

Filing fees are being paid electronically as follows:

Search Fee					$660	$ 660.00
Examination Fee					$760	$ 760.00
	Number of Claims		Basic	Extra		
Total Claims	20	-	20	0	x $100	$ 0.00
Independent Claims	3	-	3	0	x $460	$ 0.00
☐ Presentation of Multiple Dep. Claim(s)					$820	
Size Fee: EFS-Web Filing Total Application Pages (specification, drawings, printed sequence or computer listing, preliminary amendment)	(106 pages X .75 – 100) ÷ 50 = 0* 0* x 400 = $0 *Rounded up to next whole number					$ 0.00
Track 1 Request						$ 4,000.00
Track 1 Processing Fee						$ 140.00
Late Declaration Surcharge					$160	$ 0.00
Subtotal						$ 5560.00
Reduction by 1/2 if small entity						- 2780.00
Basic Filing Fee for Electronic Small Entity					$75	$ 75.00
TOTAL FEES DUE						$ 2855.00

This application has been assigned to **Carma Technology Limited**. The assignment document will be recorded separately. Please accord this application an application number and filing date.

If there is any fee due in connection with the filing of this application that is not otherwise provided with this filing, please charge the fee to Deposit Account No. 50-5906. In addition, the Commissioner is hereby authorized to charge any additional fees due and any other fees due under 37 C.F.R. § 1.16 or § 1.17 during the pendency of this application to Deposit Account No. 50-5906.

Please address all correspondence with respect to this application to: **Bookoff McAndrews, PLLC, Customer No. 108449**.

Respectfully submitted,

BOOKOFF McANDREWS, PLLC
Customer Number: 108449

Dated: October 31, 2019

By: /Sangwoo Ahn/
Sangwoo Ahn
Reg. No. 76905
(202) 808-3942

Figure 1. Shared Transport Network System

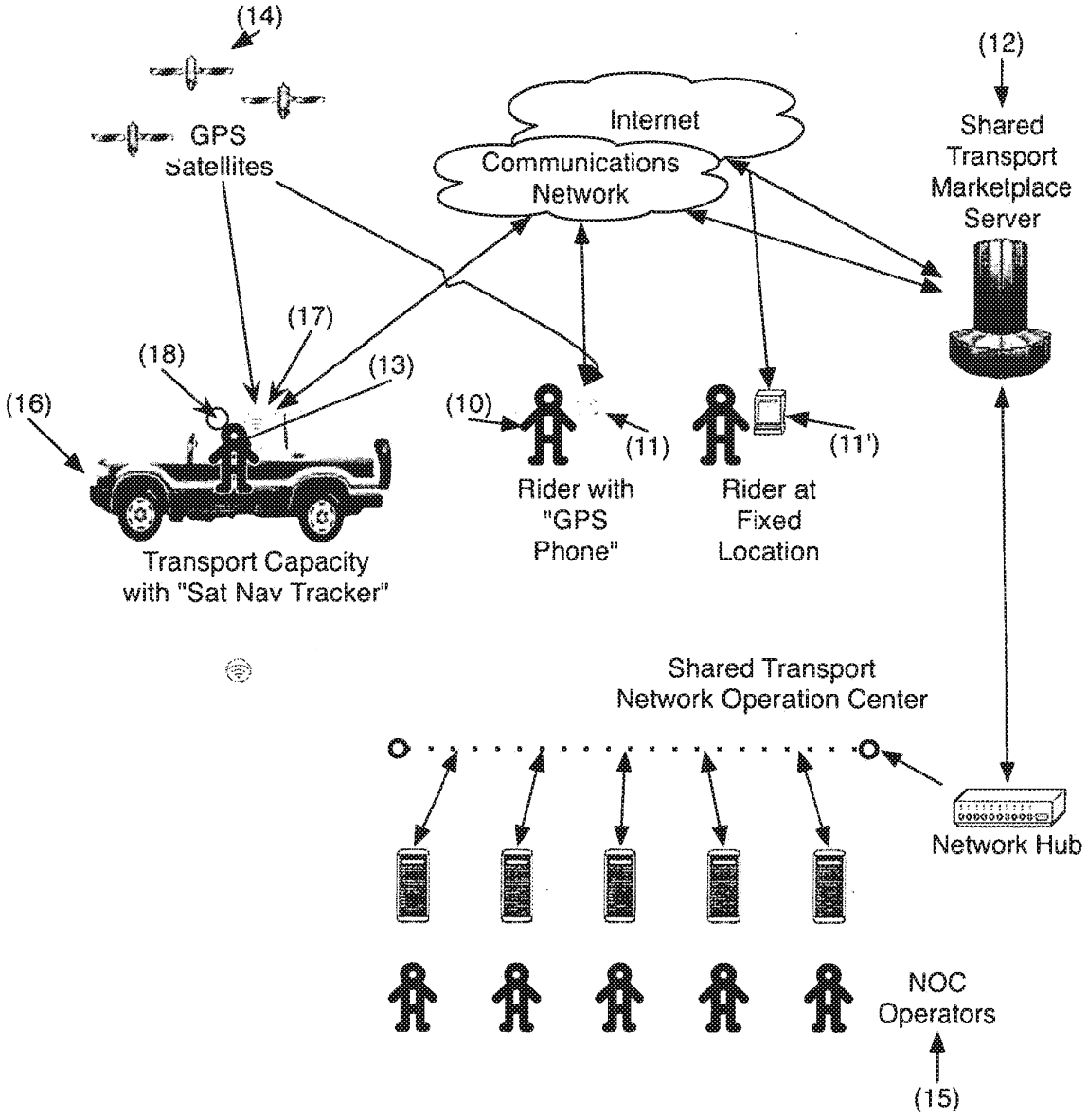


Figure 2. Transport Capacity Computing and Communications Components

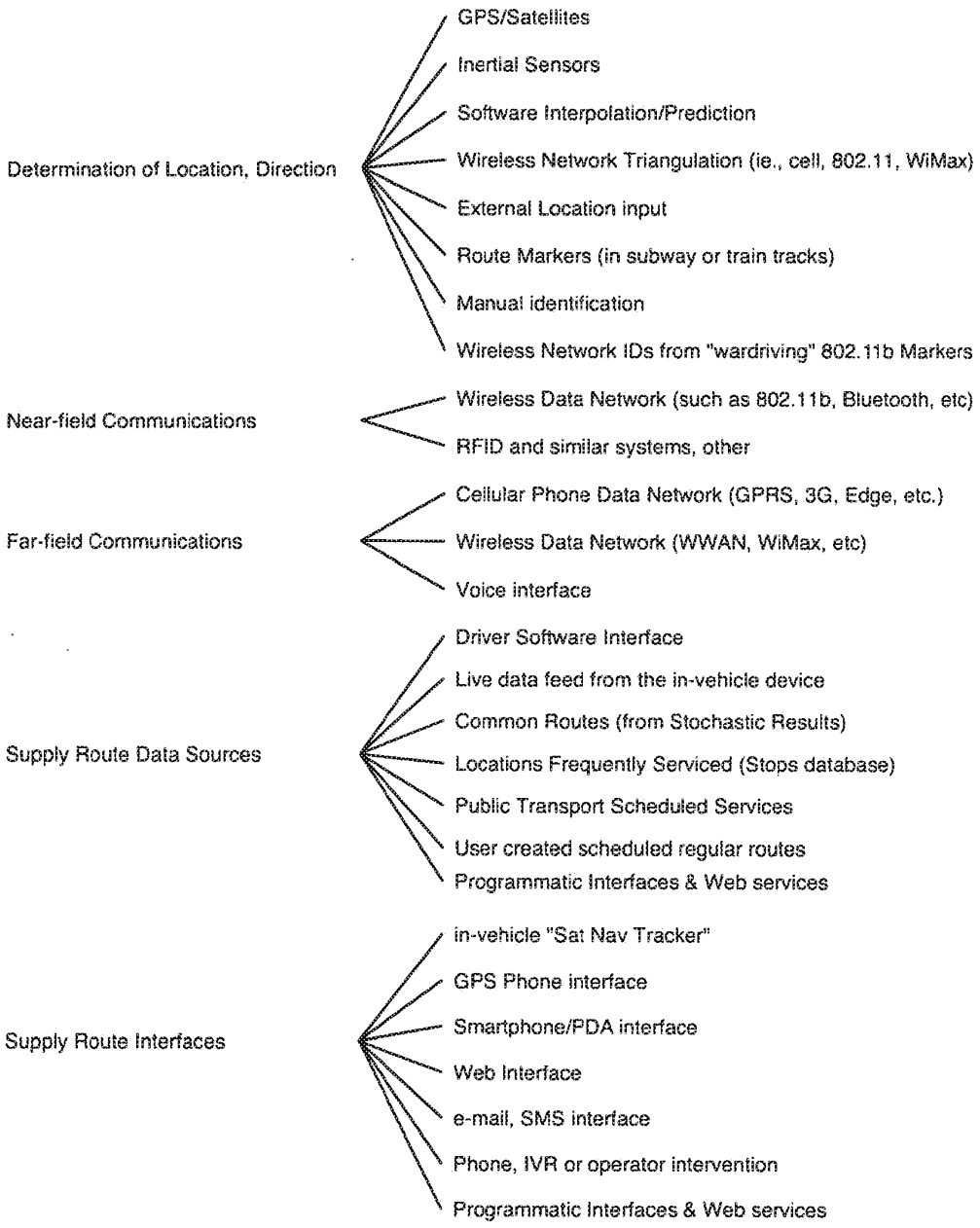


Figure 3. Rider Technology Components and Information Elements

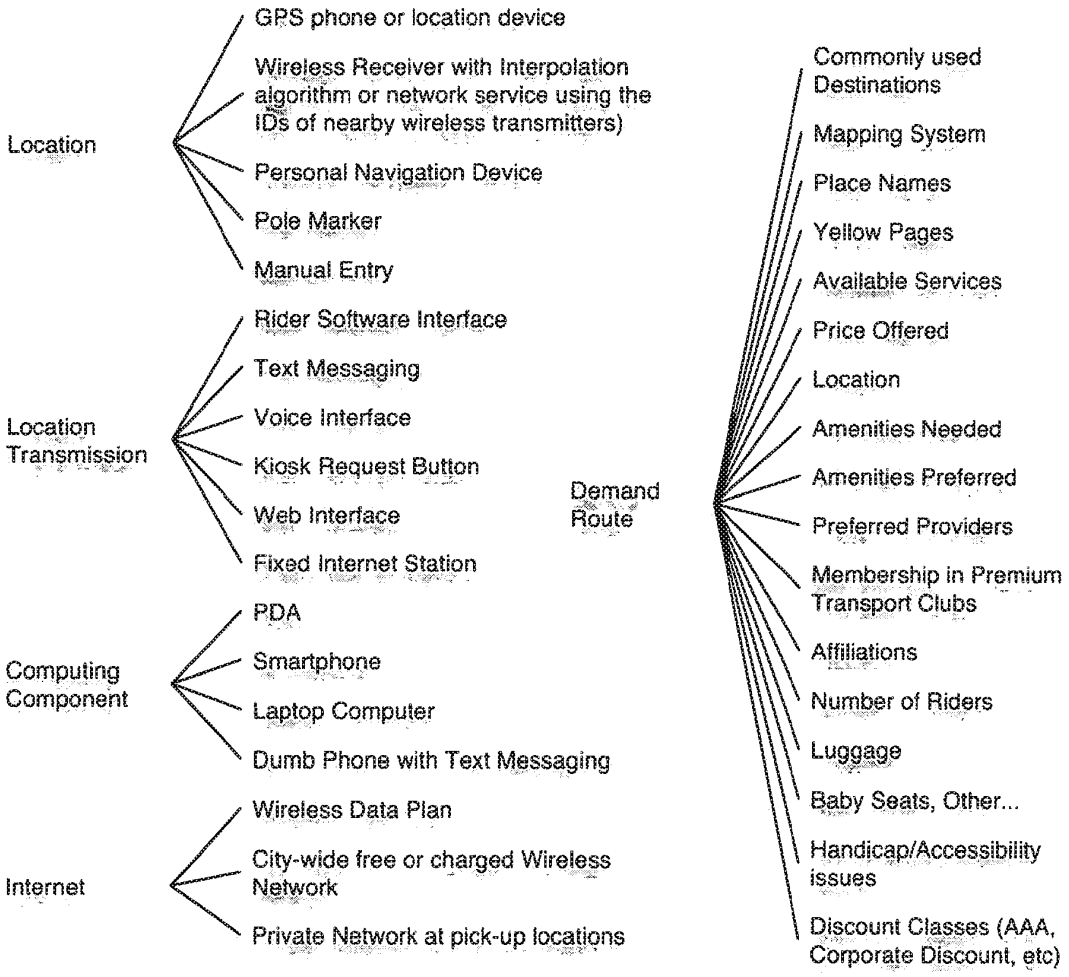
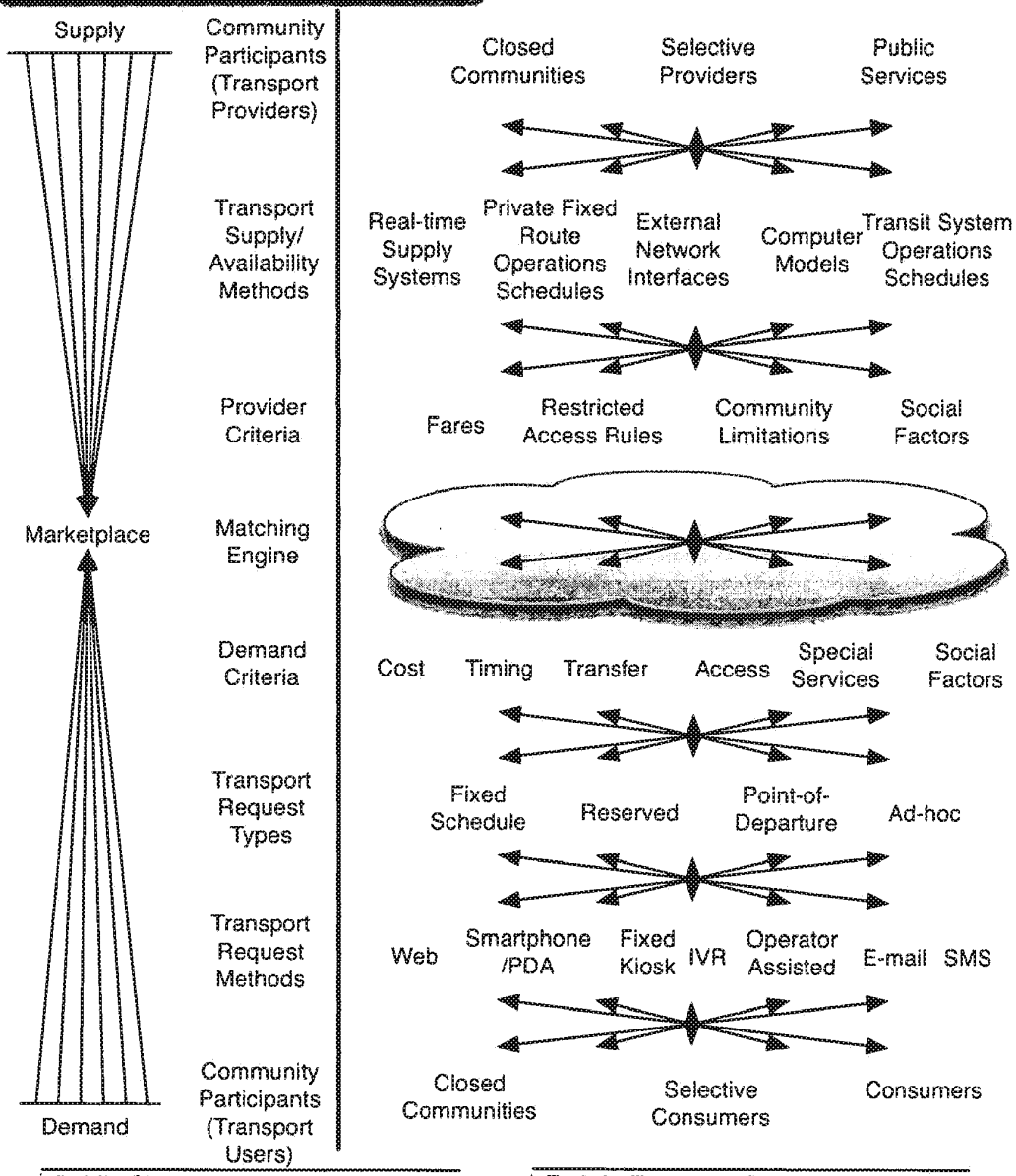


Figure 4. Shared Transport Marketplace



Public Shared Transport Providers
Bus Networks
Rail & Subway Networks
Jitney/Share Taxi Providers
Private Scheduled Service Bus

Freight Transport Providers
Private Package Transport Companies
National Postal Carriers
Independent Operators
Ad-hoc consumer

Closed Member Communities
School Bus Systems
Employee Shuttle Buses
Affiliations (social clubs, sports networks)

Dispatchable, non-Shared Transport
Taxi Companies
Private Hackney operators
Premium service transport operator

Figure 5a. Rider Experience Flowchart

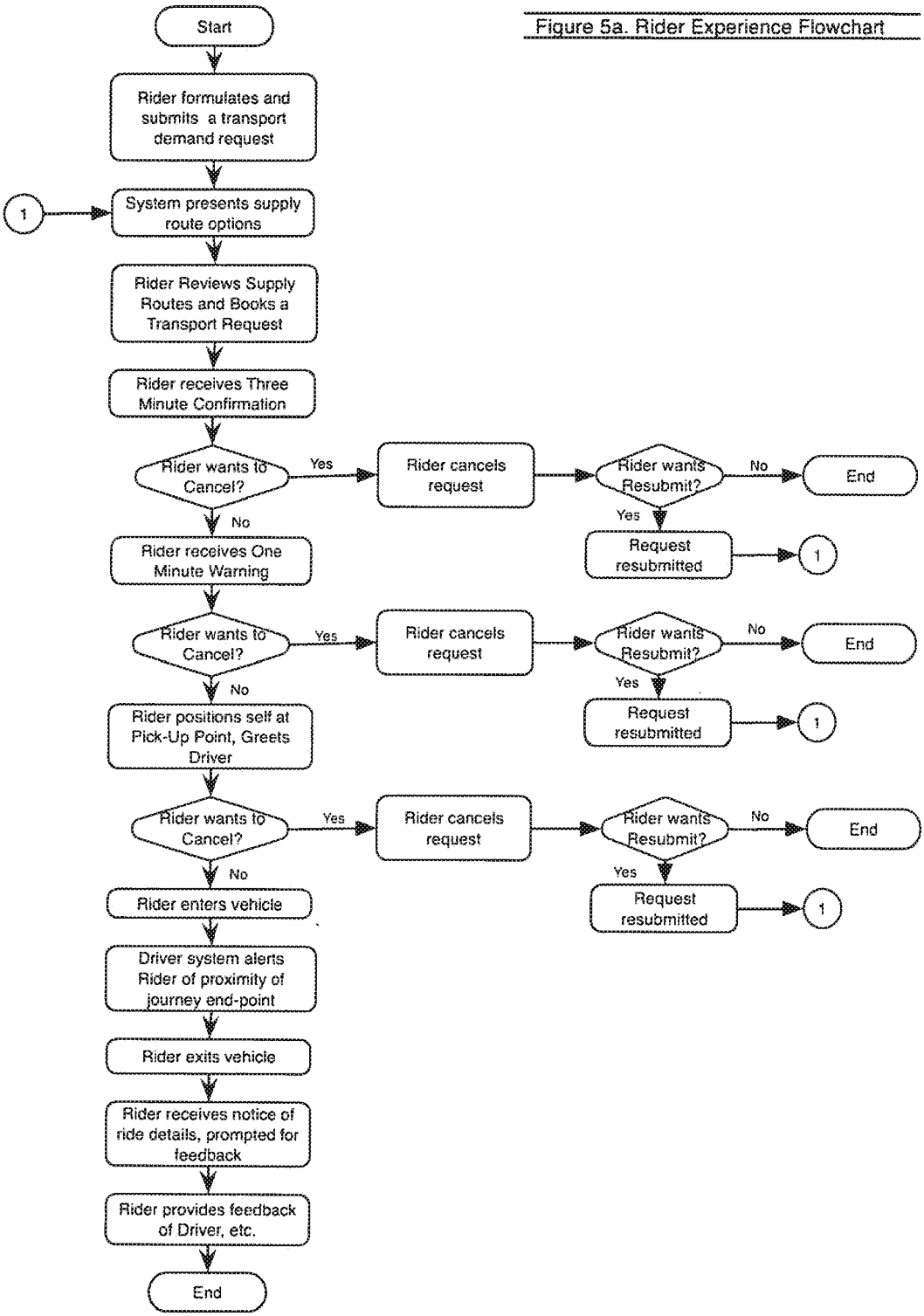
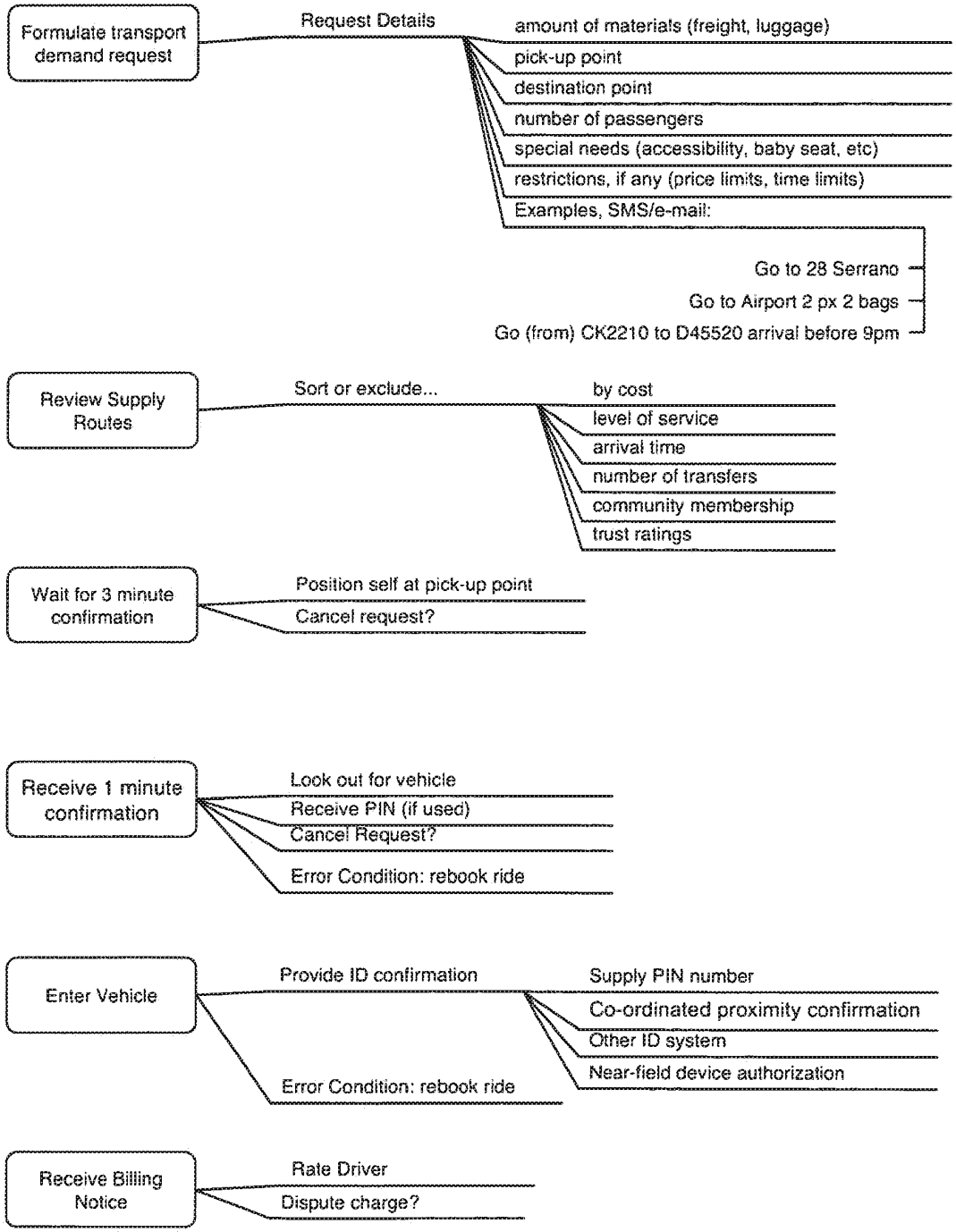


Figure 5b. Rider Experience, Functional Options Data and Action Details



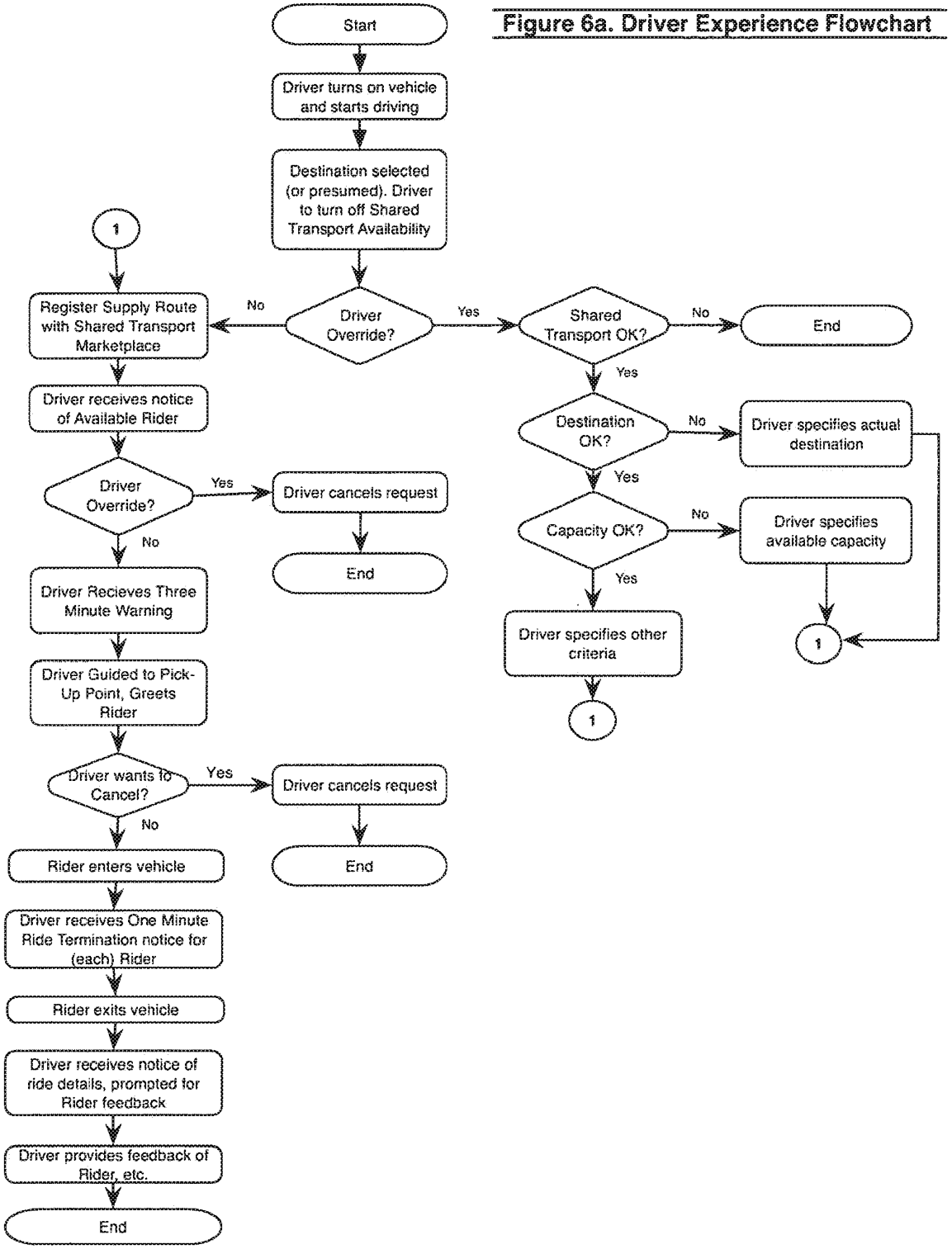
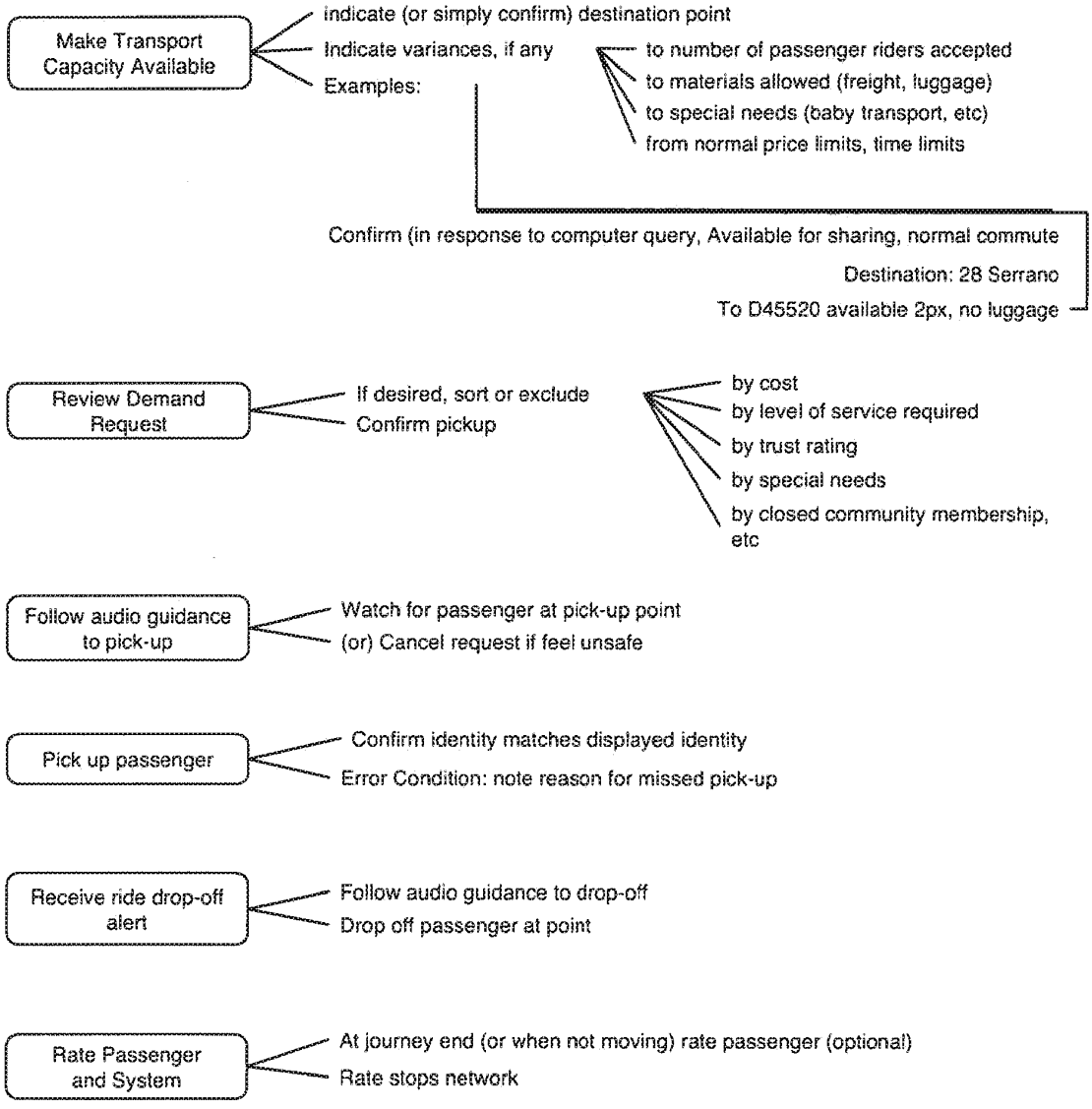
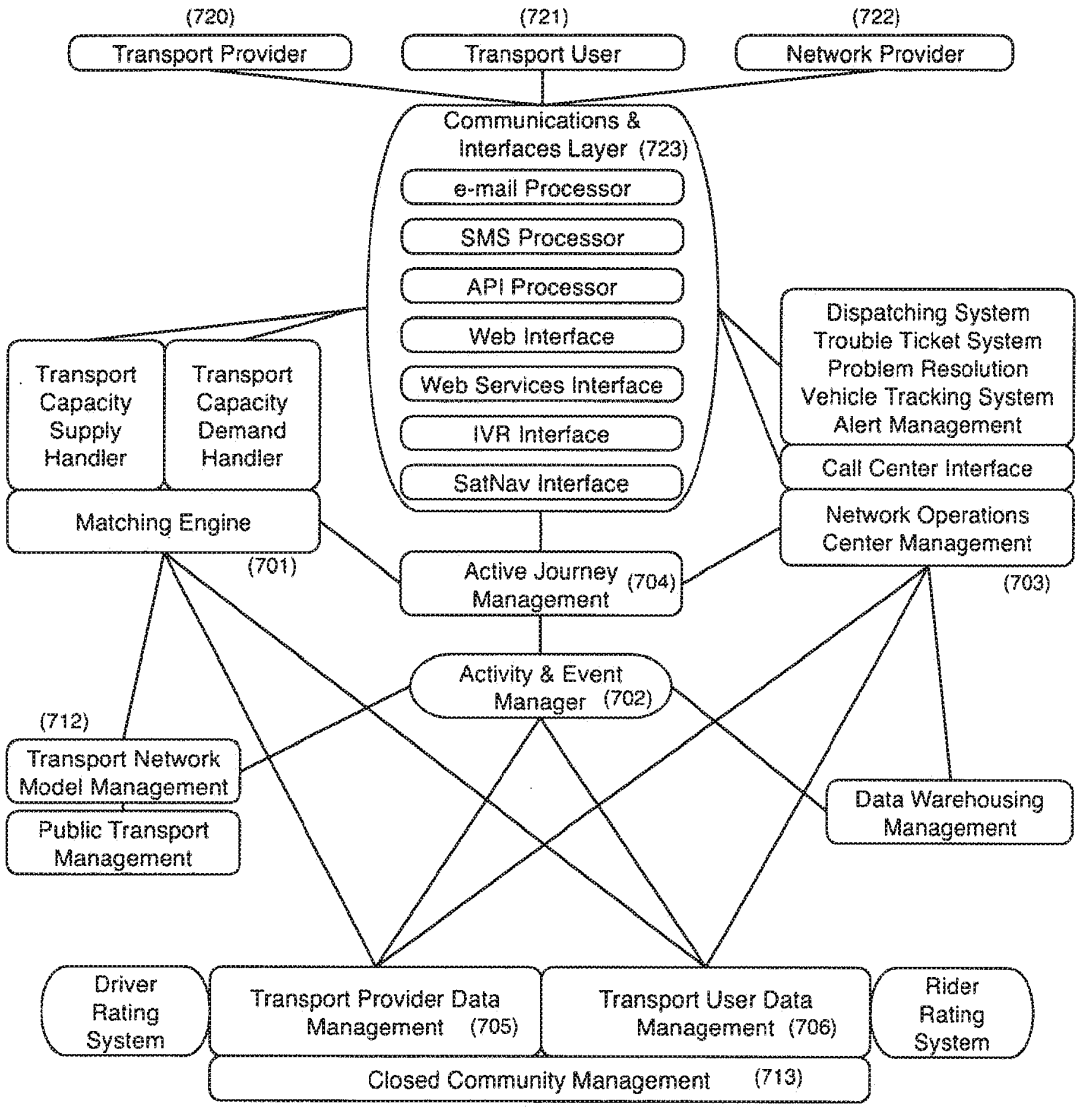


Figure 6a. Driver Experience Flowchart

Figure 6b. Driver Experience - Functional Options





RIDER DB (707)	DRIVER DB (708)	NETWORK MODEL DB (710)	Activity & Event Manager
- Preferences	- Preferences	- Stops	Driver Event Handling
- Placenames	- Placenames	- Transit Times	Rider Event Handling
- Transactions	- Transactions	- Distances	Interface with Billing System
- Audit Trail	- Audit Trail	- Stochastic model info	External Ticketing Interfaces
- Activity	- Activity	- Visualization info	
- Ratings	- Ratings		Transport Management Stochastic Analyzer (711)
- Routes	- Routes	JOURNEYS DB (709)	Geography Manager
- Communities	- Communities	- Journey Activity	Public Transport Model
			Visualization Models

Fig 7. Shared Transport Marketplace Server & Subsystems

Fig 8a. Driver Journey, on Street Network

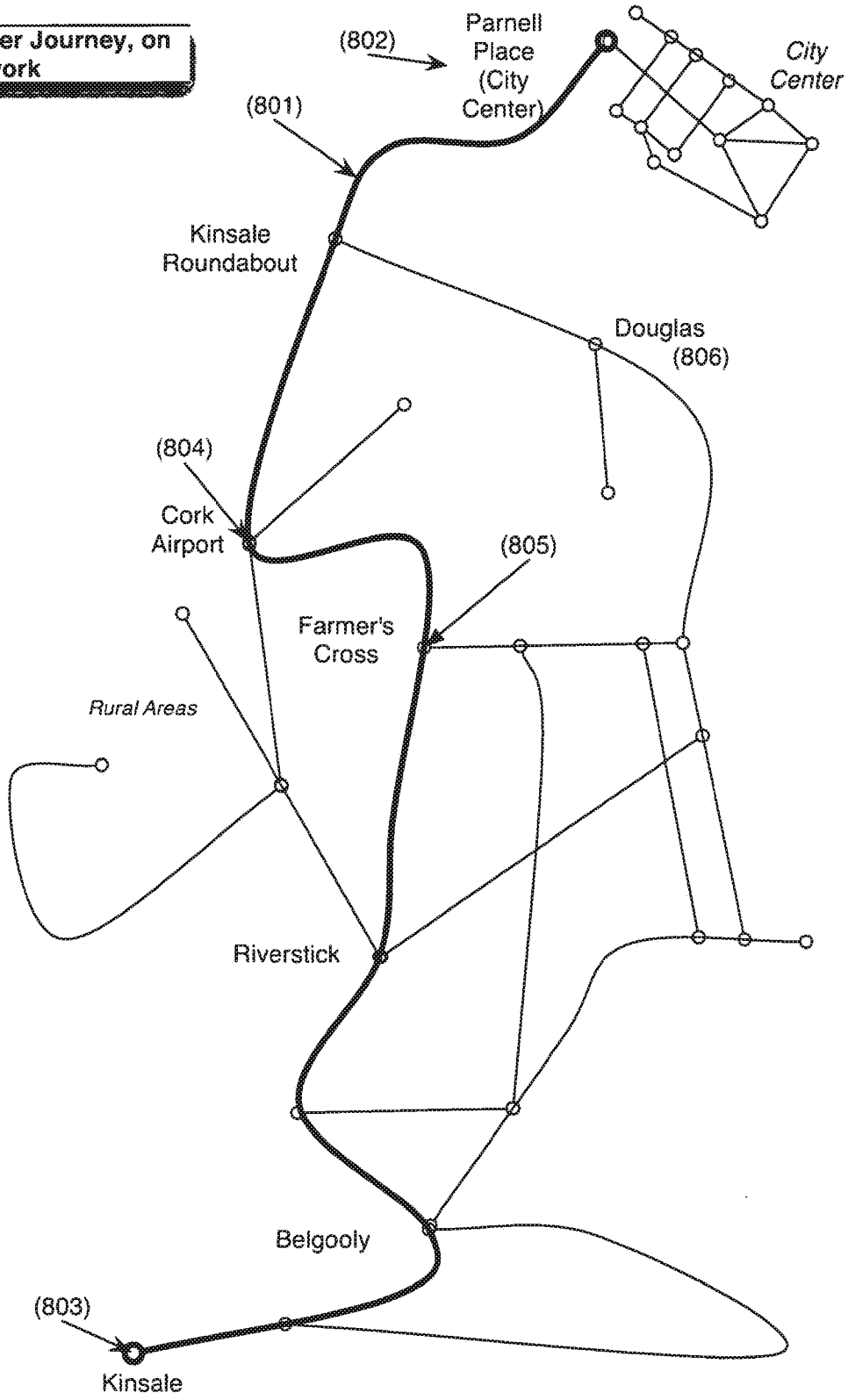


Fig 8b. Driver Journey Logical Characterization

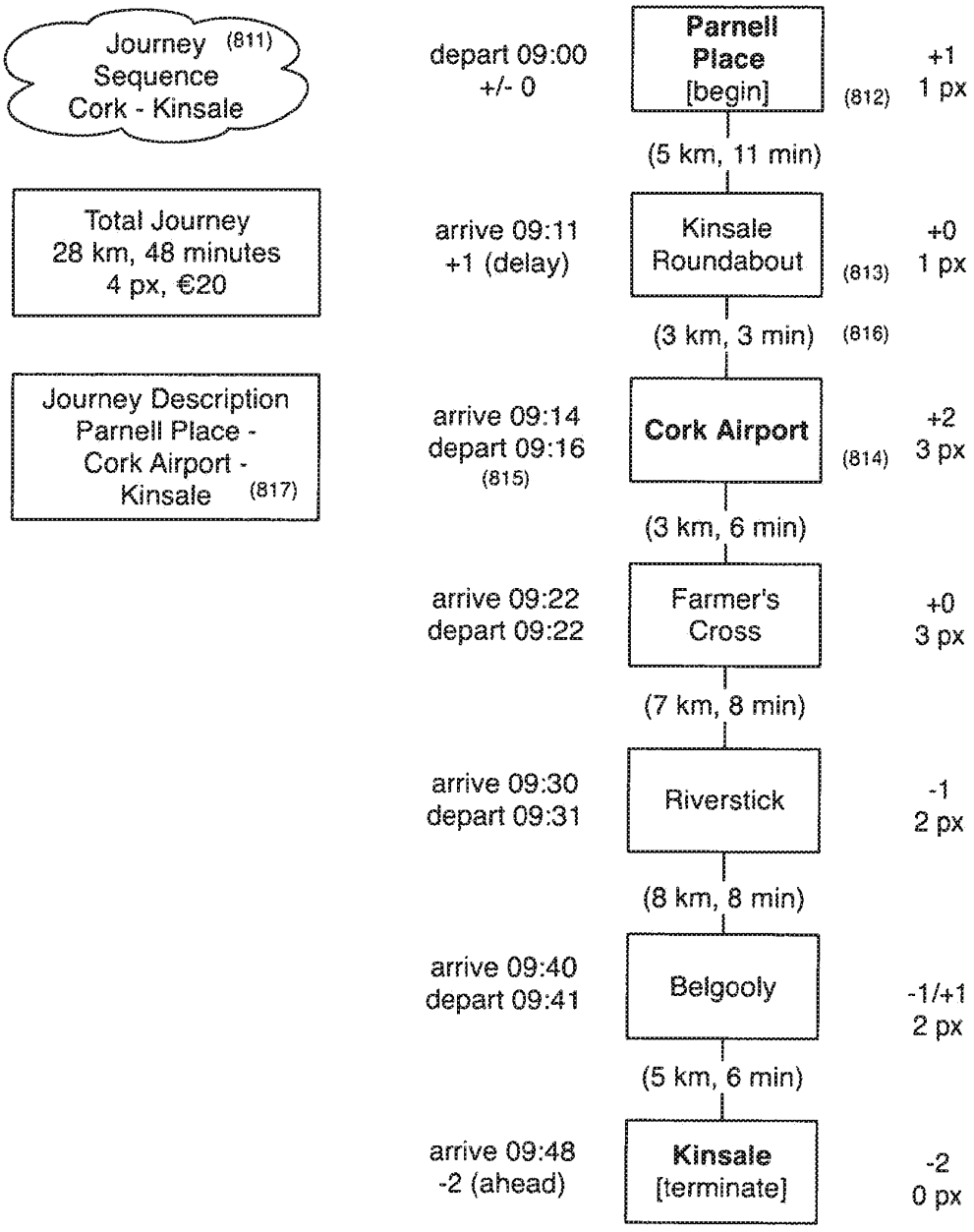


Fig 9a. Active Network, Geographical Representation

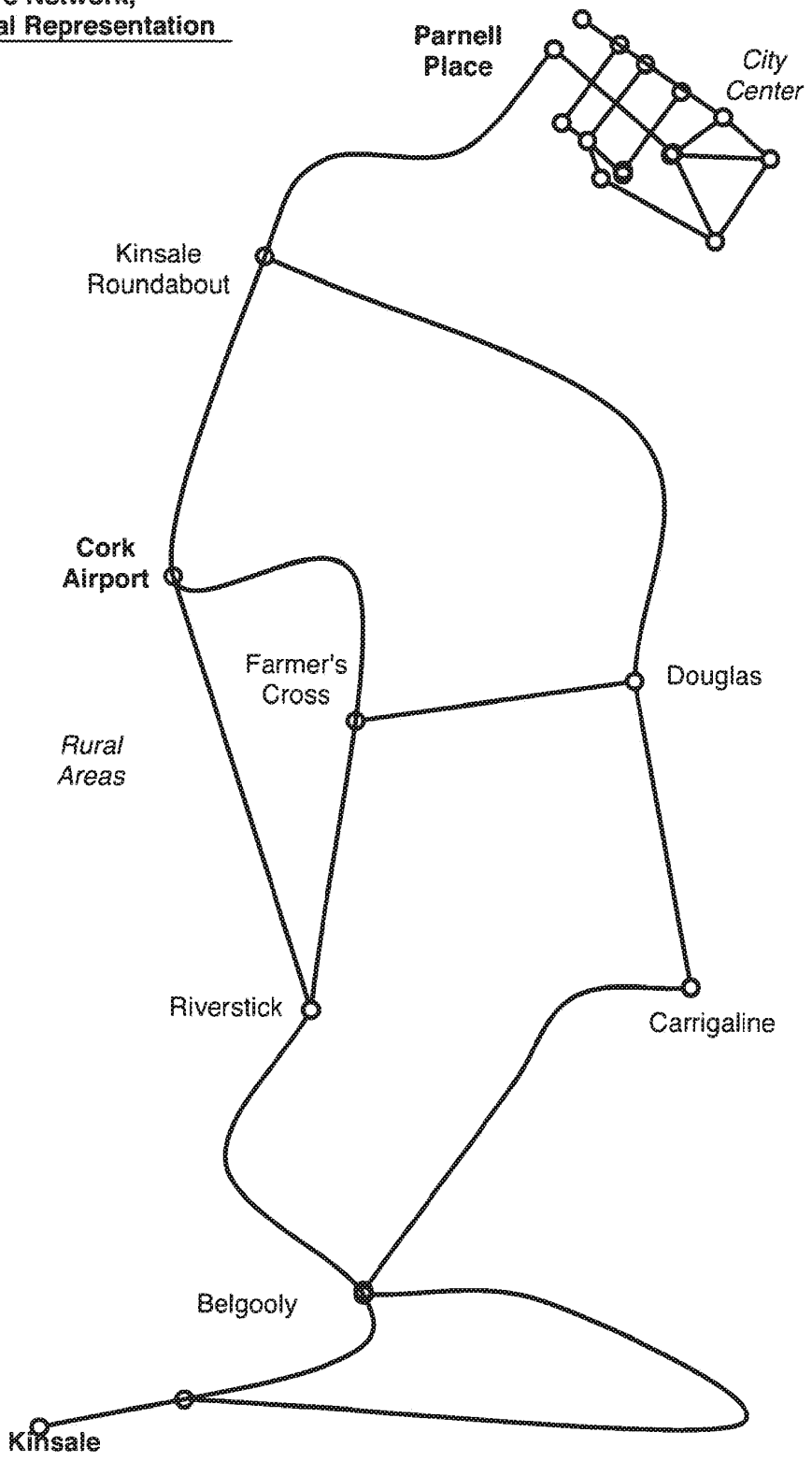


Figure 9b. Active Transport Network, Logical Presentation

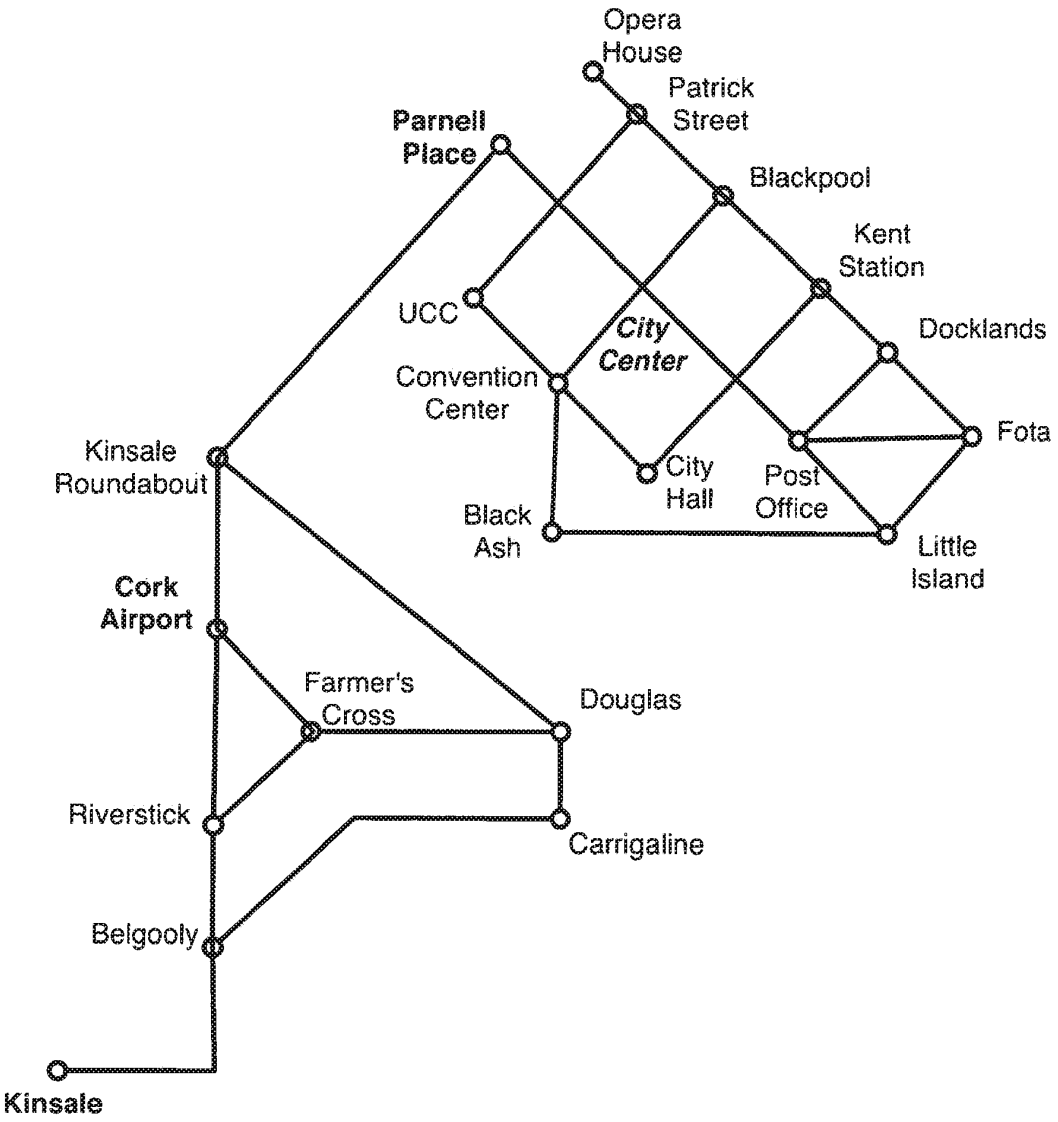
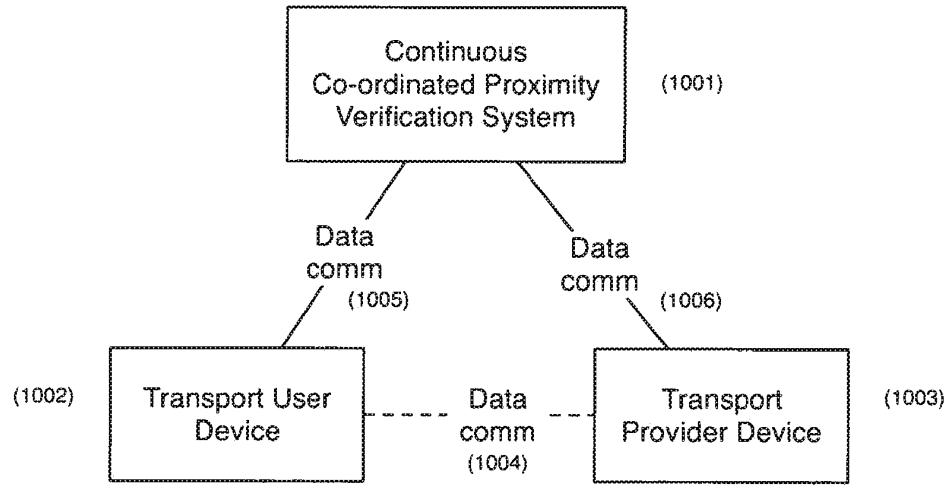


Figure 10a. Elements and communication channels for Continuous Co-ordinated Proximity by independent verification of position



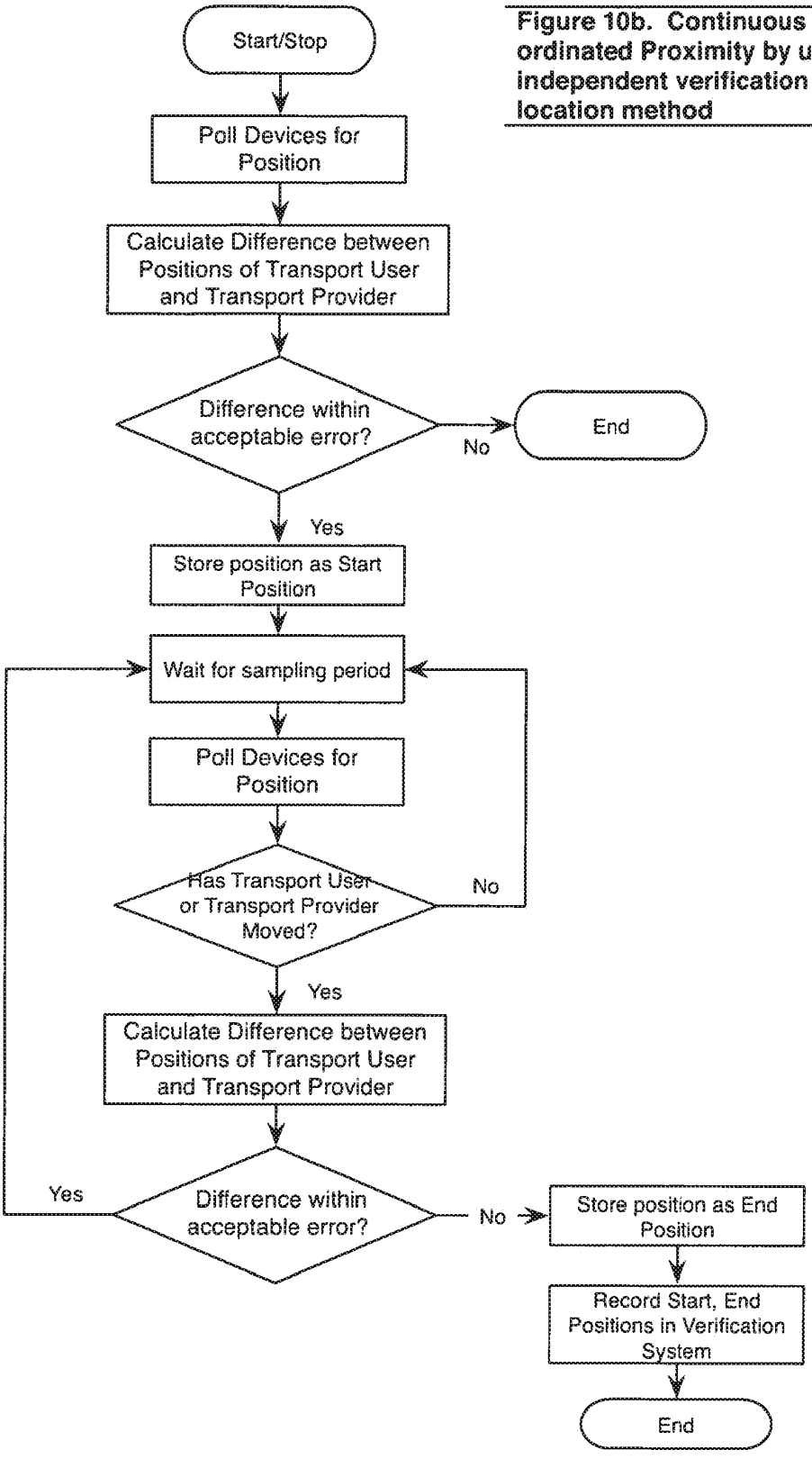
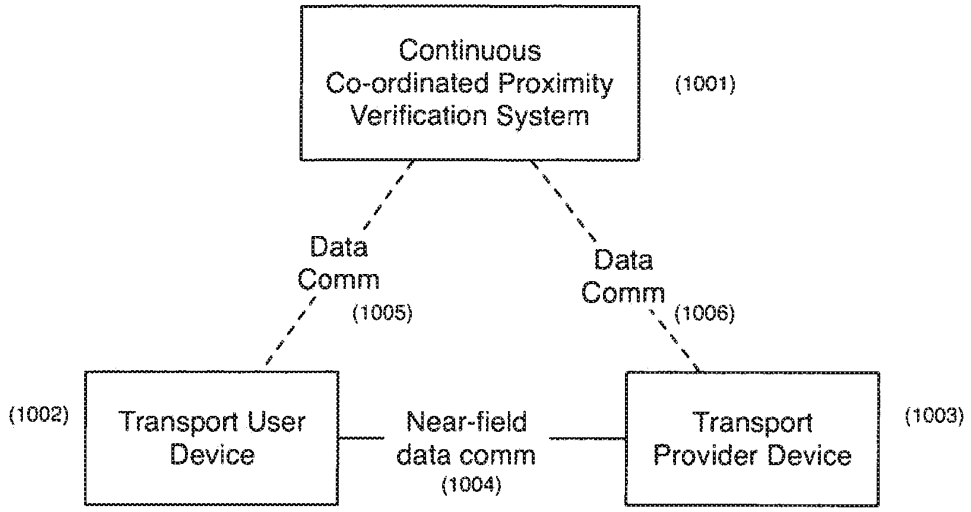


Figure 10b. Continuous Co-ordinated Proximity by using independent verification of location method

Figure 11a. Elements and data communications links in Continuous Co-ordinated Proximity by verification of near-field communications link method



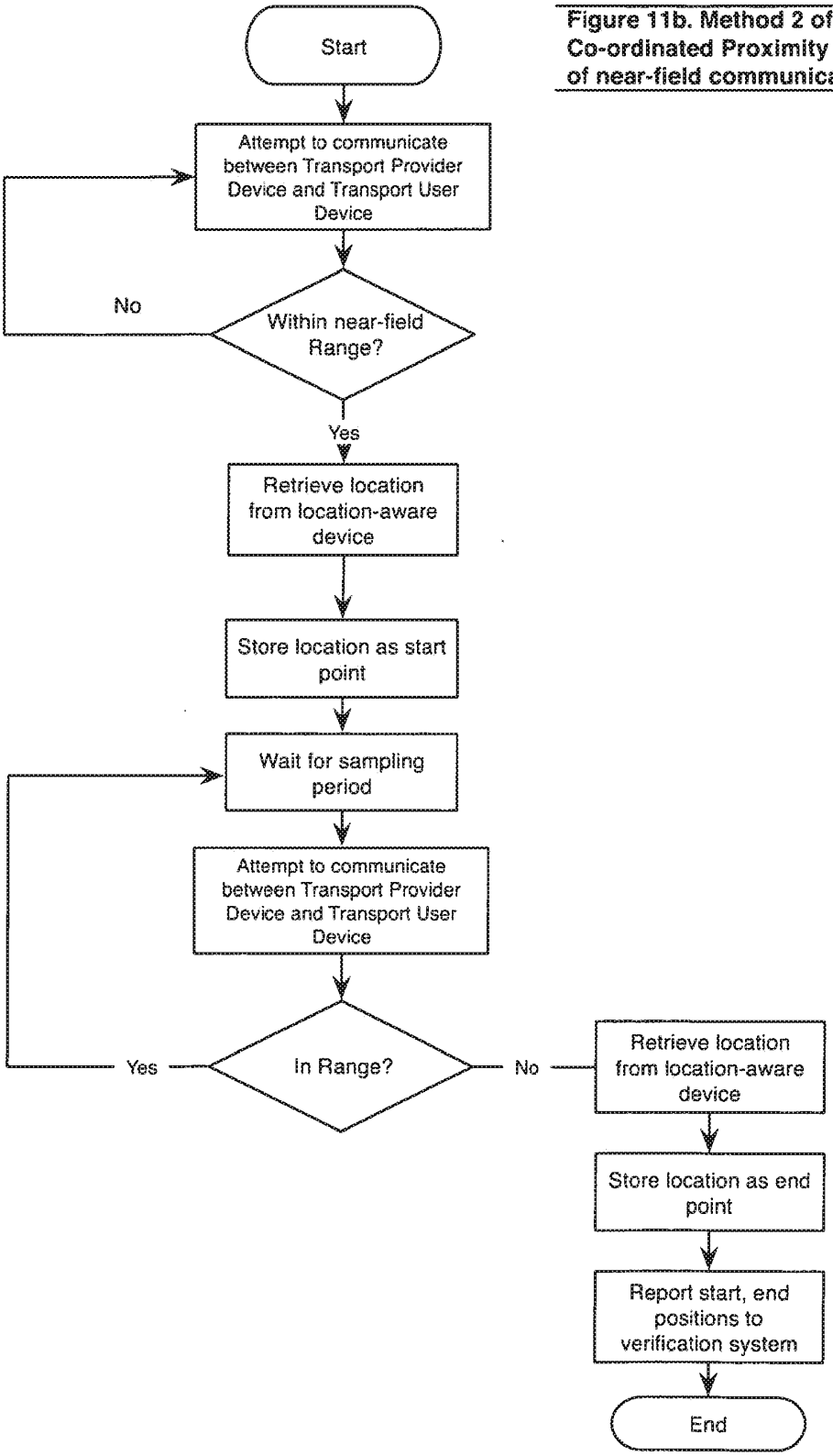


Figure 11b. Method 2 of Continuous Co-ordinated Proximity via verification of near-field communications link

Fig 12a. Access Control System

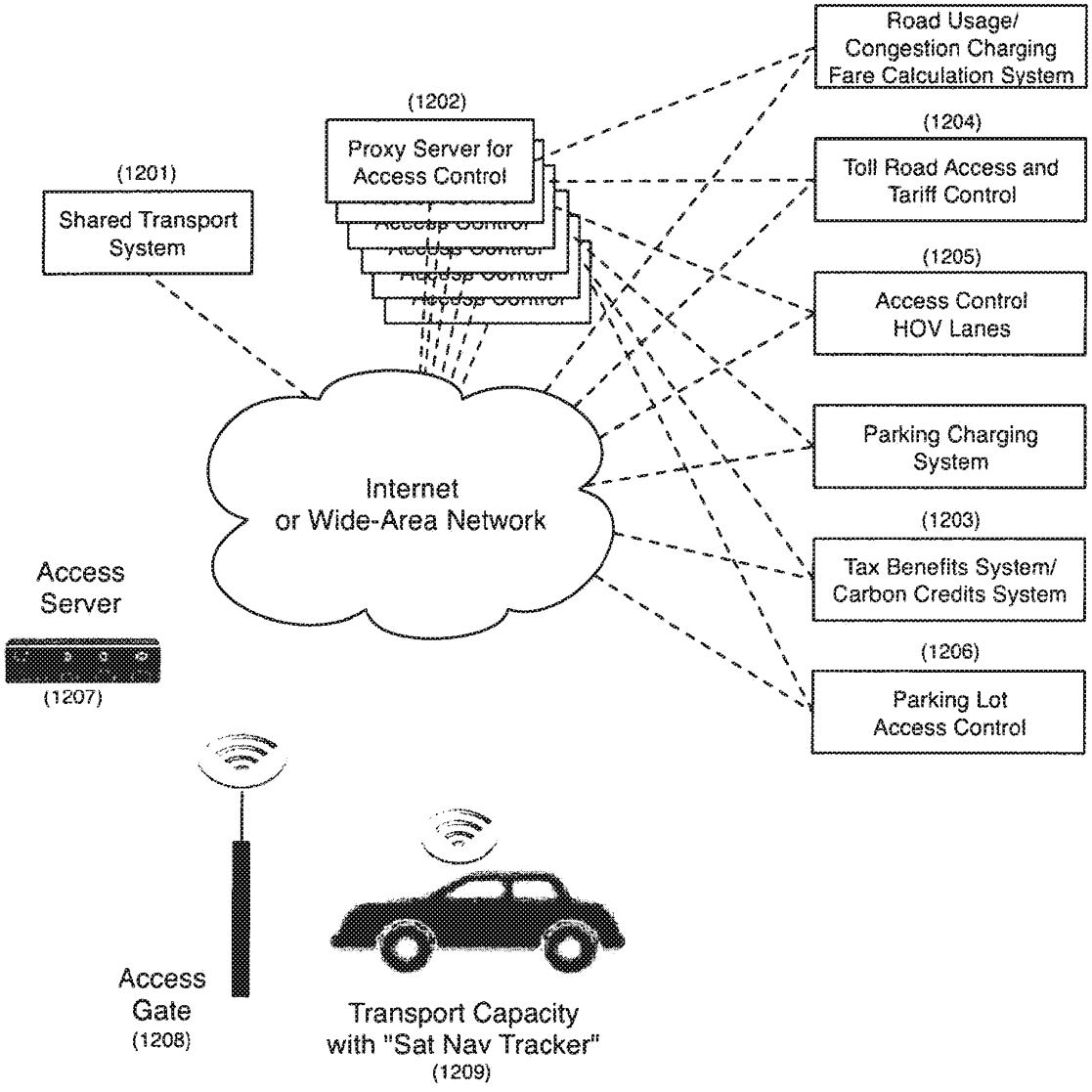


Fig 12b. Access Control System, Server Push Method, Server-side Logic

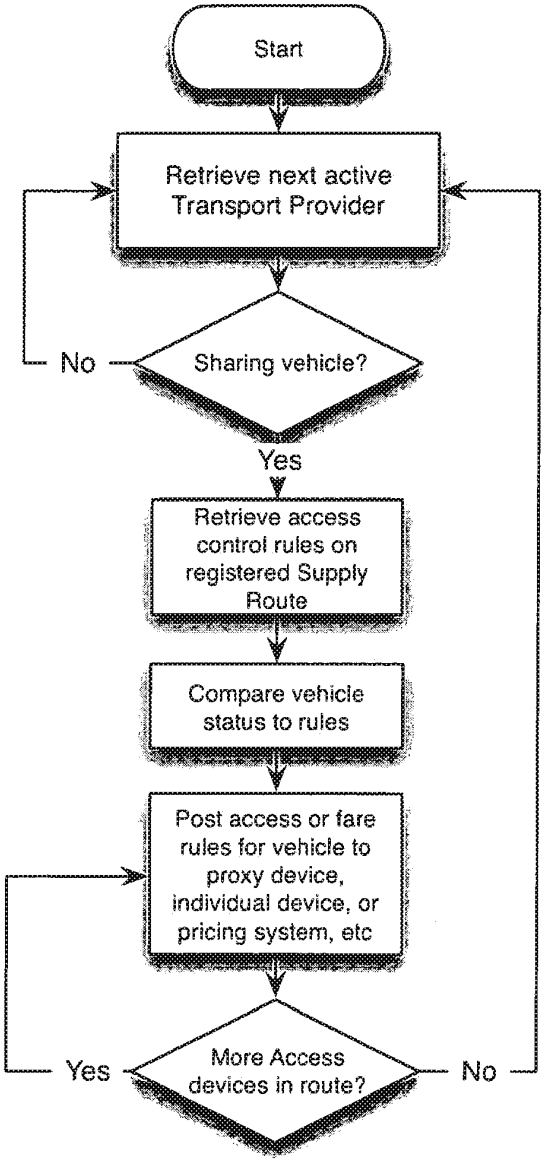


Fig 12c. Access Control System, Server Push Method, Client-side Logic

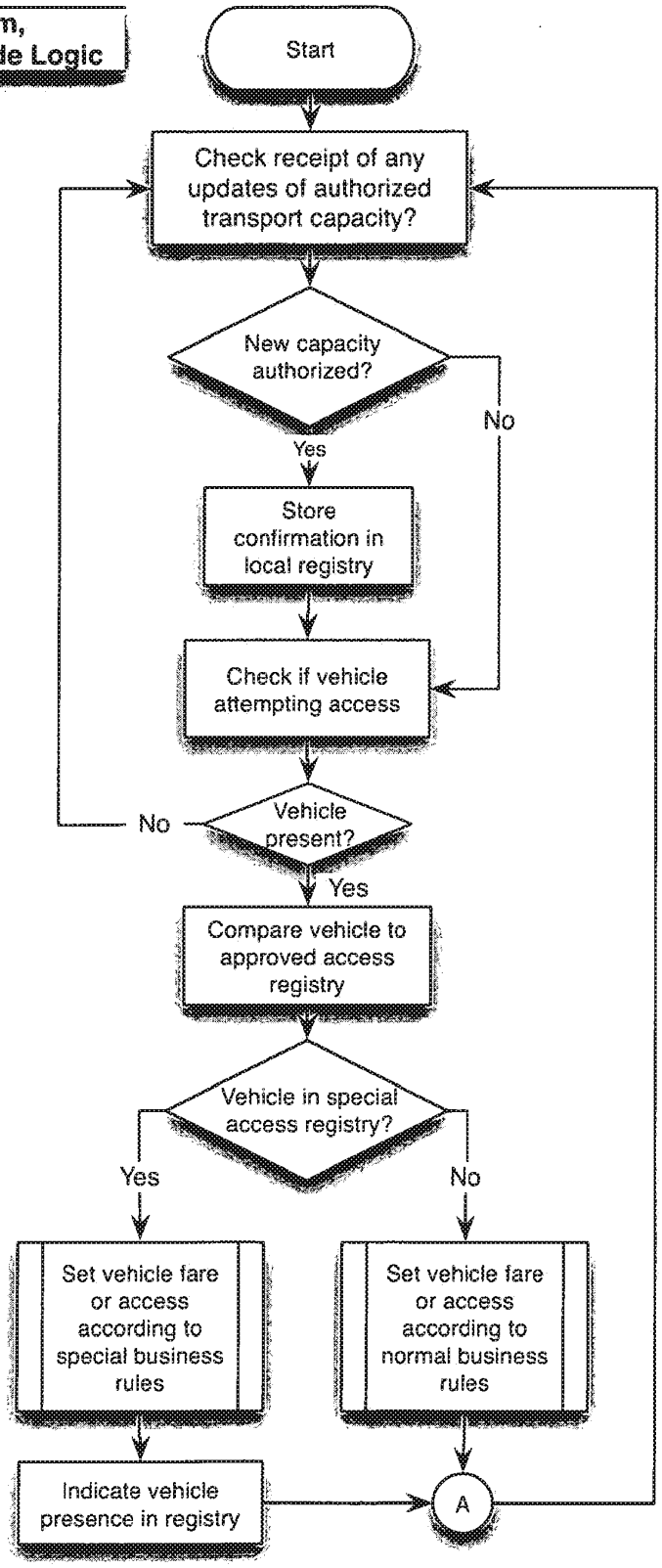


Fig 12d. Access Control System, Client Pull Method, Central Server-Side Logic

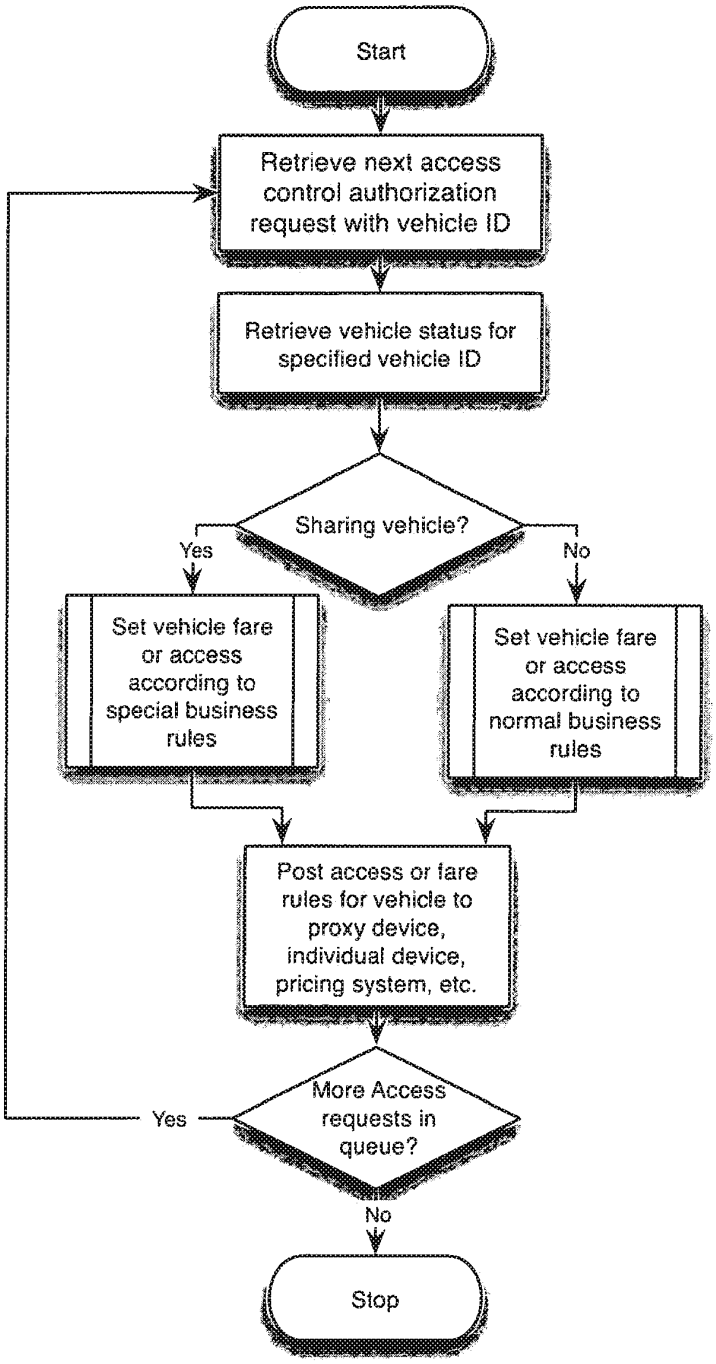


Fig 12e. Access Control System, Client Pull Method, Client-side Logic

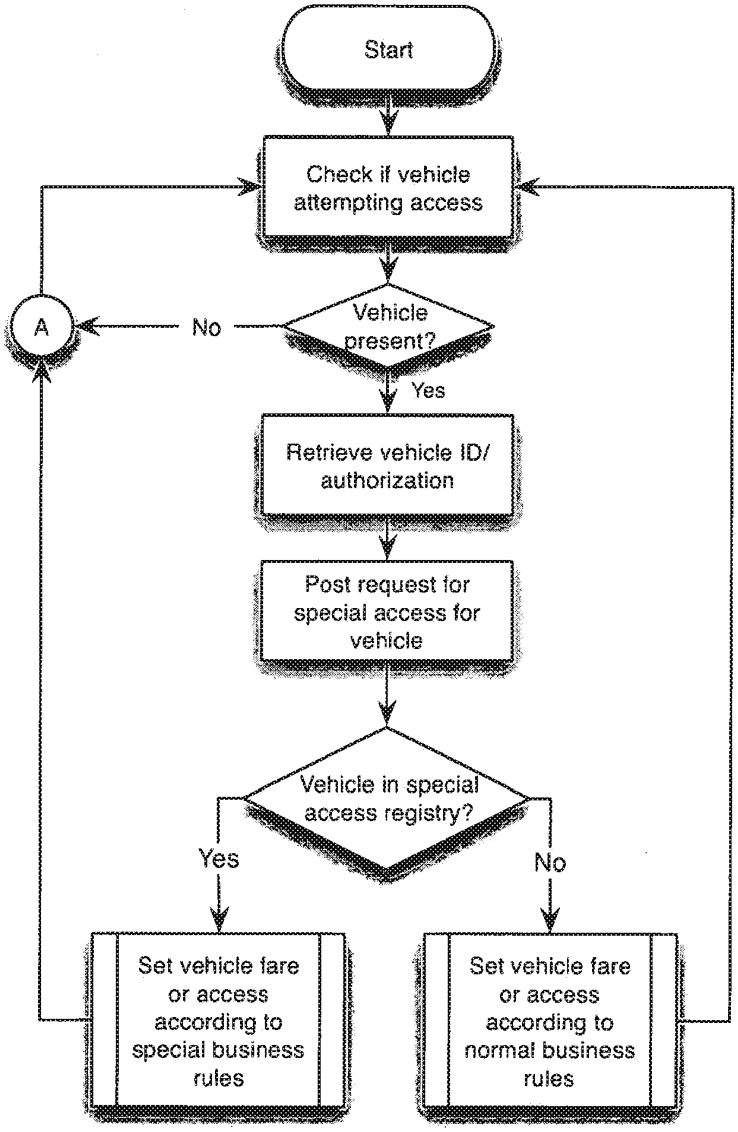


Fig 13. Transport Community Proxy Message Service

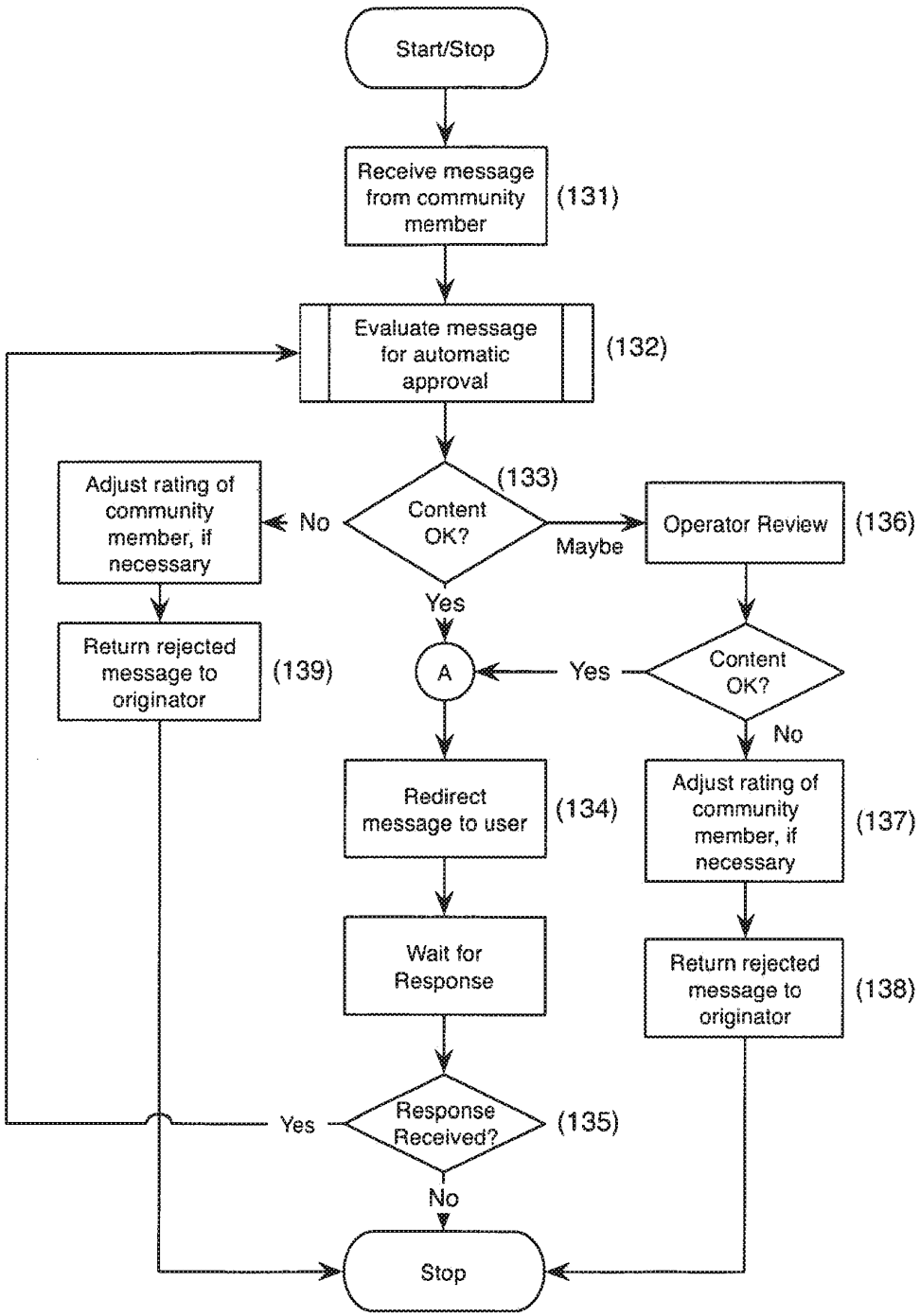


Figure 14a. Full Street, Active Capacity and Node Representation

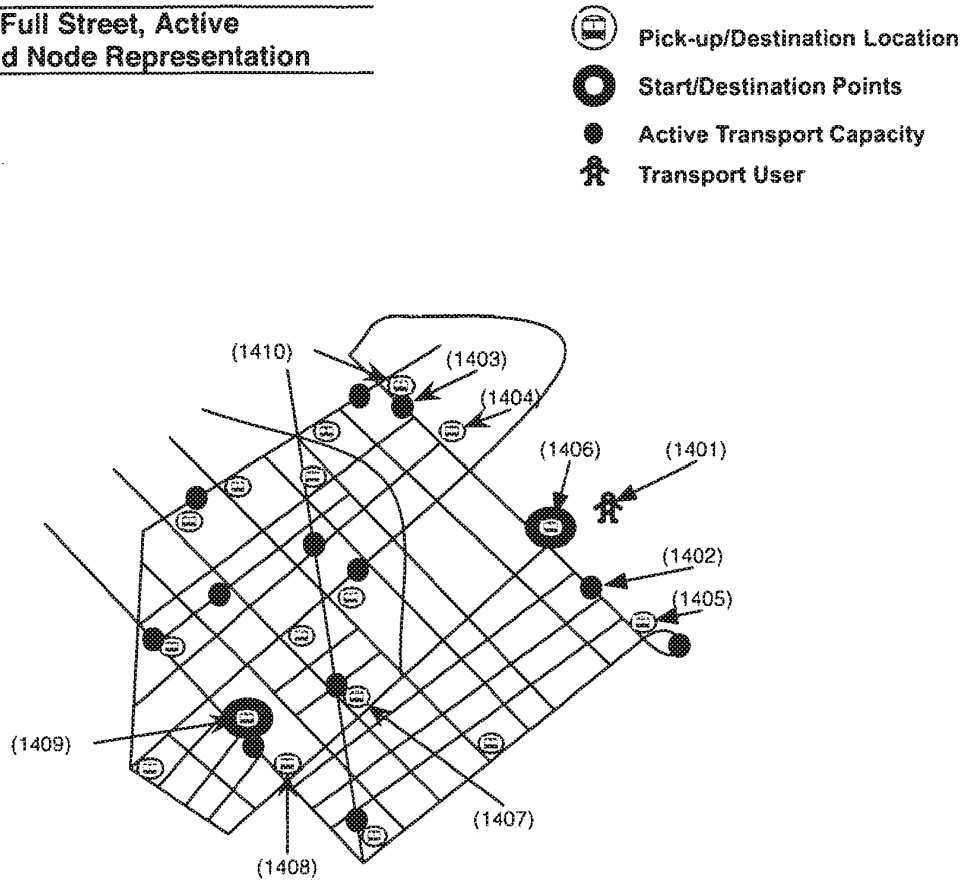


Figure 14b. Network, Active Street and Capacity Representation

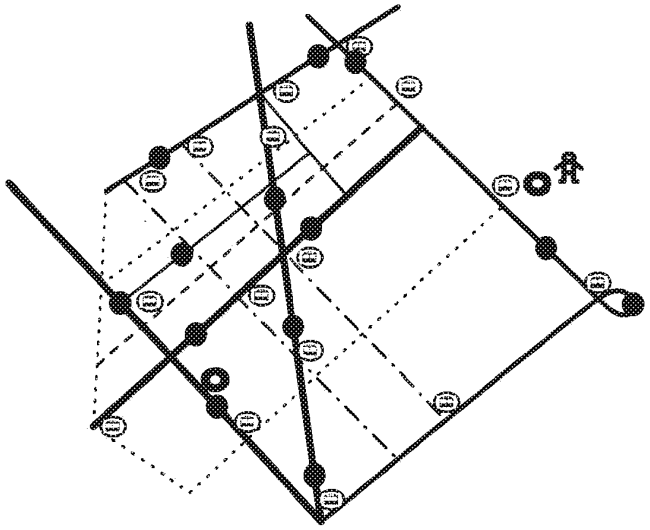


Figure 14c. Network, Active Zero Transfer Street and Capacity Representation from Specific Start Point

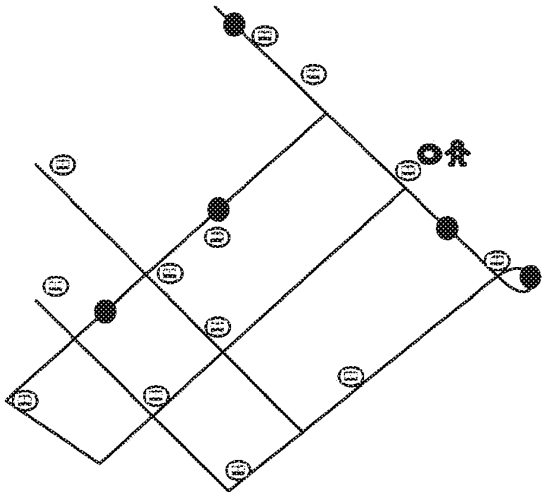


Figure 14d. Stochastic Network, Time of Day Capacity Representation

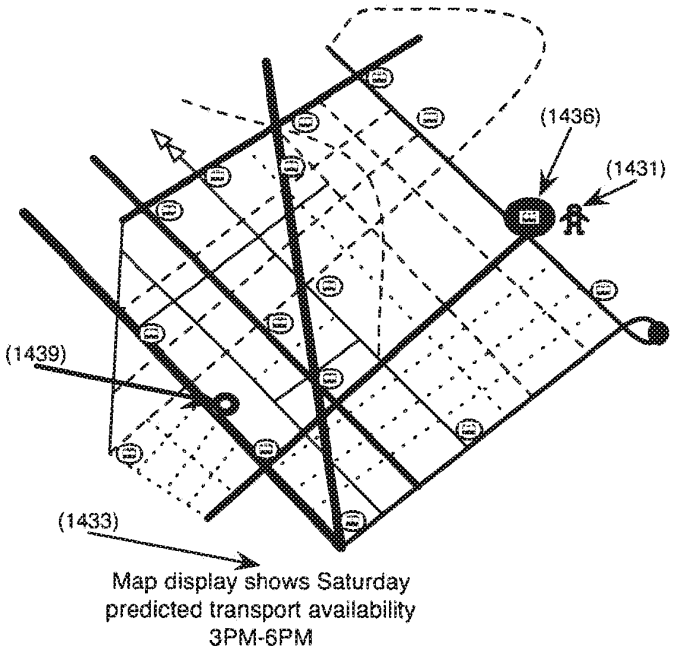


Figure 14e. Stochastic Network, Active Street and Capacity Representation, Specific Departure Point, Outbound

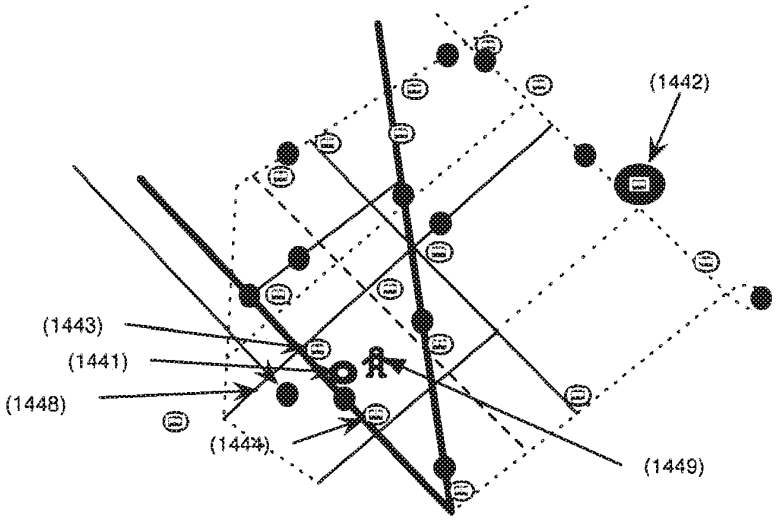


Figure 14f. Network, Wait time and Transfer Representation

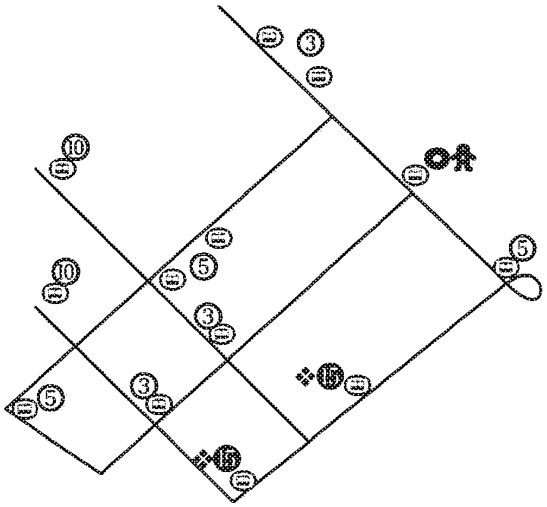


Figure 14g. Stochastic Network, Tabular Representation of Time of Day Capacity

(1471)
(1472)
(1475)

Start Point: 2142 14th Ave;
Destination: 200 Broadway, Troy

Time of Day	Departure Location	Availability
5:00am-6:30am	13th St	15 minutes
	15th St	no service
6:30am-7:30am	13th St	5 minutes
	15th St	10 minutes
7:30am-8:30am	13th St	5 minutes
	15th St	5 minutes
(1473) 8:30am-10:00am (1474)	13th St	5 minutes
	15th St	5 minutes
10:00am-4:30pm	13th St	10 minutes
	15th St	15 minutes
4:30pm-7:30pm	13th St	5 minutes
	15th St	5 minutes
7:30pm-10:30pm	13th St	5 minutes
	15th St	15 minutes
10:30pm-2:30am	13th St	15 minutes
	15th St	1 hour
2:30am-5:00am	13th St	no service
	15th St	no service

Figure 14h. Combination Real-time & Stochastic Network Departure Board for Shared Transport Network

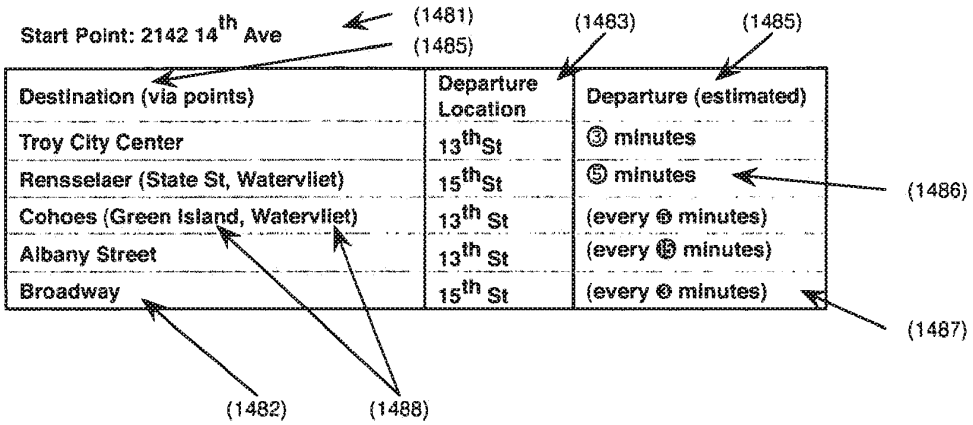


Figure 14i. Real-time Journey Planner for Shared Transport Network, Fixed Start & Destination Points, Tabular Representation

Start Point: Essex Fells, NJ (1491)
Destination: 222 E 32nd St, New York (1492)
Departure Time: Now (9:22am), Distance: 22 miles

(1494) (1495) (1496) (1497)

Options (1493)	Departure / Arrival	Departure (estimated)	Cost	Arrival Time
Option 1: Shared Transport	Roseland Ave / 3rd Av & 32nd	③ minutes	$7.80	10:15 am
Option 2: Shared Transport + Path + Subway (1498)	Bloomfield Ave / Park Ave & 34th	(every ⑮ minutes)	$6.50	10:38 am
Option 3: Bus + Shared Transport	Bloomfield Ave / 2nd Ave & 32nd	(every ① hour, next 9:35 am)	$6.20	10:45 am

PTO/AIA/14 (02-18)
Approved for use through 11/30/2020. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	00199-0001-15000
	Application Number	
Title of Invention	SYSTEMS AND METHODS FOR UTILIZING A SHARED TRANSPORT NETWORK FOR DELIVERY OF GOODS	

The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76.
This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.

Secrecy Order 37 CFR 5.2:

☐ Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)

Inventor Information:

Inventor 1 — Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Sean		O'SULLIVAN	

Residence Information (Select One) ● US Residency Non US Residency Active US Military Service

City	Princeton	State/Province	NJ	Country of Residence	US

Mailing Address of Inventor:

Address 1	174 Nassau Street
Address 2	#3000

City	Princeton	State/Province	NJ
Postal Code	08542	Country	US

All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the **Add** button. Add

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below.
For further information see 37 CFR 1.33(a).

☐ **An Address is being provided for the correspondence Information of this application.**

Customer Number	108449		
Email Address	docketing@bomcip.com	Add Email	Remove Email

Application Information:

Title of the Invention	SYSTEMS AND METHODS FOR UTILIZING A SHARED TRANSPORT NETWORK FOR DELIVERY OF GOODS		
Attorney Docket Number	00199-0001-15000	Small Entity Status Claimed	☒
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	32	Suggested Figure for Publication (if any)	

PTO/AIA/14 (02-18)
Approved for use through 11/30/2020. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	00199-0001-15000
	Application Number	
Title of Invention	SYSTEMS AND METHODS FOR UTILIZING A SHARED TRANSPORT NETWORK FOR DELIVERY OF GOODS	

Filing By Reference:

Only complete this section when filing an application by reference under 35 U.S.C. 111(c) and 37 CFR 1.57(a). Do not complete this section if application papers including a specification and any drawings are being filed. Any domestic benefit or foreign priority information must be provided in the appropriate section(s) below (i.e., "Domestic Benefit/National Stage Information" and "Foreign Priority Information").

For the purposes of a filing date under 37 CFR 1.53(b), the description and any drawings of the present application are replaced by this reference to the previously filed application, subject to conditions and requirements of 37 CFR 1.57(a).

Application number of the previously filed application	Filing date (YYYY-MM-DD)	Intellectual Property Authority or Country

Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)

☐ **Request Not to Publish.** I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application **has not and will not** be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32).
Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer Number will be used for the Representative Information during processing.

Please Select One:	● Customer Number	US Patent Practitioner	○ Limited Recognition (37 CFR 11.9)
Customer Number	108449		

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, 365(c), or 386(c) or indicate National Stage entry from a PCT application. Providing benefit claim information in the Application Data Sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.
When referring to the current application, please leave the "Application Number" field blank.

Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
	Continuation of	16564819	2019-09-09

PTO/AIA/14 (02-18)
Approved for use through 11/30/2020. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	00199-0001-15000
	Application Number	
Title of Invention	SYSTEMS AND METHODS FOR UTILIZING A SHARED TRANSPORT NETWORK FOR DELIVERY OF GOODS	

Prior Application Status: Patented — Remove

Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
16564819	Continuation of	16197953	2018-11-21	10453339	2019-10-22

Prior Application Status: Pending — Remove

Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
16197953	Continuation of	15998864	2018-08-17

Prior Application Status: Patented — Remove

Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
15998864	Continuation of	12924487	2010-09-28	10083608	2018-09-25

Prior Application Status: Patented — Remove

Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
12924487	Division of	12069656	2008-02-12	7840427	2010-11-23

Prior Application Status: Expired — Remove

Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
12069656	Claims benefit of provisional	60900808	2007-02-12

Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the **Add** button. — Add

Foreign Priority Information:

This section allows for the applicant to claim priority to a foreign application. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55. When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX)[i] the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(i)(1) and (2). Under the PDX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).

Remove

Application Number	Country[i]	Filing Date (YYYY-MM-DD)	Access Code[i] (if applicable)

Additional Foreign Priority Data may be generated within this form by selecting the **Add** button. — Add

PTO/AIA/14 (02-18)
Approved for use through 11/30/2020. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	00199-0001-15000
	Application Number	
Title of Invention	SYSTEMS AND METHODS FOR UTILIZING A SHARED TRANSPORT NETWORK FOR DELIVERY OF GOODS	

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

☐ This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.
NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	00199-0001-15000
	Application Number	
Title of Invention	SYSTEMS AND METHODS FOR UTILIZING A SHARED TRANSPORT NETWORK FOR DELIVERY OF GOODS	

Authorization or Opt-Out of Authorization to Permit Access:

When this Application Data Sheet is properly signed and filed with the application, applicant has provided written authority to permit a participating foreign intellectual property (IP) office access to the instant application-as-filed (see paragraph A in subsection 1 below) and the European Patent Office (EPO) access to any search results from the instant application (see paragraph B in subsection 1 below).

Should applicant choose not to provide an authorization identified in subsection 1 below, applicant **must opt-out** of the authorization by checking the corresponding box A or B or both in subsection 2 below.

NOTE: This section of the Application Data Sheet is **ONLY** reviewed and processed with the **INITIAL** filing of an application. After the initial filing of an application, an Application Data Sheet cannot be used to provide or rescind authorization for access by a foreign IP office(s). Instead, Form PTO/SB/39 or PTO/SB/69 must be used as appropriate.

1. Authorization to Permit Access by a Foreign Intellectual Property Office(s)

A. Priority Document Exchange (PDX) - Unless box A in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the State Intellectual Property Office of the People's Republic of China (SIPO), the World Intellectual Property Organization (WIPO), and any other foreign intellectual property office participating with the USPTO in a bilateral or multilateral priority document exchange agreement in which a foreign application claiming priority to the instant patent application is filed, access to: (1) the instant patent application-as-filed and its related bibliographic data, (2) any foreign or domestic application to which priority or benefit is claimed by the instant application and its related bibliographic data, and (3) the date of filing of this Authorization. See 37 CFR 1.14(h)(1).

B. Search Results from U.S. Application to EPO - Unless box B in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the EPO access to the bibliographic data and search results from the instant patent application when a European patent application claiming priority to the instant patent application is filed. See 37 CFR 1.14(h)(2).

The applicant is reminded that the EPO's Rule 141(1) EPC (European Patent Convention) requires applicants to submit a copy of search results from the instant application without delay in a European patent application that claims priority to the instant application.

2. Opt-Out of Authorizations to Permit Access by a Foreign Intellectual Property Office(s)

☐ A. Applicant **DOES NOT** authorize the USPTO to permit a participating foreign IP office access to the instant application-as-filed. If this box is checked, the USPTO will not be providing a participating foreign IP office with any documents and information identified in subsection 1A above.

☐ B. Applicant **DOES NOT** authorize the USPTO to transmit to the EPO any search results from the instant patent application. If this box is checked, the USPTO will not be providing the EPO with search results from the instant application.

NOTE: Once the application has published or is otherwise publicly available, the USPTO may provide access to the application in accordance with 37 CFR 1.14.

PTO/AIA/14 (02-18)
Approved for use through 11/30/2020. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	00199-0001-15000
	Application Number	
Title of Invention	SYSTEMS AND METHODS FOR UTILIZING A SHARED TRANSPORT NETWORK FOR DELIVERY OF GOODS	

Applicant Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

Applicant 1 — Remove

If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section.

Clear

● Assignee	Legal Representative under 35 U.S.C. 117	Joint Inventor
Person to whom the inventor is obligated to assign.	Person who shows sufficient proprietary interest	

If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:

Name of the Deceased or Legally Incapacitated Inventor:

If the Applicant is an Organization check here. ☒

Organization Name	CARMA TECHNOLOGY LIMITED		
Mailing Address Information For Applicant:			
Address 1	Republic of Work		
Address 2	12 South Mall		
City	Cork City	**State/Province**	
Country	IE	Postal Code	T12 RD43
Phone Number		Fax Number	
Email Address			

Additional Applicant Data may be generated within this form by selecting the Add button. Add

Assignee Information including Non-Applicant Assignee Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

PTO/AIA/14 (02-18)
Approved for use through 11/30/2020. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	00199-0001-15000
	Application Number	
Title of Invention	SYSTEMS AND METHODS FOR UTILIZING A SHARED TRANSPORT NETWORK FOR DELIVERY OF GOODS	

Assignee 1

Complete this section if assignee information, including non-applicant assignee information, is desired to be included on the patent application publication. An assignee-applicant identified in the "Applicant Information" section will appear on the patent application publication as an applicant. For an assignee-applicant, complete this section only if identification as an assignee is also desired on the patent application publication.

Remove

If the Assignee or Non-Applicant Assignee is an Organization check here. ☐

Prefix	**Given Name**	Middle Name	**Family Name**	Suffix

Mailing Address Information For Assignee including Non-Applicant Assignee:

Address 1			
Address 2			
City		**State/Province**	
Country i		Postal Code	
Phone Number		Fax Number	
Email Address			

Additional Assignee or Non-Applicant Assignee Data may be generated within this form by selecting the Add button. Add

Signature:

Remove

NOTE: This Application Data Sheet must be signed in accordance with 37 CFR 1.33(b). **However, if this Application Data Sheet is submitted with the INITIAL filing of the application and either box A or B is not checked in subsection 2 of the "Authorization or Opt-Out of Authorization to Permit Access" section, then this form must also be signed in accordance with 37 CFR 1.14(c).**

This Application Data Sheet **must** be signed by a patent practitioner if one or more of the applicants is a **juristic entity** (e.g., corporation or association). If the applicant is two or more joint inventors, this form must be signed by a patent practitioner, **all** joint inventors who are the applicant, or one or more joint inventor-applicants who have been given power of attorney (e.g., see USPTO Form PTO/AIA/81) on behalf of **all** joint inventor-applicants.

See 37 CFR 1.4(d) for the manner of making signatures and certifications.

Signature	/Sangwoo Ahn/			Date (YYYY-MM-DD)	2019-10-31
First Name	Sangwoo	Last Name	Ahn	Registration Number	76905

Additional Signature may be generated within this form by selecting the Add button. Add

PTO/AIA/14 (02-18)
Approved for use through 11/30/2020. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	00199-0001-15000
	Application Number	
Title of Invention	SYSTEMS AND METHODS FOR UTILIZING A SHARED TRANSPORT NETWORK FOR DELIVERY OF GOODS	

This collection of information is required by 37 CFR 1.76. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1 The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3 A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent CooperationTreaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

PTO/AIA/01 (06-12)
Approved for use through 11/30/2020. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

Title of Invention	POOLED POINT-TO-POINT RIDE HAILING IN SHARED TRANSPORT SYSTEM

As the below named inventor, I hereby declare that:

This declaration is directed to:

☐ The attached application, or

☒ United States application or PCT international application number 16/197,953 filed on 2018-11-21.

The above-identified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

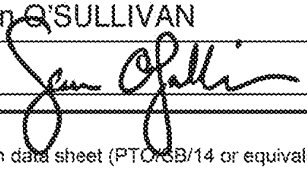
I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

WARNING:

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.

LEGAL NAME OF INVENTOR

Inventor: Sean O'SULLIVAN Date (Optional): _____

Signature: 

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1 minute to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

FIGURE 1. SHARED TRANSPORT NETWORK SYSTEM

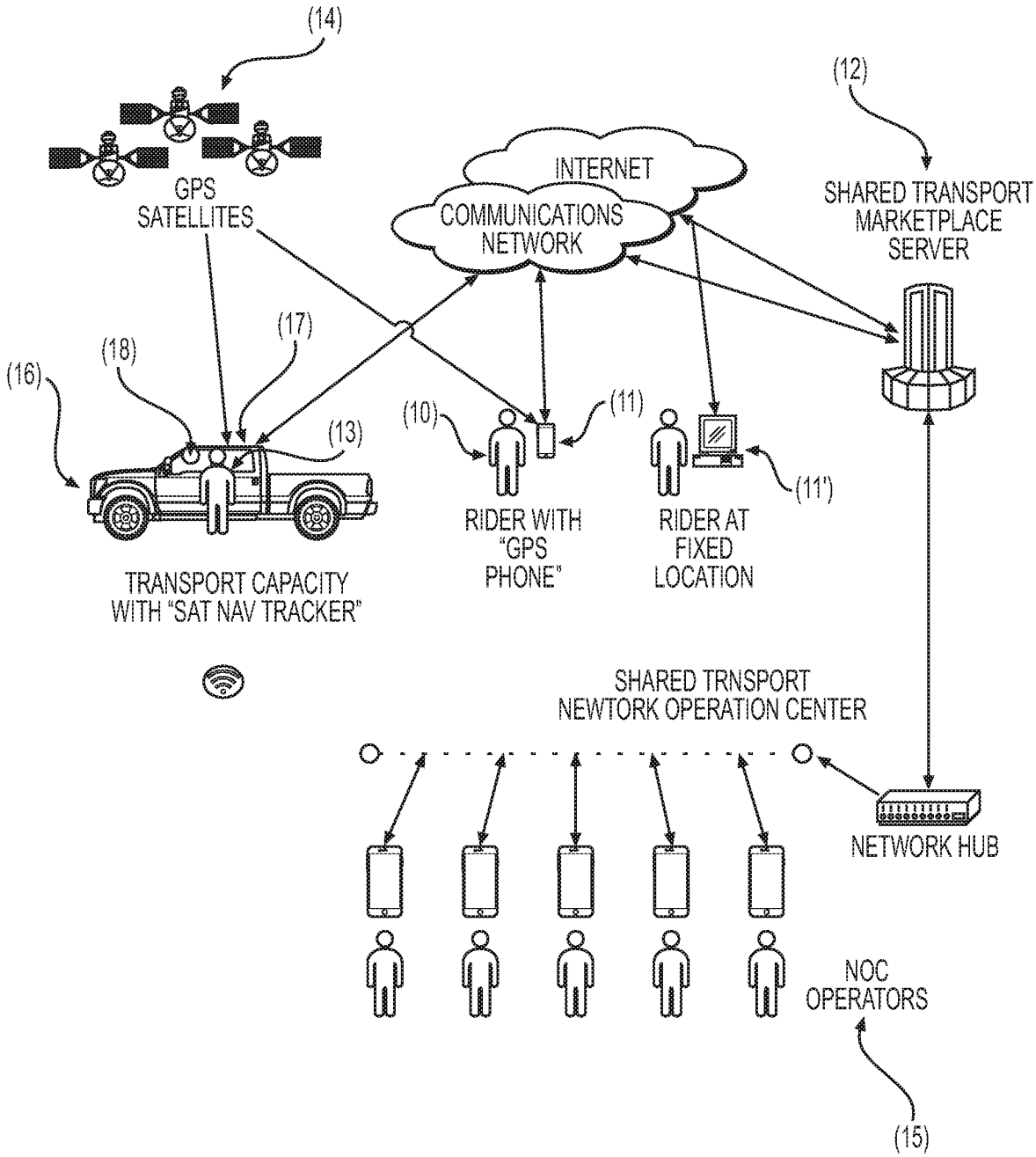


FIGURE 2. TRANSPORT CAPACITY COMPUTING AND COMMUNICATIONS COMPONENTS

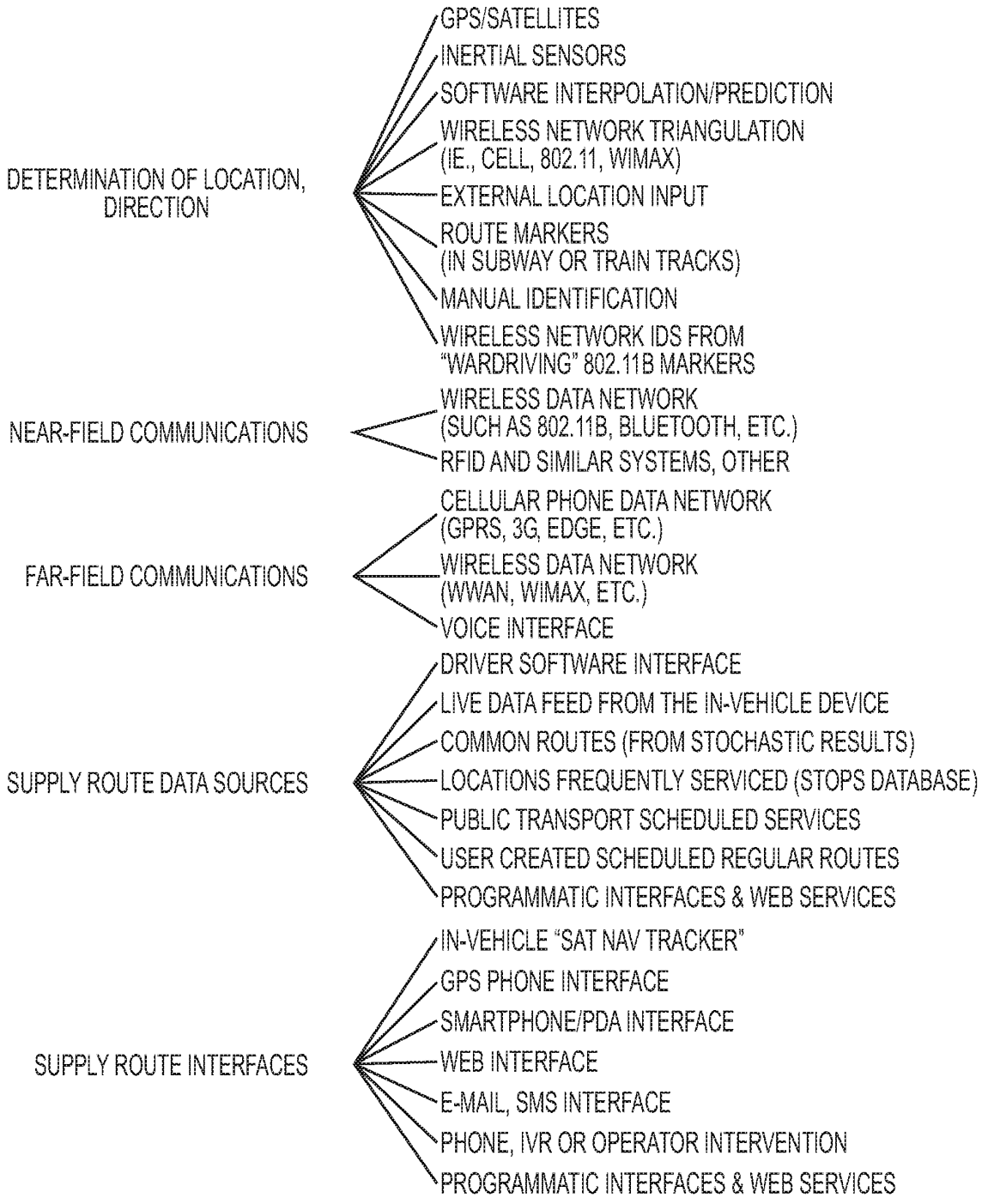


FIGURE 3. RIDER TECHNOLOGY COMPONENTS AND INFORMATION ELEMENTS

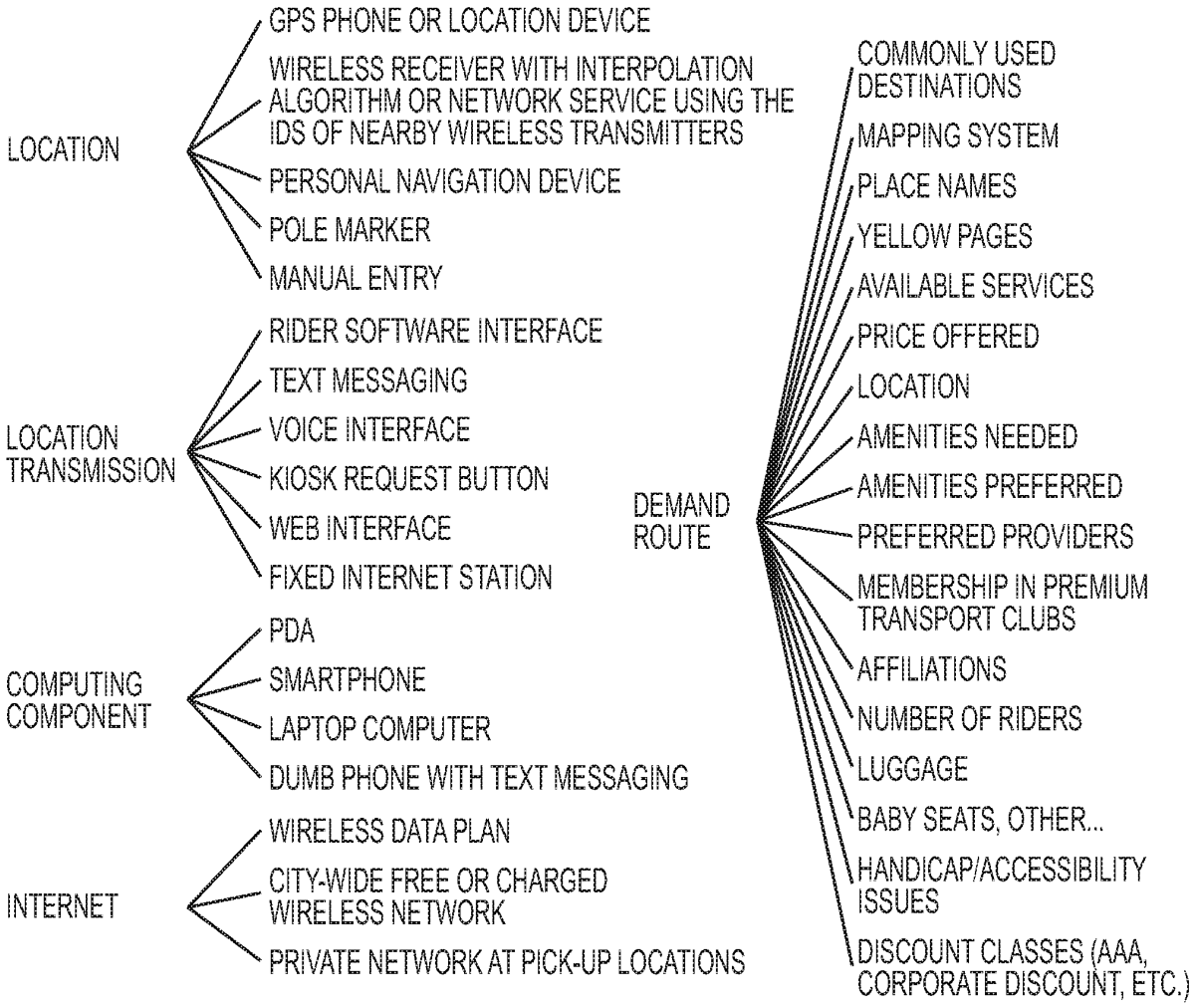
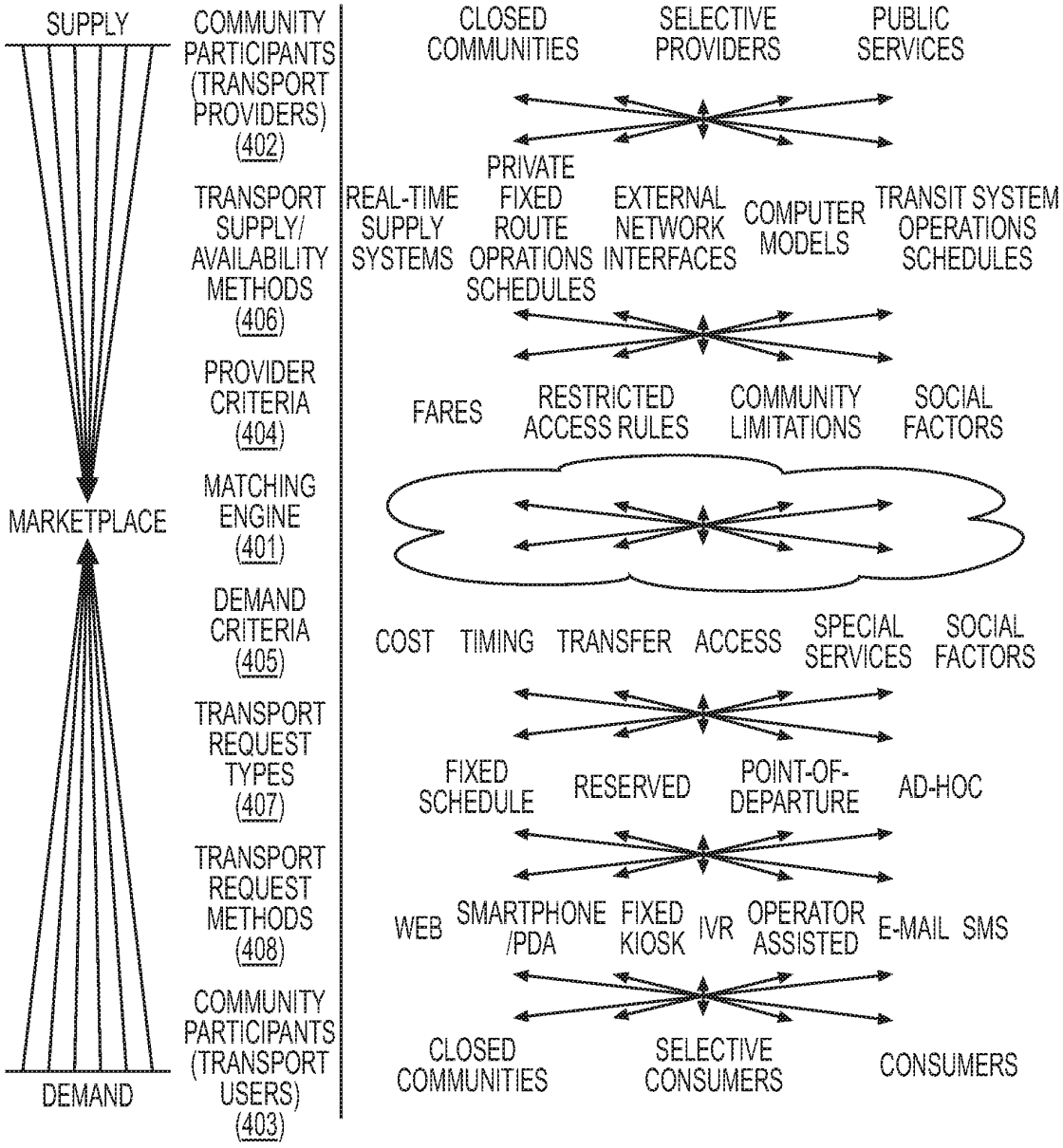


FIGURE 4. SHARED TRANSPORT MARKETPLACE



PUBLIC SHARED TRANSPORT PROVIDERS
BUS NETWORKS
RAIL & SUBWAY NETWORKS
JITNEY/SHARE TAXI PROVIDERS
PRIVATE SCHEDULED SERVICE BUS

FREIGHT TRANSPORT PROVIDERS
PRIVATE PACKAGE TRANSPORT COMPANIES
NATIONAL POSTAL CARRIERS
INDEPENDENT OPERATORS
AD-HOC CONSUMER

CLOSED MEMBER COMMUNITIES
SCHOOL BUS SYSTEMS
EMPLOYEE SHUTTLE BUSES
AFFILIATIONS (SOCIAL CLUBS, SPORTS NETWORKS)

DISPATCHABLE, NON-SHARED TRANSPORT
TAXI COMPANIES
PRIVATE HACKNEY OPERATORS
PREMIUM SERVICE TRANSPORT OPERATOR

FIGURE 5a. RIDER EXPERIENCE FLOWCHART

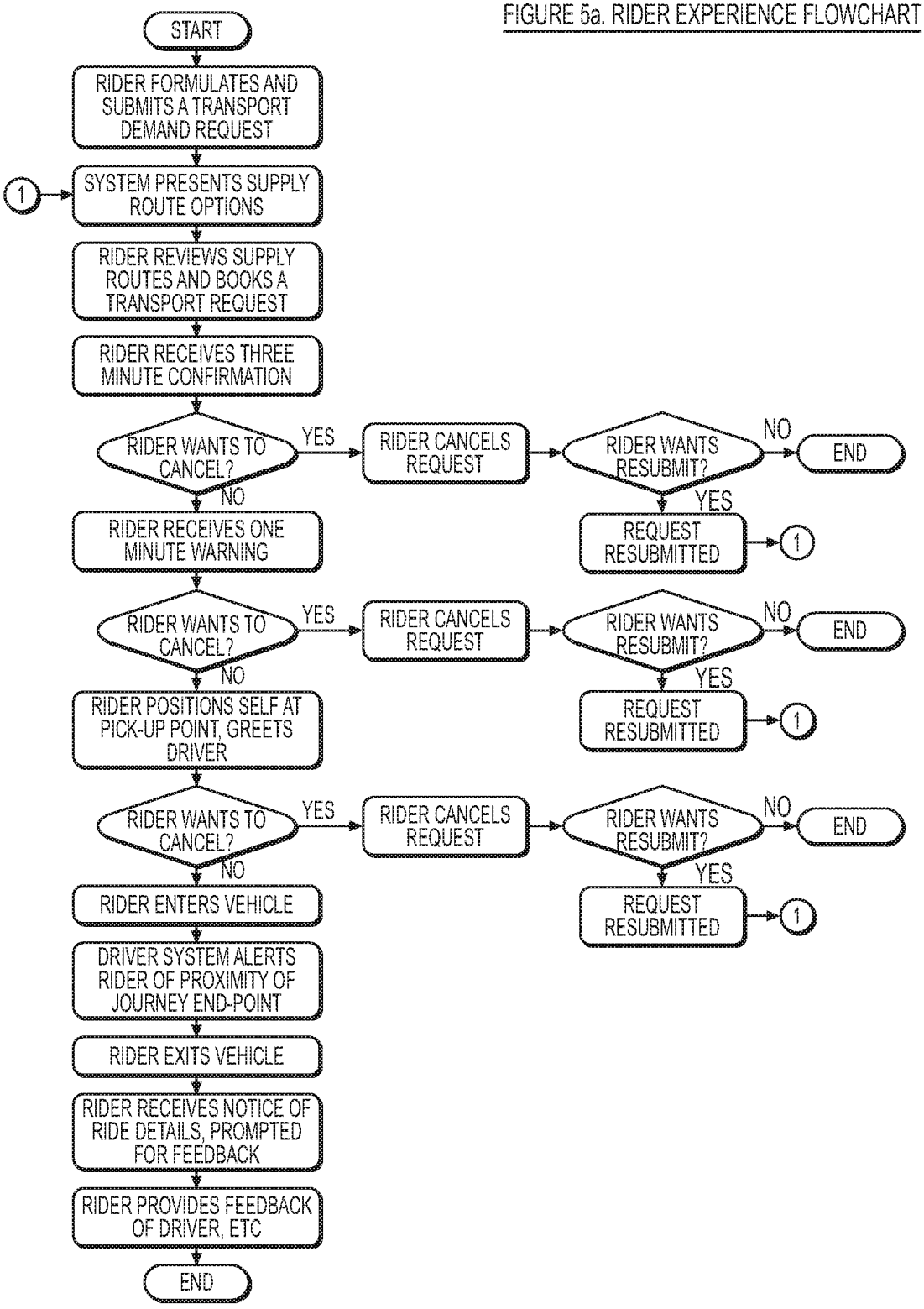


FIGURE 5b. RIDER EXPERIENCE, FUNCTIONAL OPTIONS DATA AND ACTION DETAILS

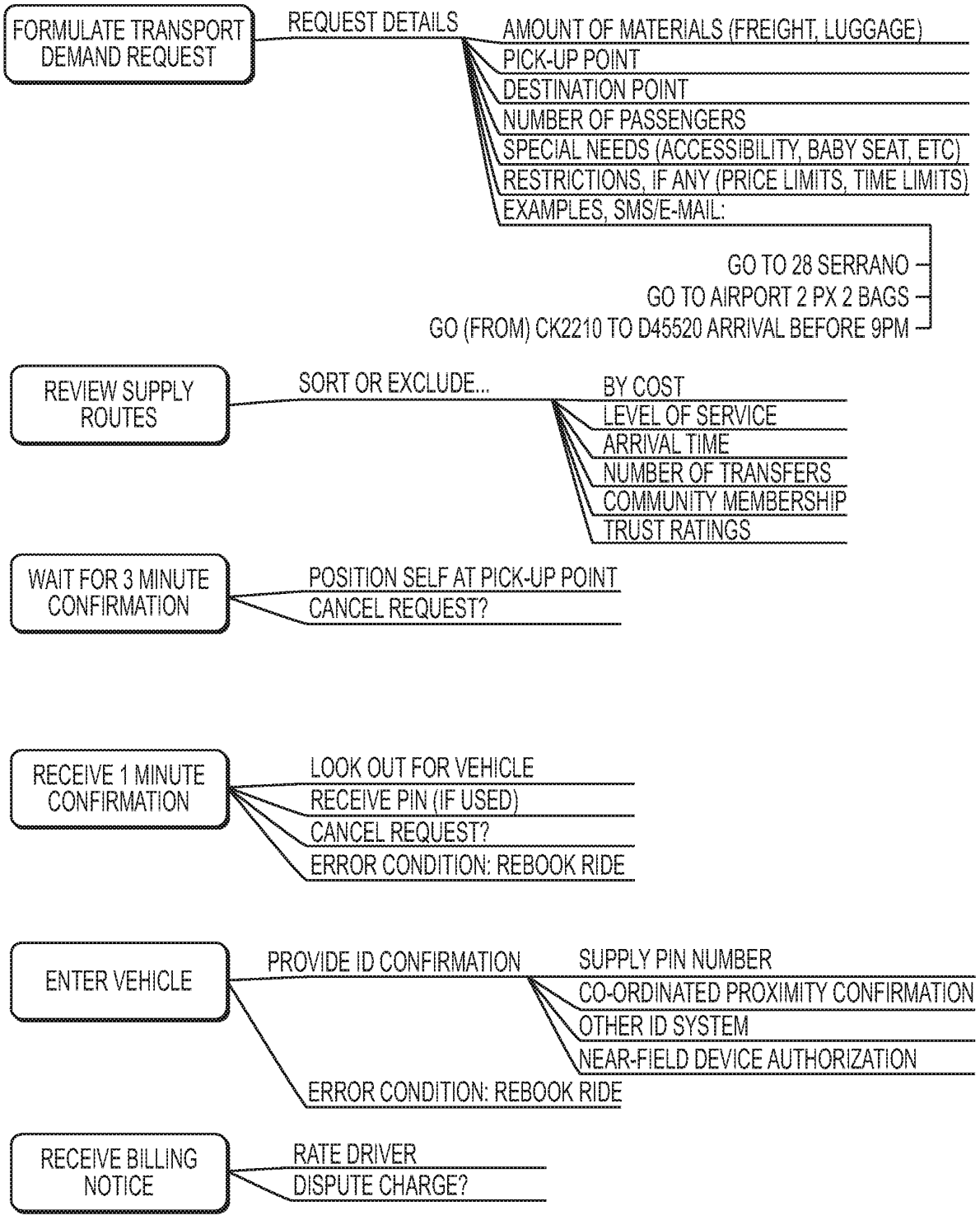


FIGURE 6a. DRIVER EXPERIENCE FLOWCHART

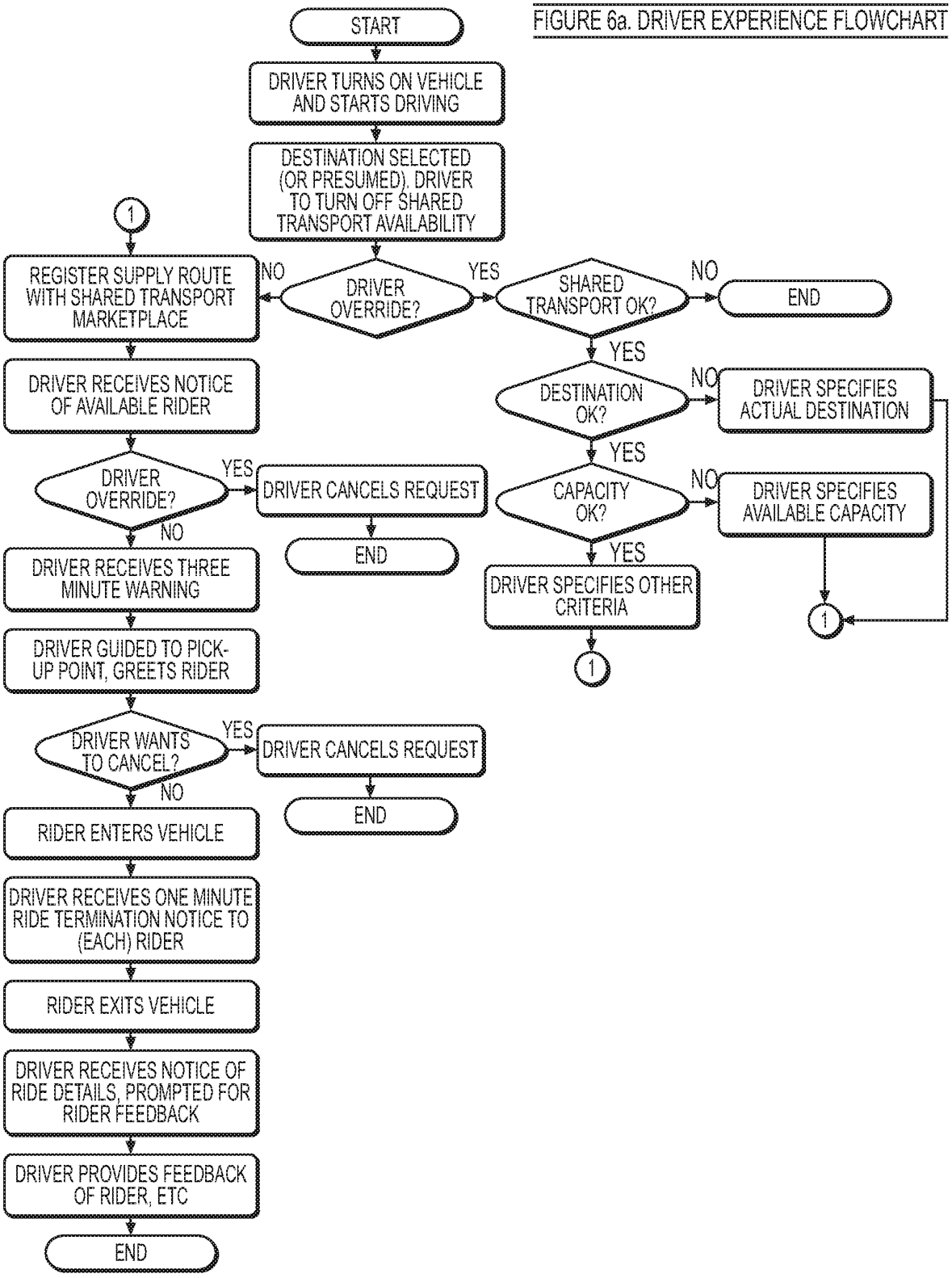
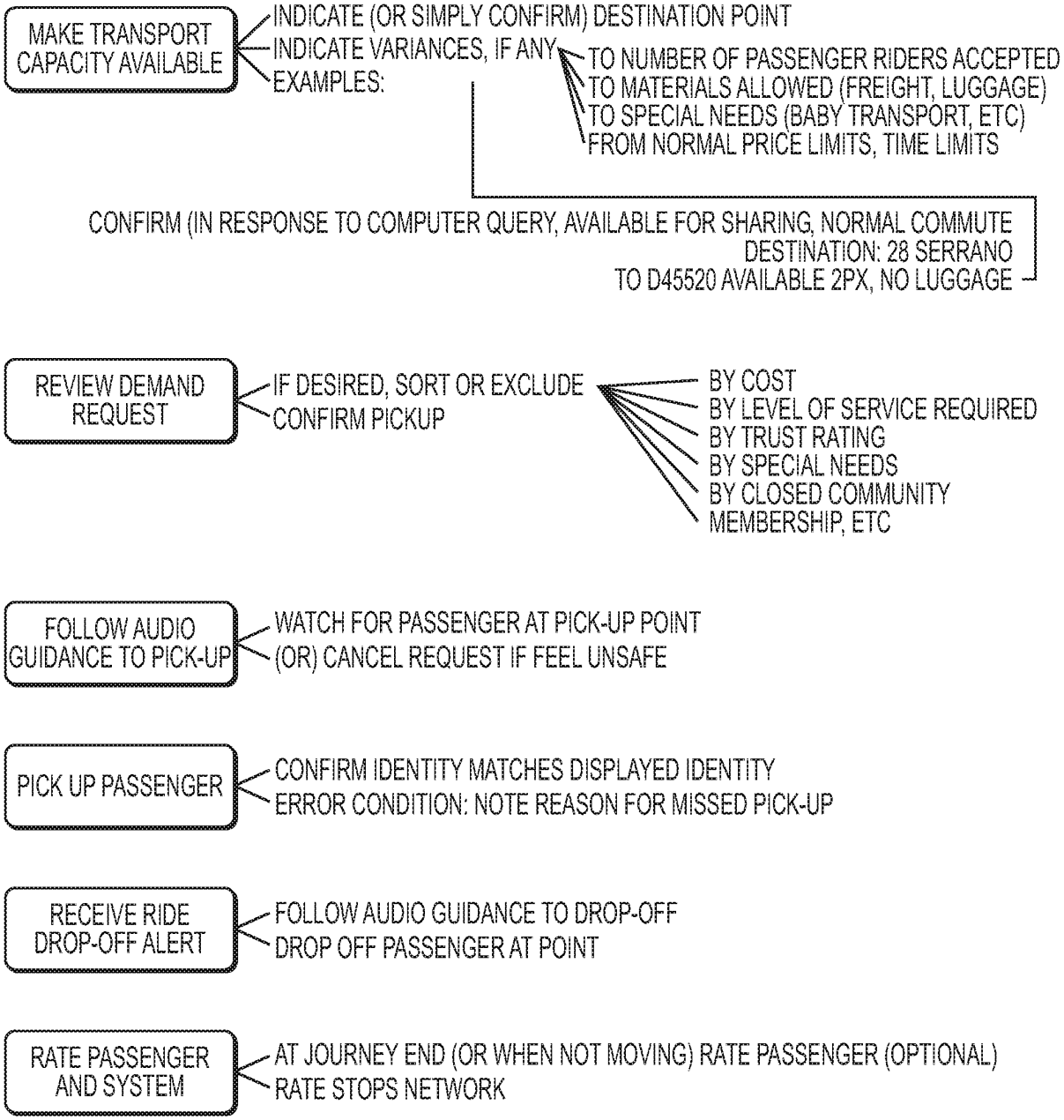
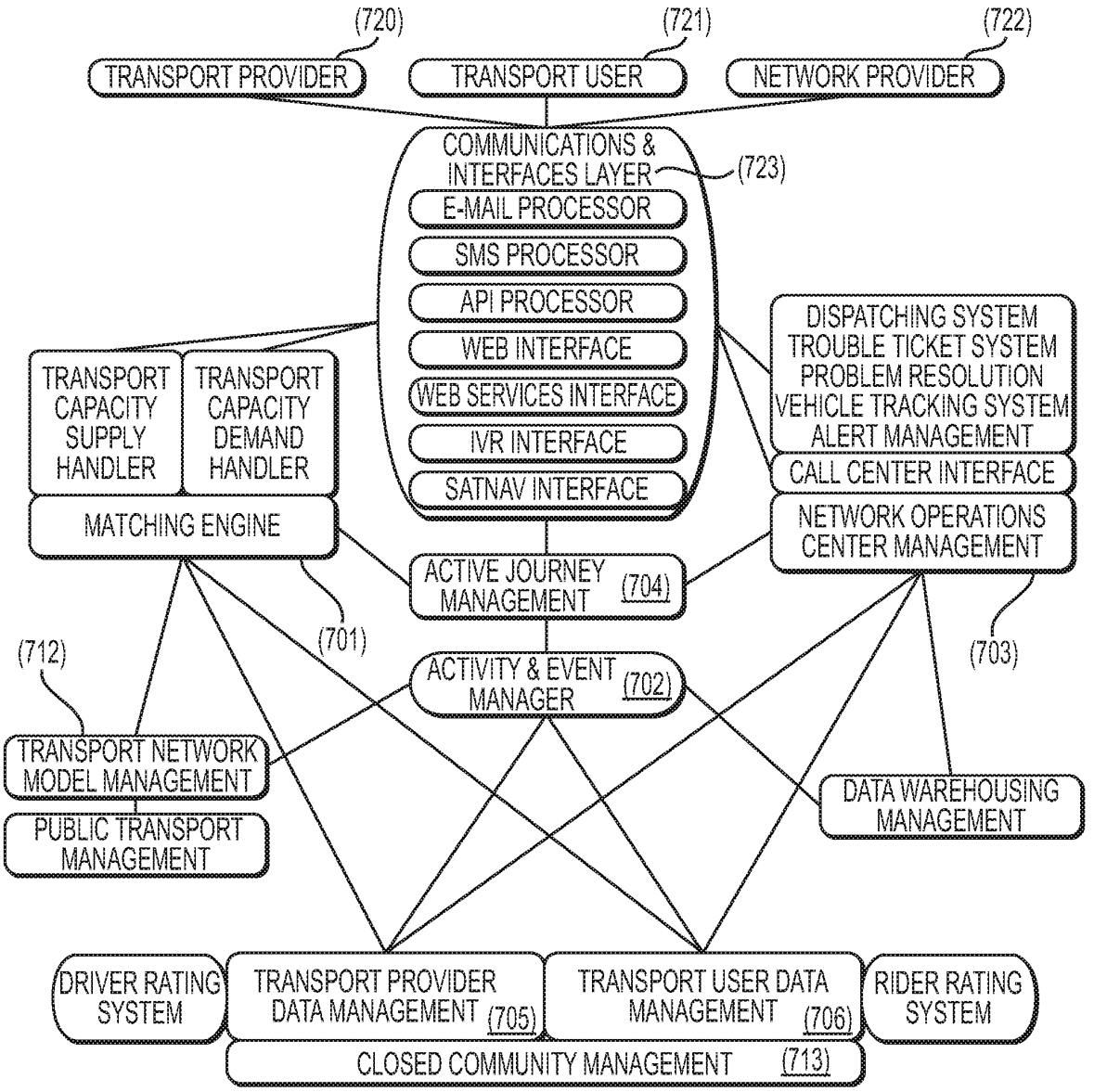


FIGURE 6b. DRIVER EXPERIENCE - FUNCTIONAL OPTIONS





RIDER DB (707)
-PREFERENCES
-PLACENAMES
-TRANSACTIONS
-AUDIT TRAIL
-ACTIVITY
-RATINGS
-ROUTES
-COMMUNITIES

DRIVER DB (708)
-PREFERENCES
-PLACENAMES
-TRANSACTIONS
-AUDIT TRAIL
-ACTIVITY
-RATINGS
-ROUTES
-COMMUNITIES

NETWORK MODEL DB
-STOPS (710)
-TRANSIT TIMES
-DISTANCES
-STOCHASTIC MODEL INFO
-VISUALIZATION INFO

JOURNEYS DB (709)
-JOURNEY ACTIVITY

ACTIVITY & EVENT MANAGER
DRIVER EVENT HANDLING
RIDER EVENT HANDLING
INTERFACE WITH BILLING SYSTEM
EXTERNAL TICKETING INTERFACES

TRANSPORT MANAGEMENT STOCHASTIC ANALYZER (711)
GEOGRAPHY MANAGER
PUBLIC TRANSPORT MODEL
VISUALIZATION MODELS

FIGURE 7. SHARED TRANSPORT MARKETPLACE SERVER & SUBSYSTEMS

FIGURE 8a. DRIVER JOURNEY, ON STREET NETWORK

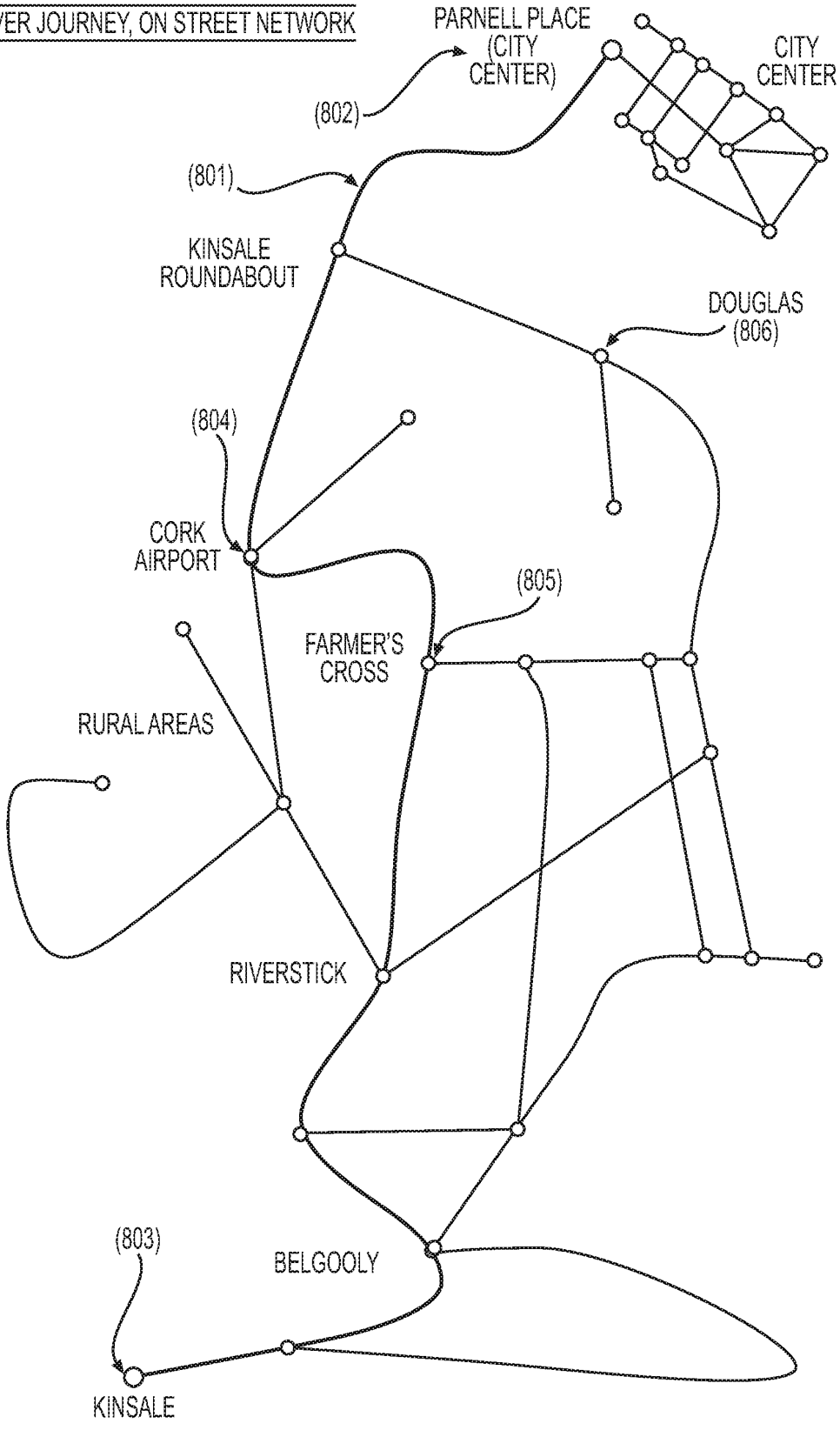


FIGURE 8b. DRIVER JOURNEY LOGICAL CHARACTERIZATION

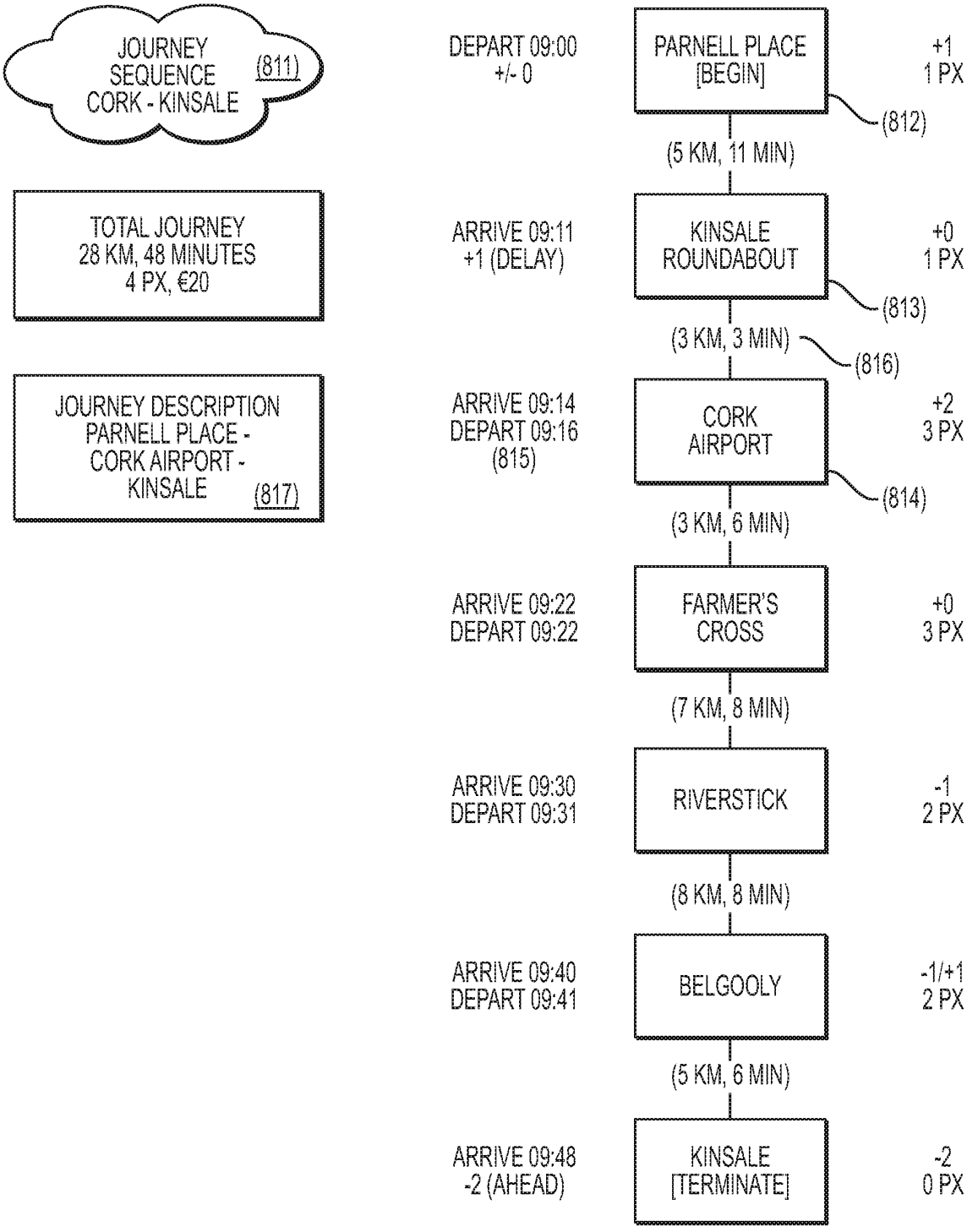


FIGURE 9a. ACTIVE NETWORK, GEOGRAPHICAL REPRESENTATION

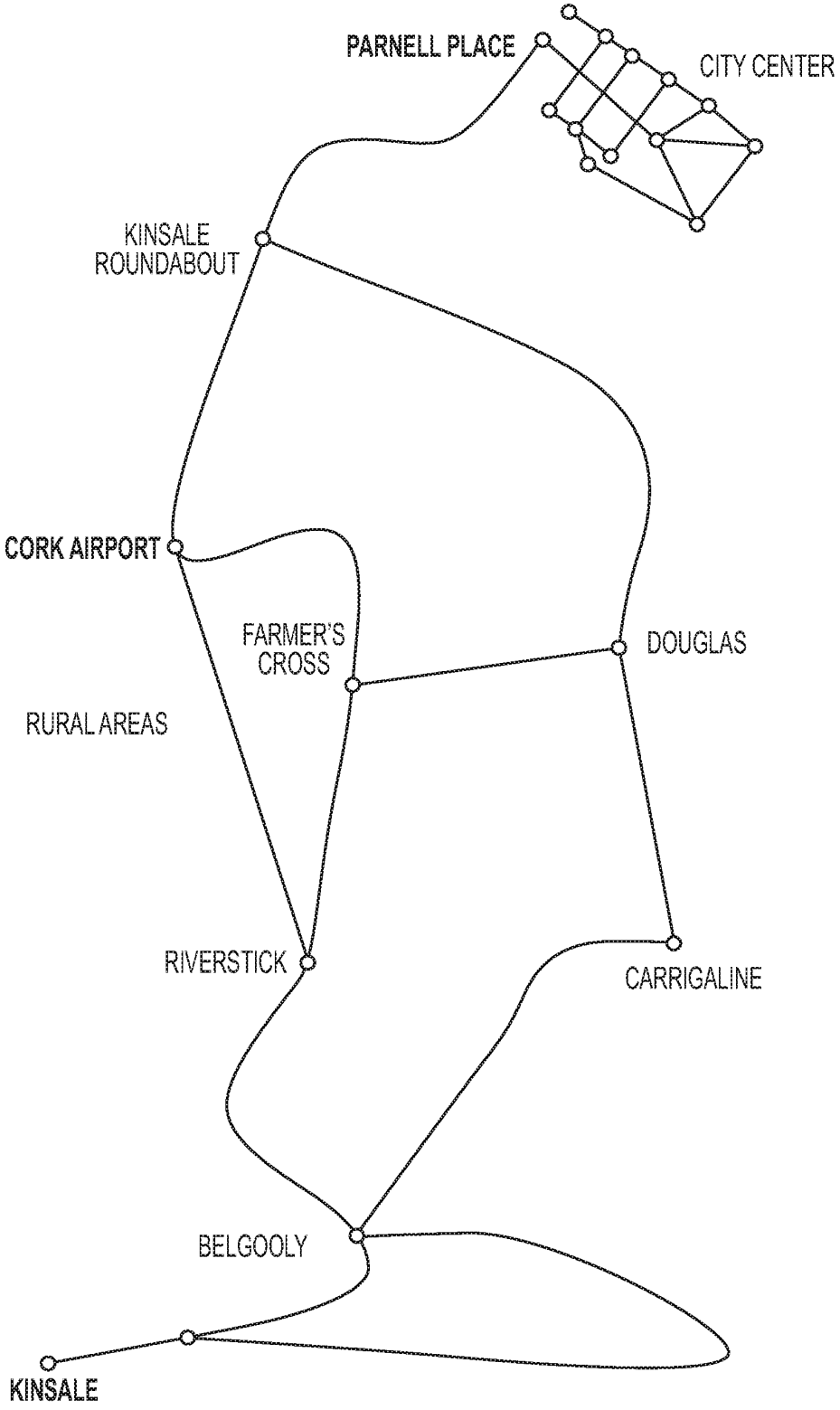


FIGURE 9b. ACTIVE TRANSPORT NETWORK, LOGICAL PRESENTATION

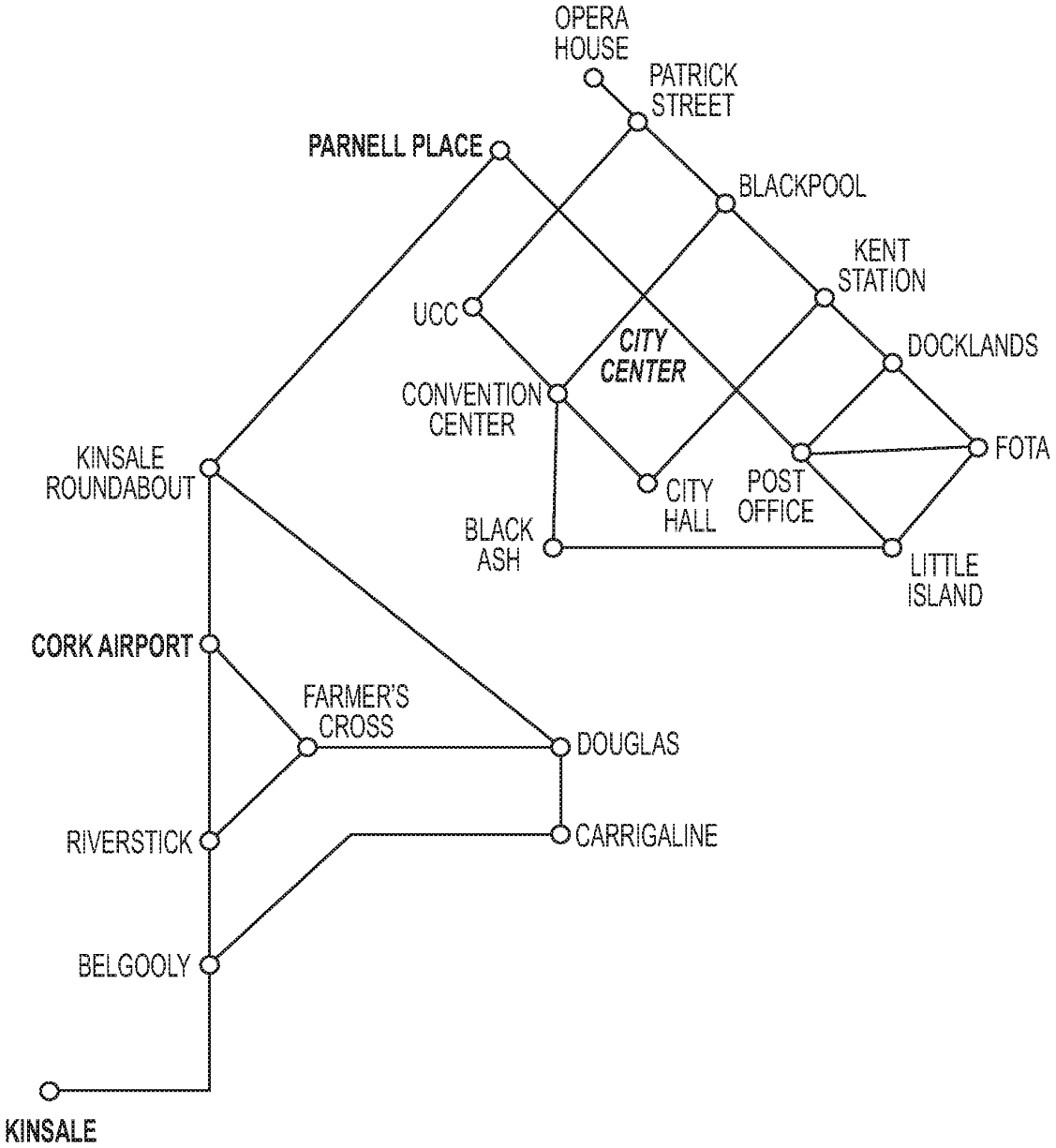
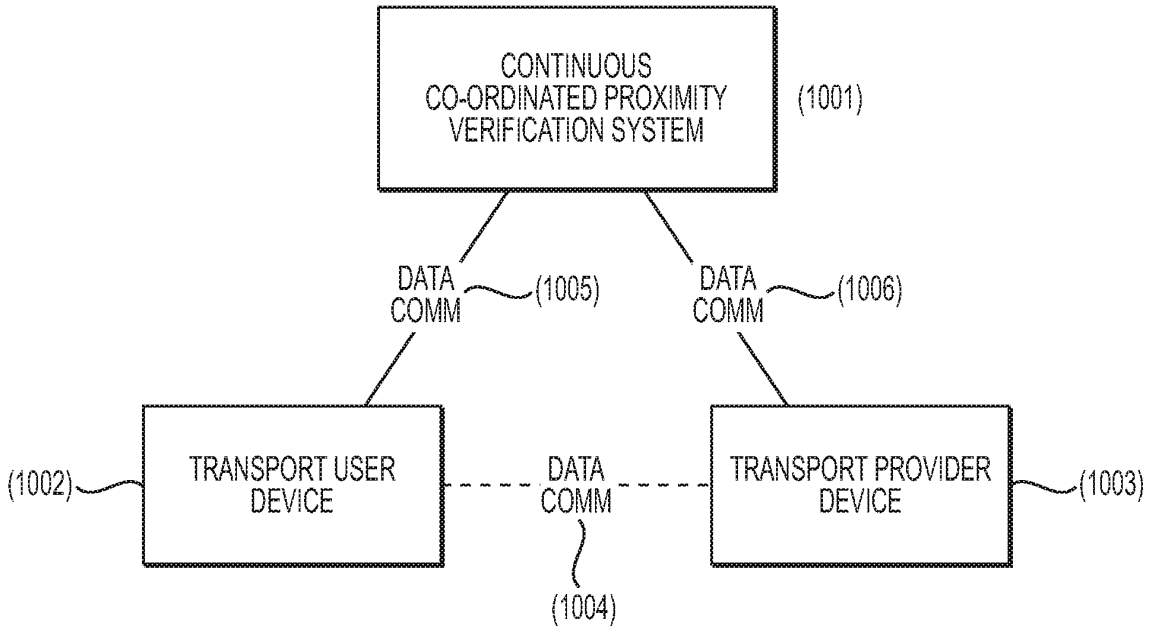


FIGURE 10a. ELEMENTS AND COMMUNICATION CHANNELS FOR CONTINUOUS CO-ORDINATED PROXIMITY BY INDEPENDENT VERIFICATION OF POSITION



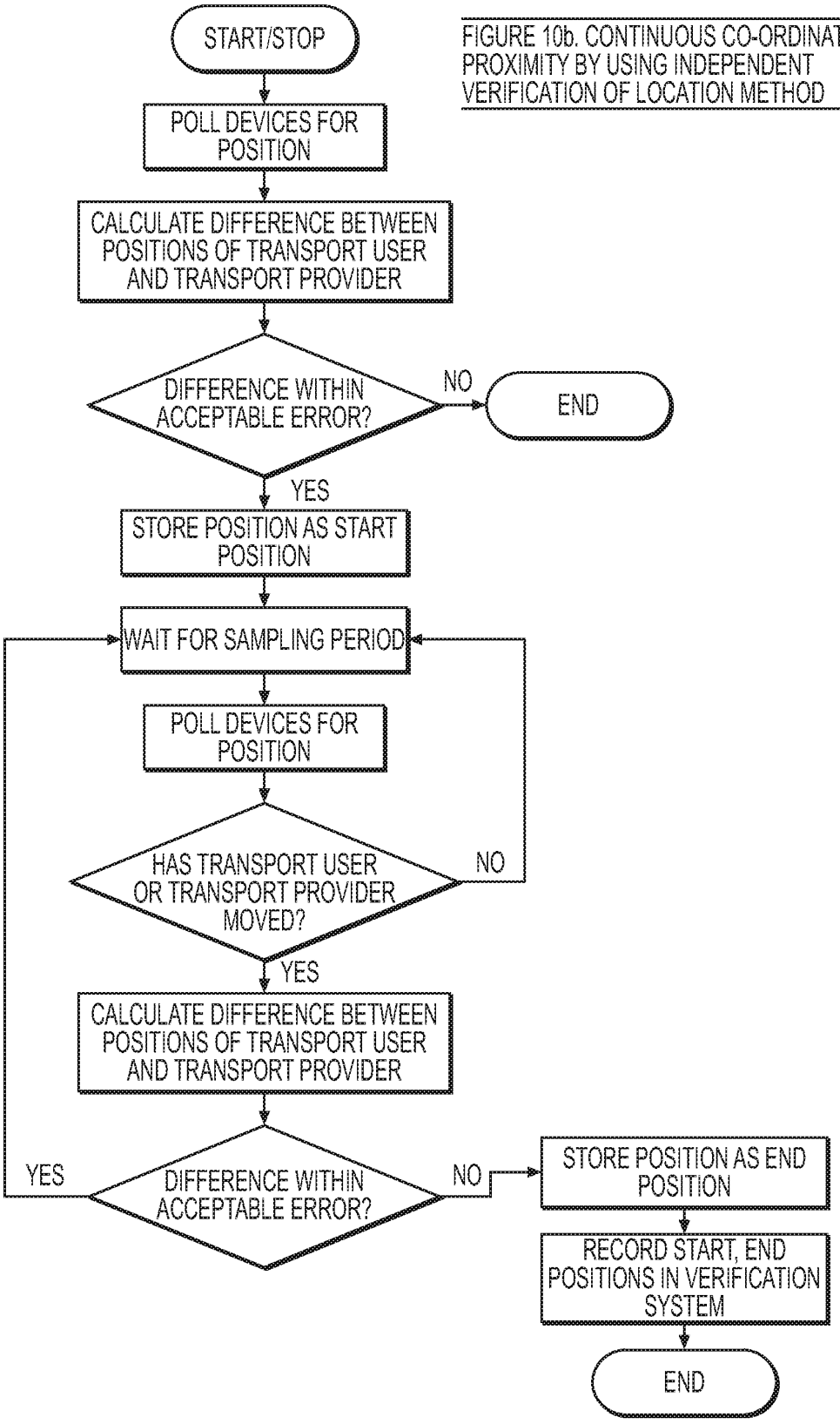


FIGURE 10b. CONTINUOUS CO-ORDINATED PROXIMITY BY USING INDEPENDENT VERIFICATION OF LOCATION METHOD

FIGURE 11a. ELEMENTS AND DATA COMMUNICATIONS LINKS IN CONTINUOUS CO-ORDINATED PROXIMITY BY VERIFICATION OF NEAR-FIELD COMMUNICATIONS LINK METHOD

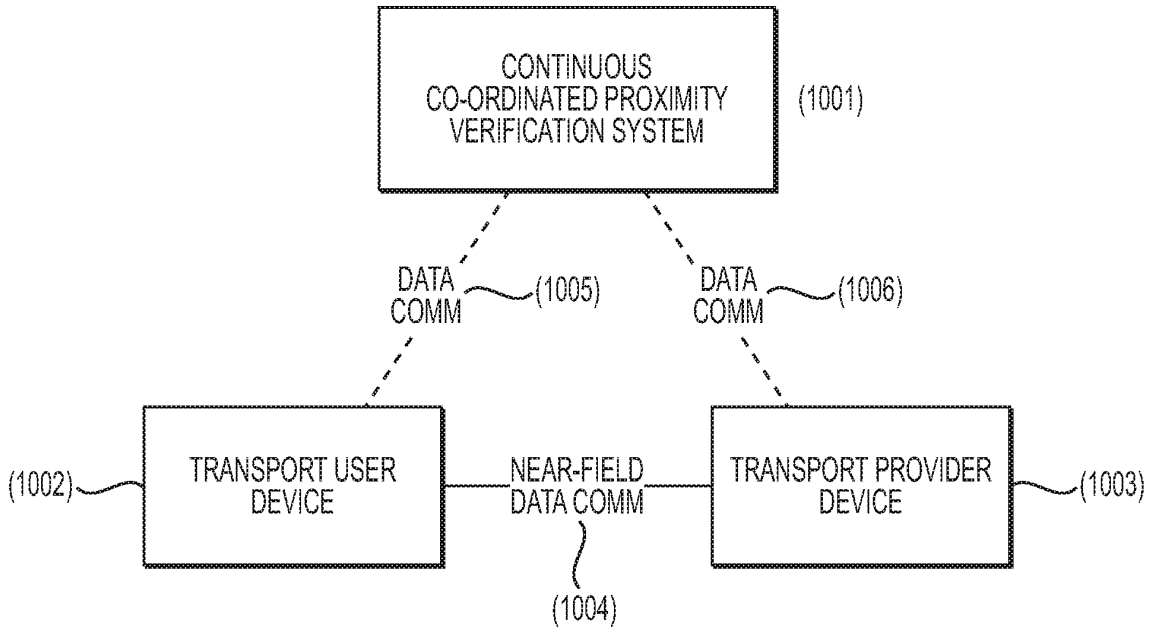


FIGURE 11b. METHOD 2 OF CONTINUOUS CO-ORDINATED PROXIMITY VIA VERIFICATION OF NEAR-FIELD COMMUNICATIONS LINK

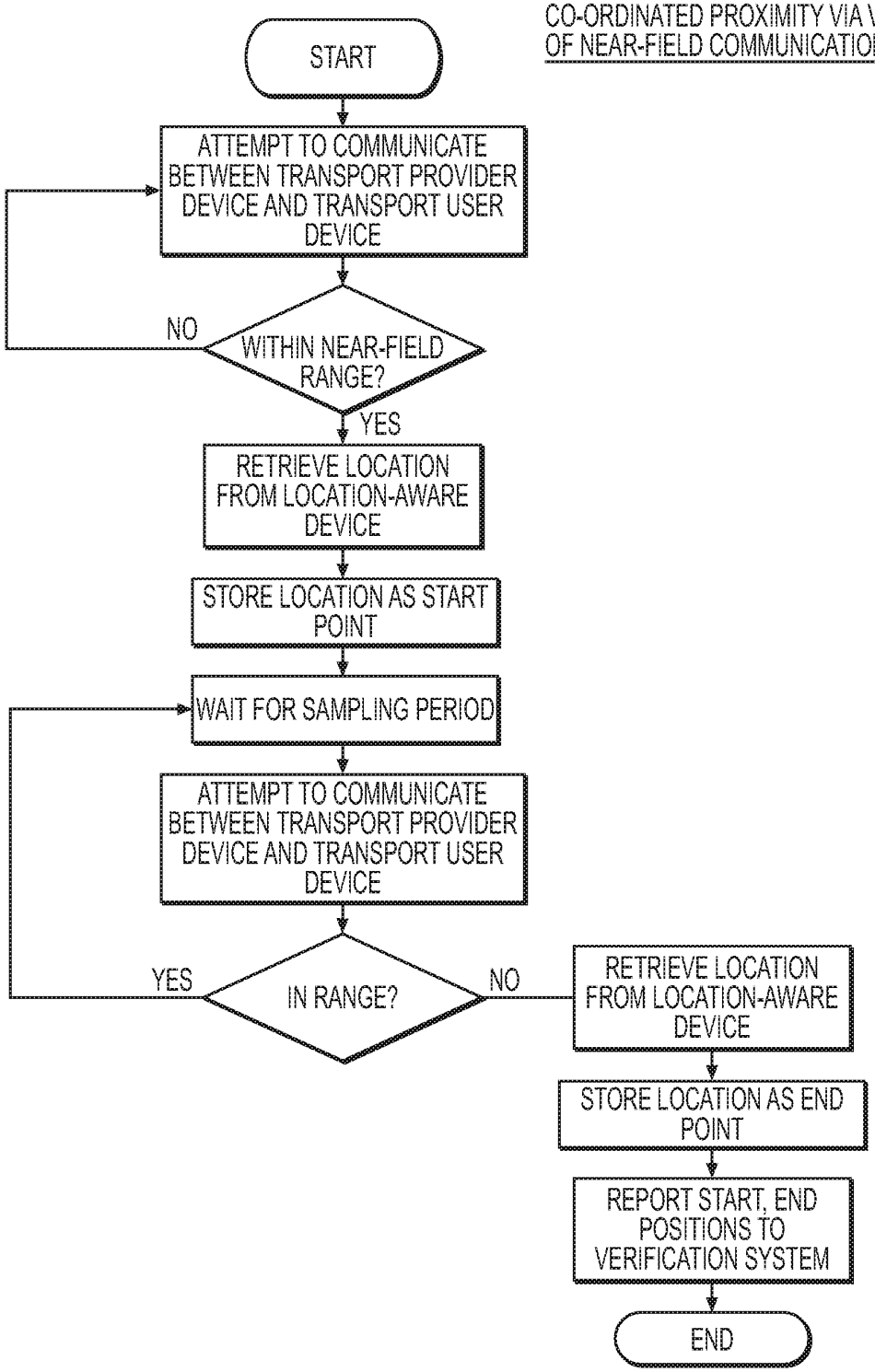


FIGURE 12a. ACCESS CONTROL SYSTEM

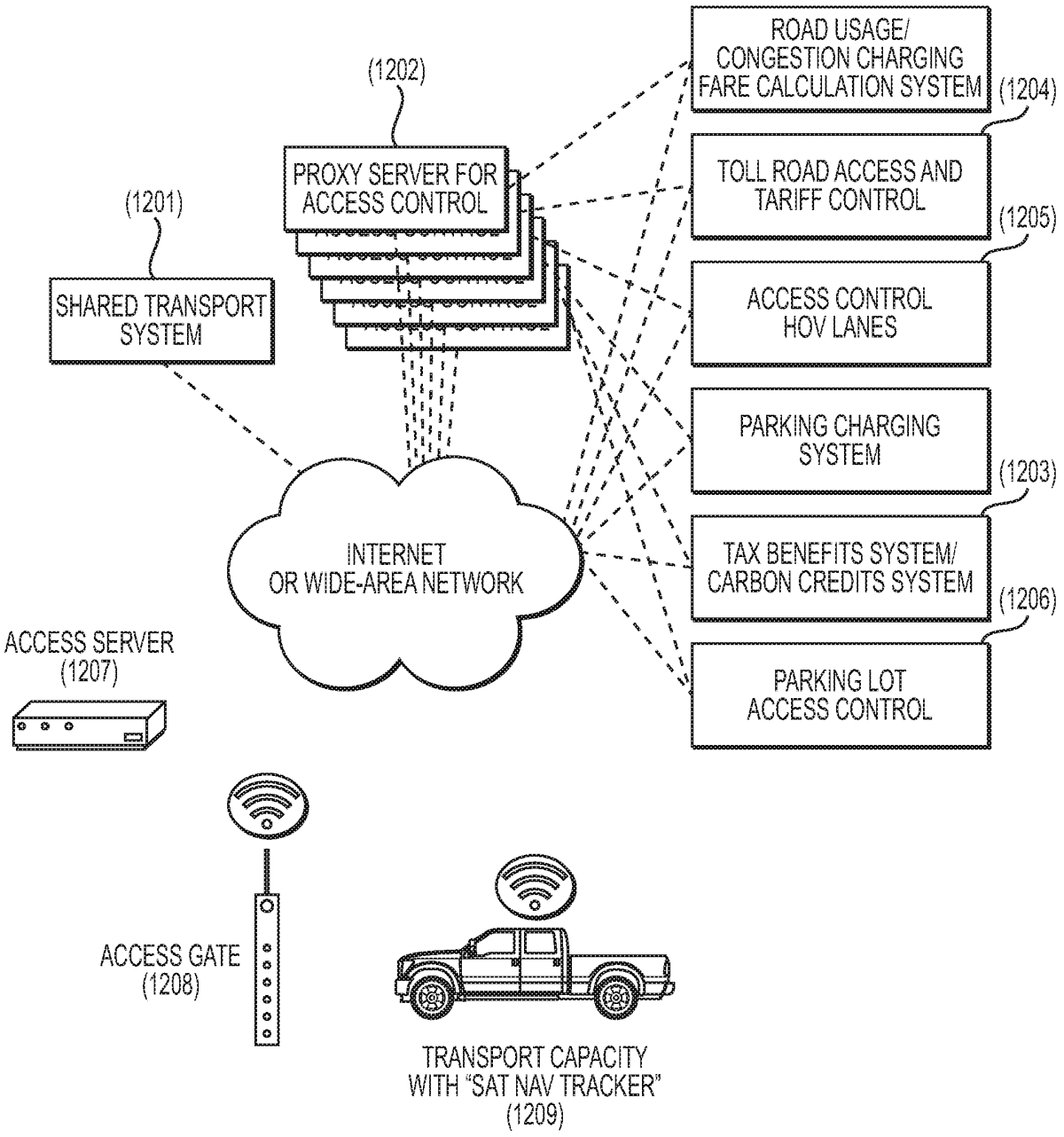


FIGURE 12b. ACCESS CONTROL SYSTEM, SERVER PUSH METHOD, SERVER-SIDE LOGIC

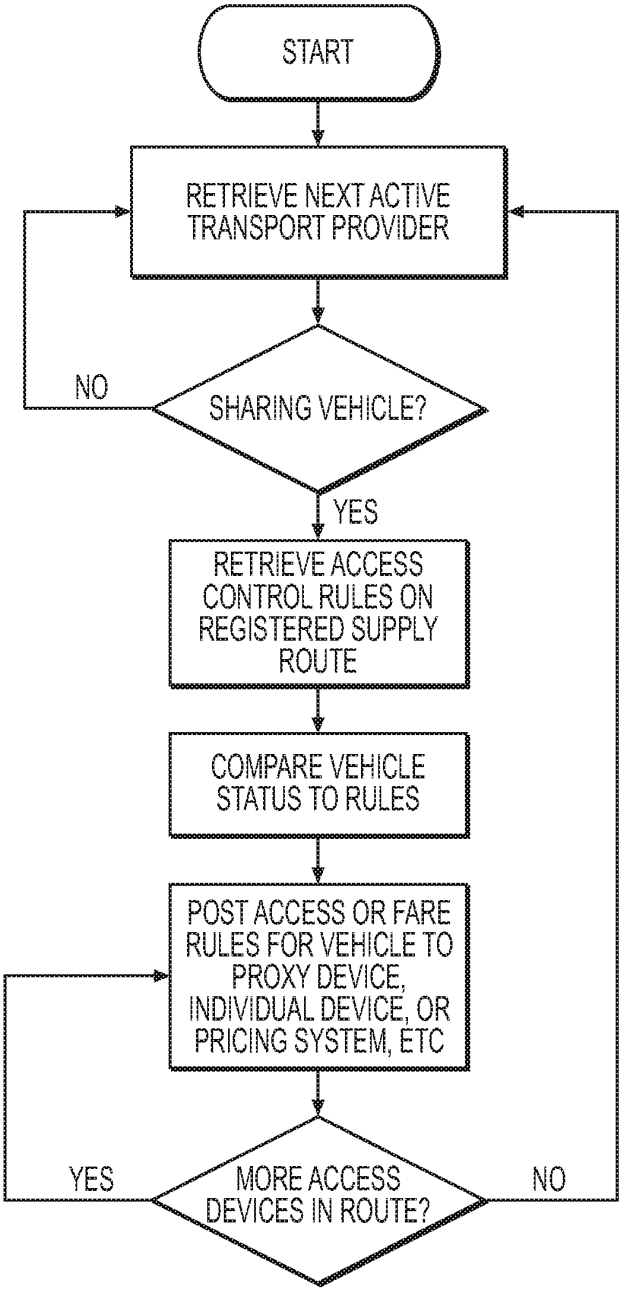


FIGURE 12c. ACCESS CONTROL SYSTEM, SERVER PUSH METHOD, CLIENT-SIDE LOGIC

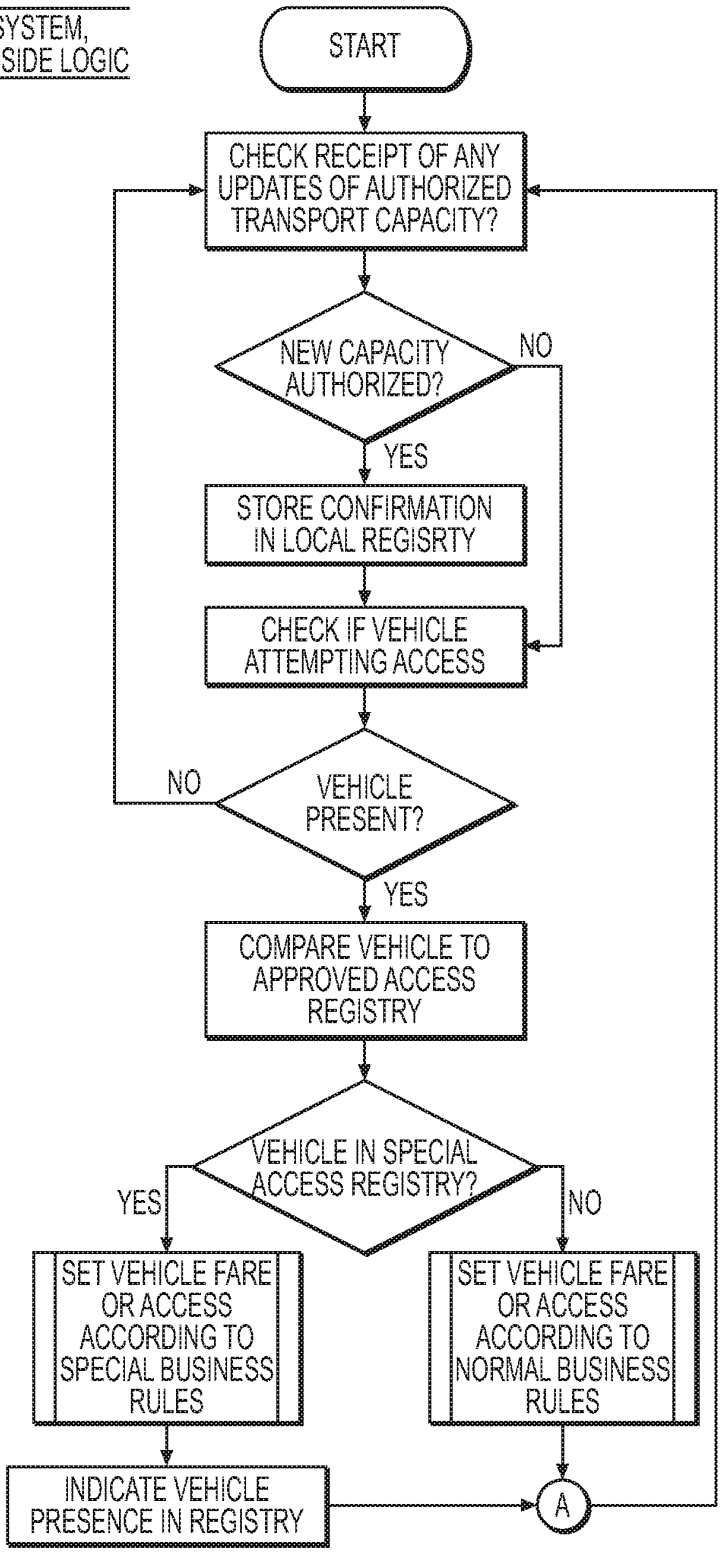


FIGURE 12d. ACCESS CONTROL SYSTEM, CLIENT PULL METHOD, CENTRAL SERVER-SIDE LOGIC

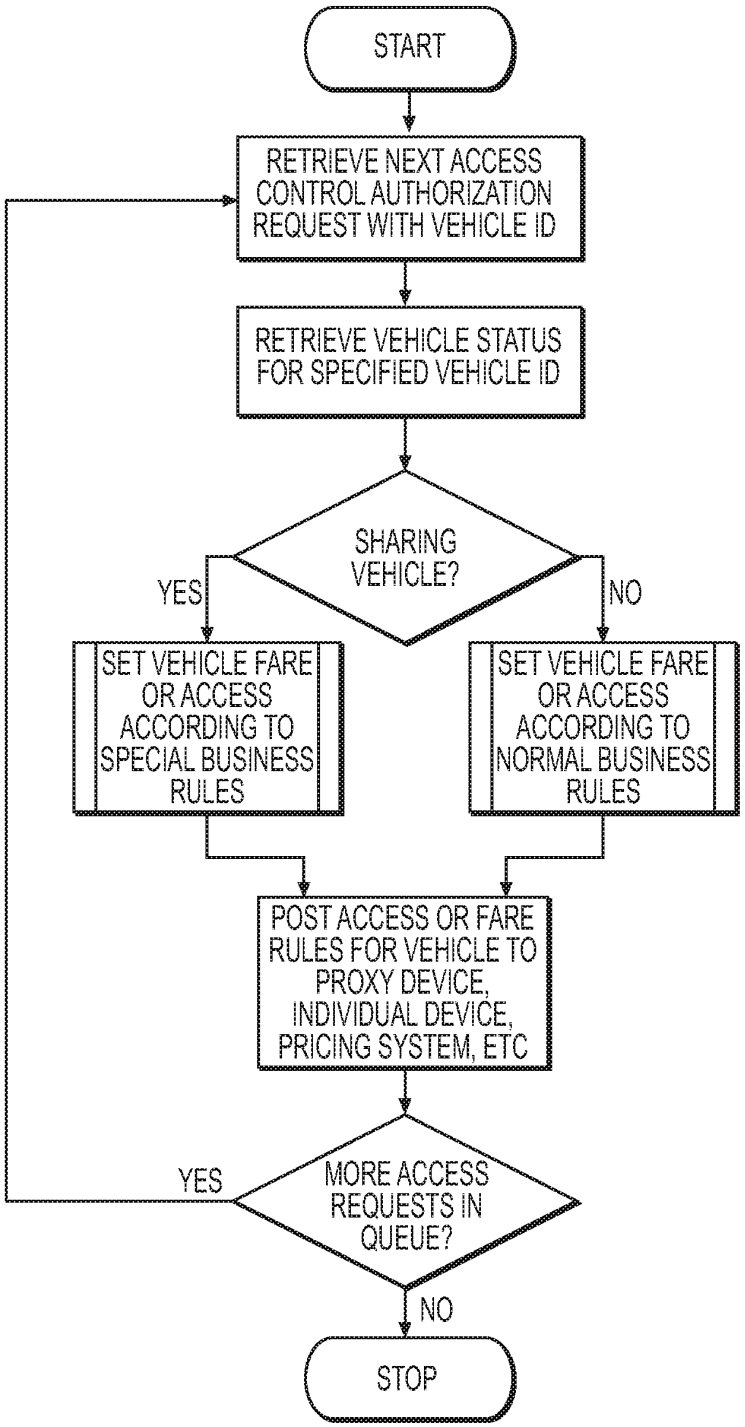


FIGURE 12e. ACCESS CONTROL SYSTEM, CLIENT PULL METHOD, CLIENT-SIDE LOGIC

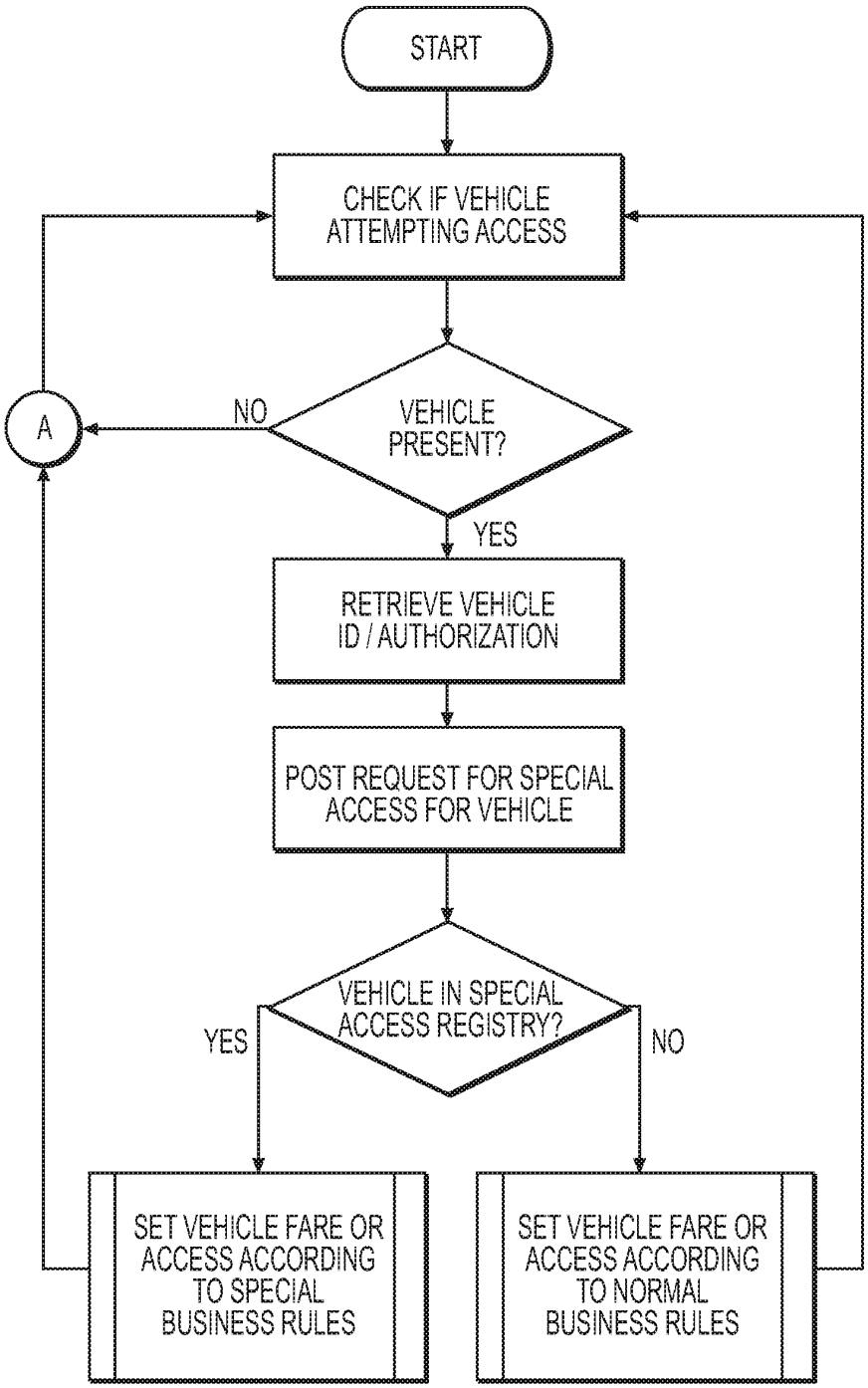


FIGURE 13. TRANSPORT COMMUNITY PROXY MESSAGE SERVICE

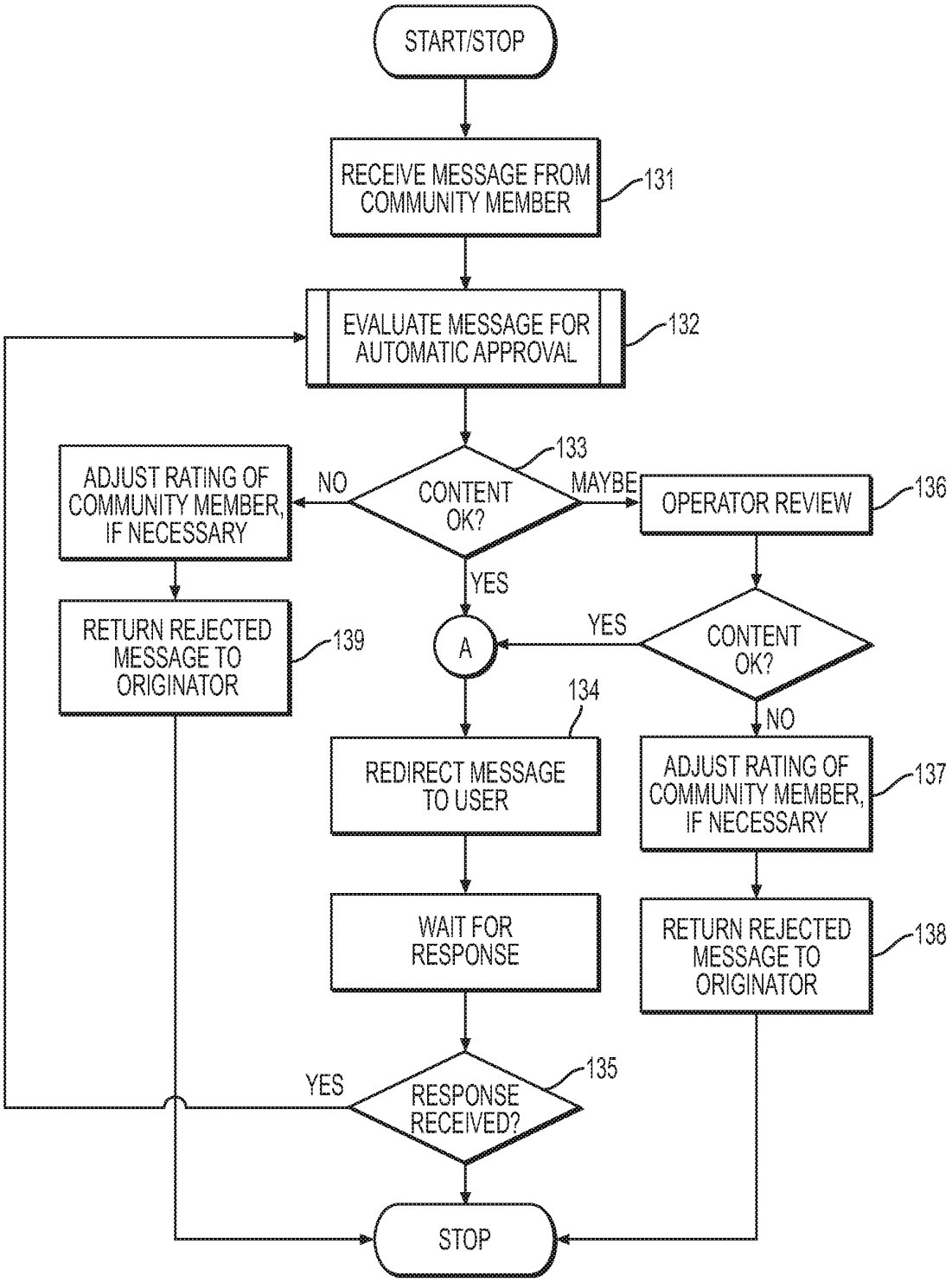


FIGURE 14a. FULL STREET, ACTIVE CAPACITY AND NODE REPRESENTATION

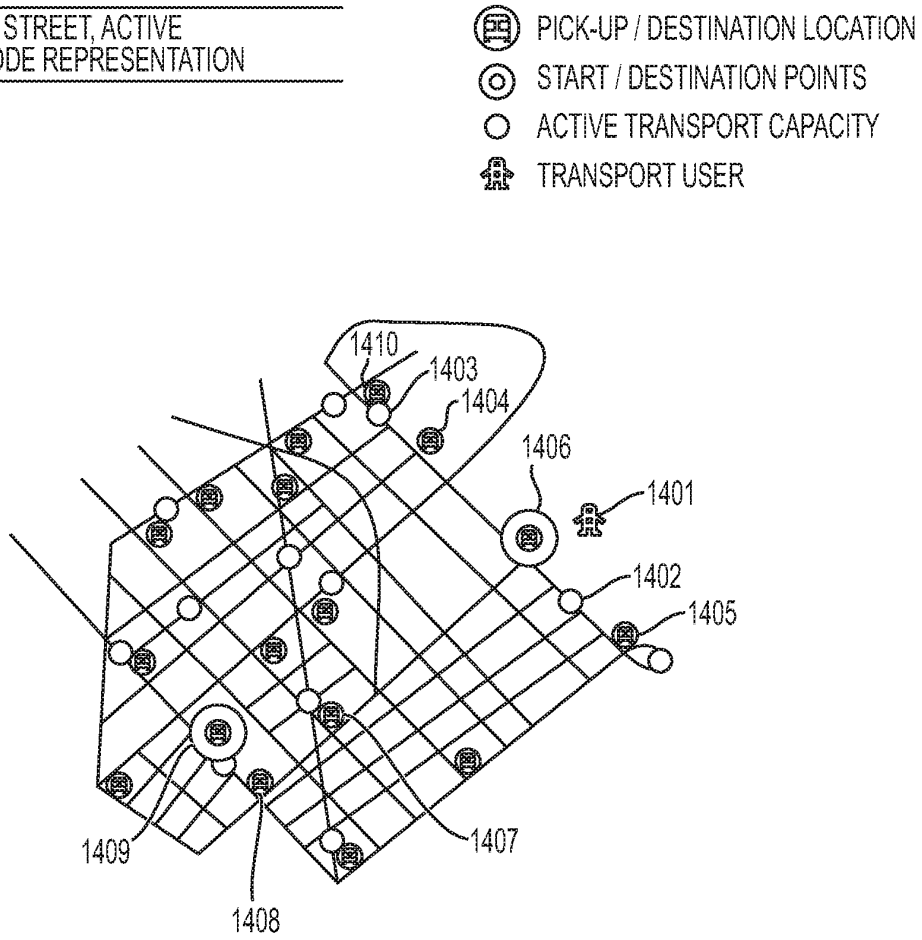


FIGURE 14b. NETWORK, ACTIVE STREET AND CAPACITY REPRESENTATION

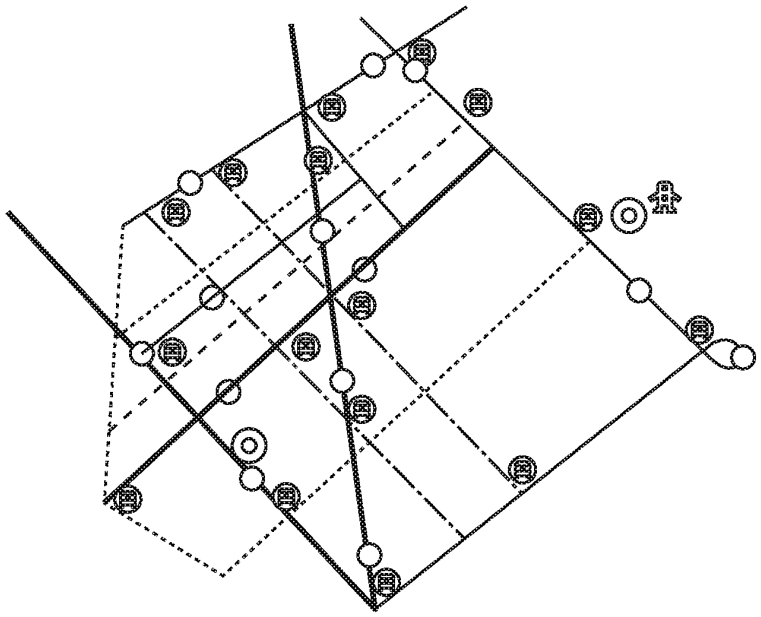


FIGURE 14c. NETWORK, ACTIVE ZERO TRANSFER STREET AND CAPACITY REPRESENTATION FROM SPECIFIC START POINT

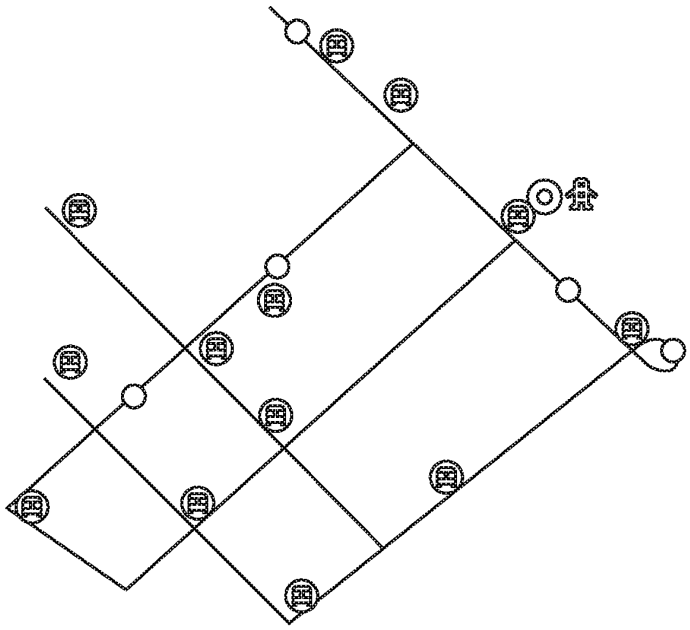


FIGURE 14d. STOCHASTIC NETWORK, TIME OF DAY CAPACITY REPRESENTATION

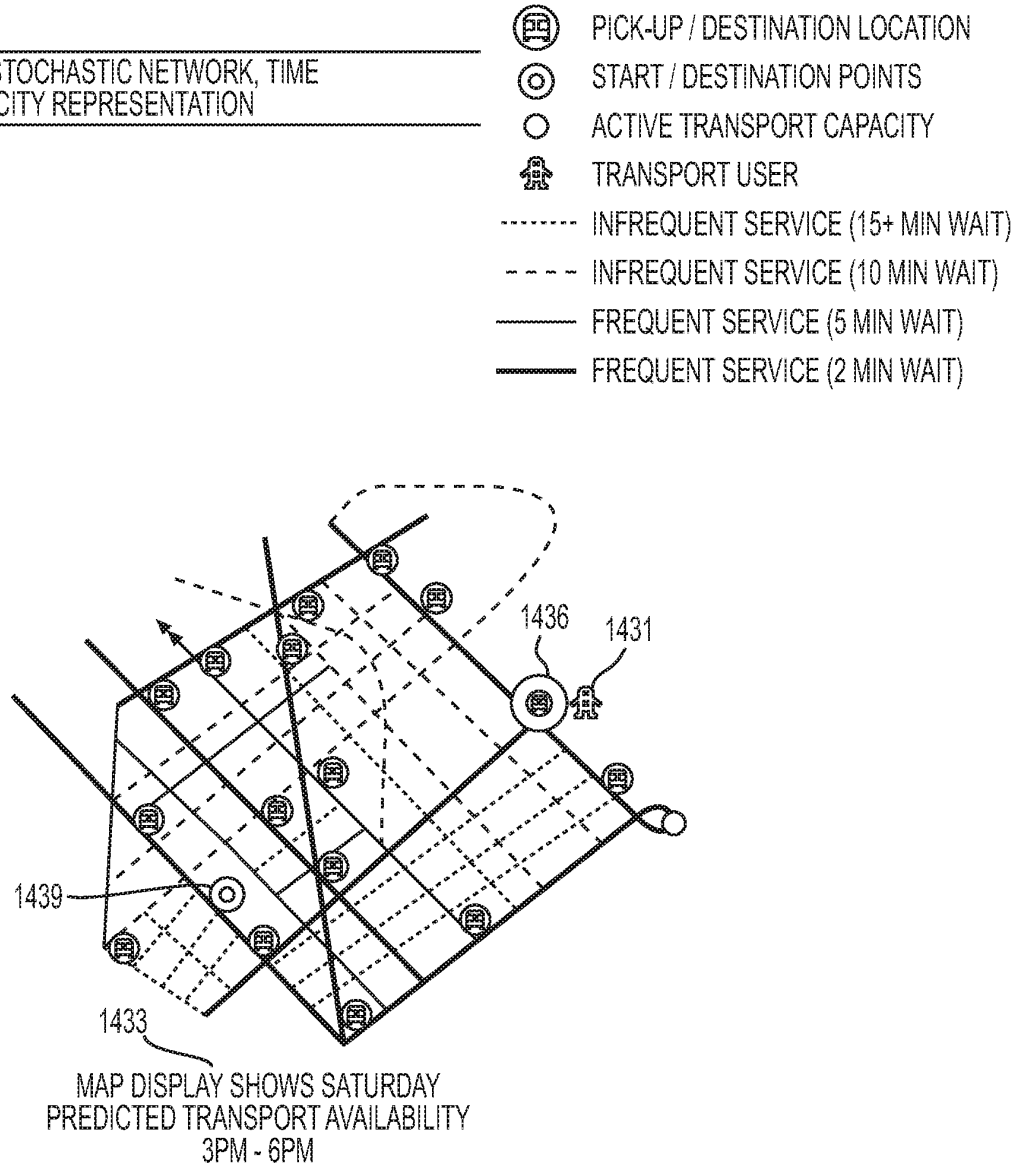


FIGURE 14e. STOCHASTIC NETWORK, ACTIVE STREET AND CAPACITY REPRESENTATION, SPECIFIC DEPARTURE POINT, OUTBOUND

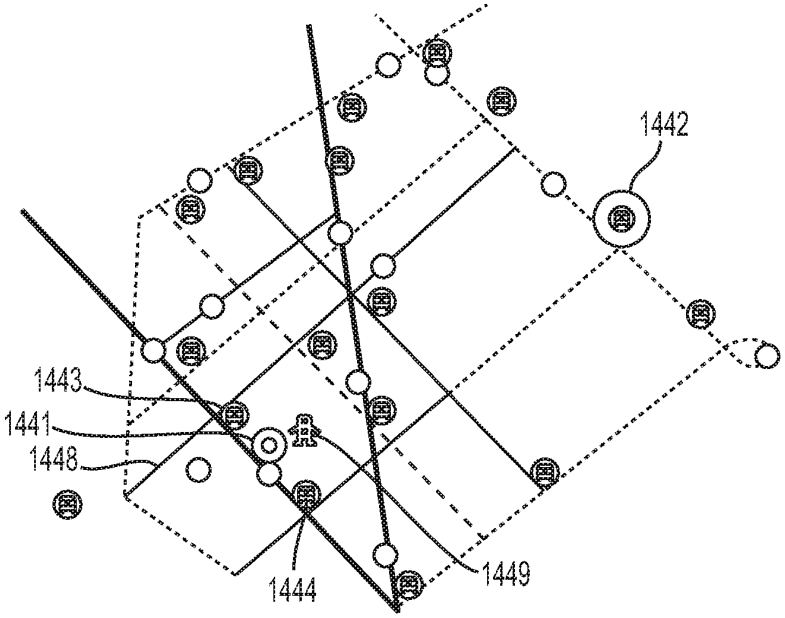


FIGURE 14f. NETWORK, WAIT TIME AND TRANSFER REPRESENTATION

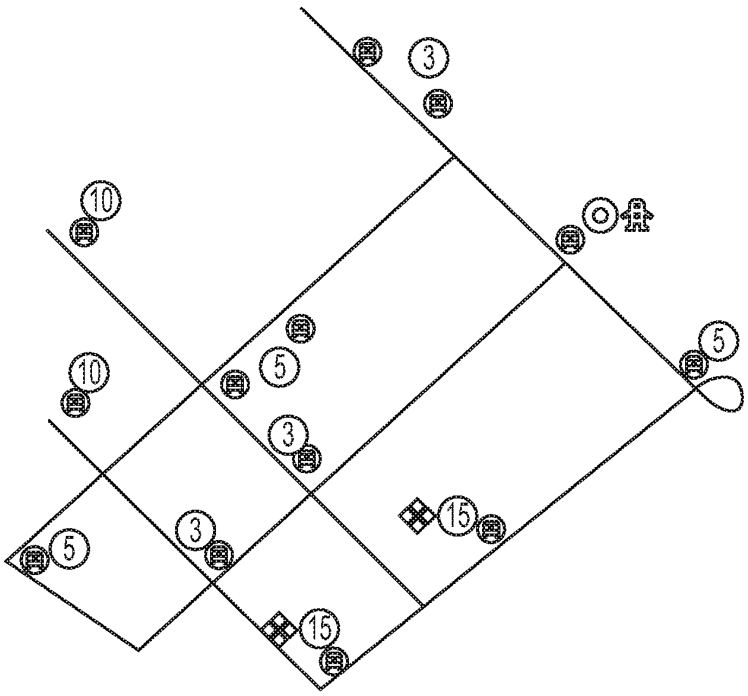


FIGURE 14g. STOCHASTIC NETWORK, TABULAR REPRESENTATION OF TIME OF DAY CAPACITY

(1471) (1472) (1475)

START POINT: 2142 14TH AVE;
DESTINATION: 200 BROADWAY, TROY

TIME OF DAY	DEPARTURE LOCATION	AVAILABILITY
5:00AM-6:30AM	13TH ST	⑮ MINUTES
	15TH ST	NO SERICE
6:30AM-7:30AM	13TH ST	⑤ MINUTES
	15TH ST	⑩ MINUTES
7:30AM-8:30AM	13TH ST	③ MINUTES
	15TH ST	⑤ MINUTES
(1473) 8:30AM-10:00AM (1474)	13TH ST	⑤ MINUTES
	15TH ST	⑤ MINUTES
10:00AM-4:30PM	13TH ST	⑩ MINUTES
	15TH ST	⑮ MINUTES
4:30PM-7:30PM	13TH ST	⑤ MINUTES
	15TH ST	⑤ MINUTES
7:30PM-10:30PM	13TH ST	⑤ MINUTES
	15TH ST	⑮ MINUTES
10:30PM-2:30AM	13TH ST	⑮ MINUTES
	15TH ST	① HOUR
2:30AM-5:00AM	13TH ST	NO SERVICE
	15TH ST	NO SERVICE

FIGURE 14h. COMBINATION REAL-TIME & STOCHASTIC NETWORK DEPARTURE BOARD FOR SHARED TRANSPORT NETWORK

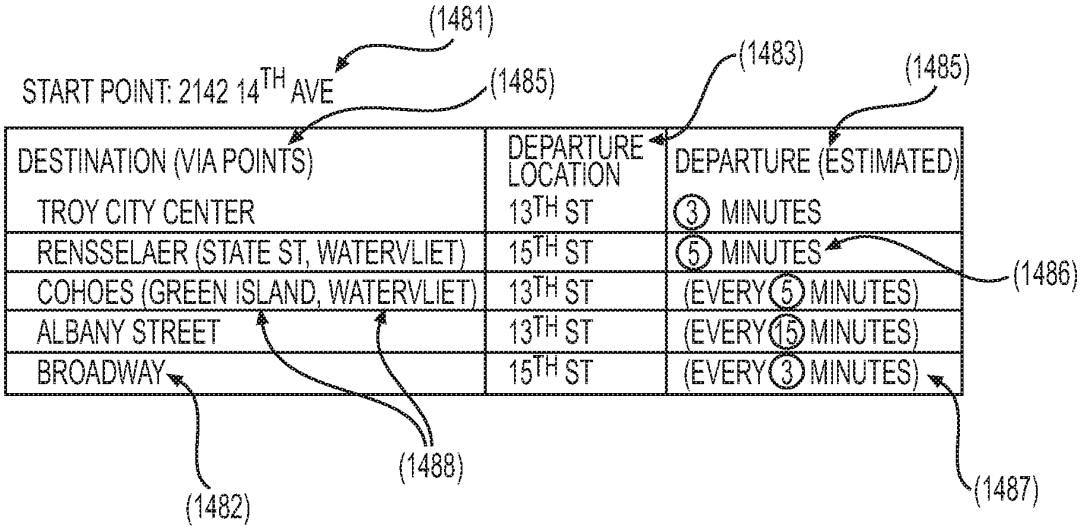
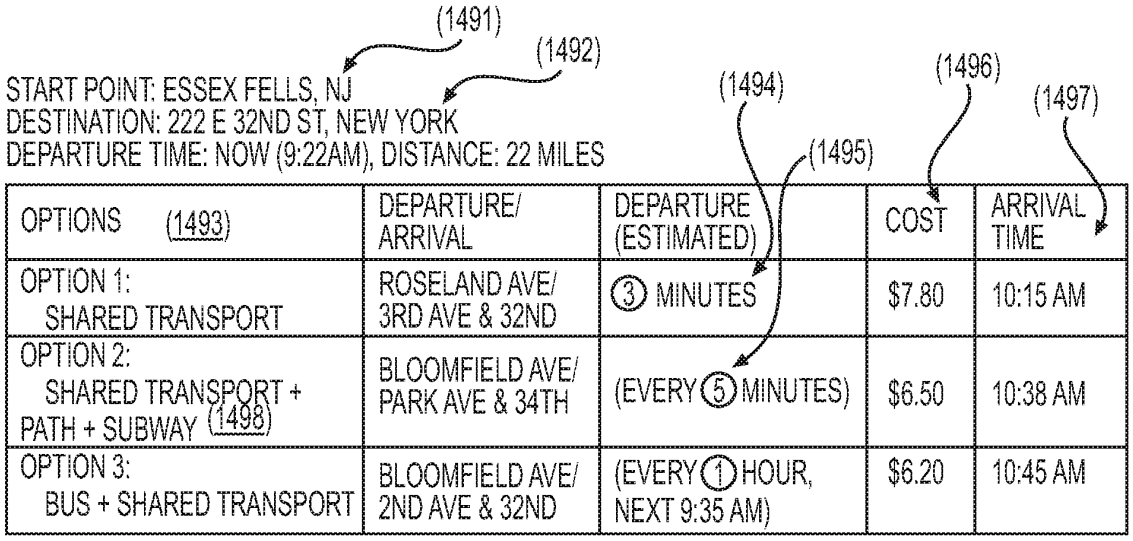


FIGURE 14i. REAL-TIME JOURNEY PLANNER FOR SHARED TRANSPORT NETWORK, FIXED START & DESTINATION POINTS, TABULAR REPRESENTATION



OPTIONS (1493)	DEPARTURE/ ARRIVAL	DEPARTURE (ESTIMATED)	COST	ARRIVAL TIME
OPTION 1: SHARED TRANSPORT	ROSELAND AVE/ 3RD AVE & 32ND	③ MINUTES	$7.80	10:15 AM
OPTION 2: SHARED TRANSPORT + PATH + SUBWAY (1498)	BLOOMFIELD AVE/ PARK AVE & 34TH	(EVERY ⑤ MINUTES)	$6.50	10:38 AM
OPTION 3: BUS + SHARED TRANSPORT	BLOOMFIELD AVE/ 2ND AVE & 32ND	(EVERY ① HOUR, NEXT 9:35 AM)	$6.20	10:45 AM

PATENT
Customer No. 108449
Attorney Docket No. 00199-0001-15000

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re § 1.53(b) continuation application of U.S. Application No. 16/564,819:	)	Parent Art Unit: 2648
Sean O'SULLIVAN	)	Parent Examiner: Cindy Huyen Trandai
Application No.: Not Yet Assigned	)	
Filed: Concurrently Herewith	)	Confirmation No.: Not Yet Assigned
For: SYSTEMS AND METHODS FOR UTILIZING A SHARED TRANSPORT NETWORK FOR DELIVERY OF GOODS	)	***VIA EFS-WEB***

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Commissioner:

PRELIMINARY AMENDMENT

Prior to examination, please amend this application as follows:

Amendments to the Drawings begin on page 2.

Amendments to the Specification begin on page 3.

Amendments to the Claims are reflected in the listing of claims beginning on page 4.

Remarks begin on page 12.

Attachments: Third-two (32) sheets of Replacement Drawings.

AMENDMENTS TO THE DRAWINGS:

Please replace the previously-filed sheets of drawings of Figures 1-14i with the attached thirty-two (32) replacement sheets.

AMENDMENTS TO THE SPECIFICATION:

Please replace the title with the following amended title:

- - ~~SHARED TRANSPORT SYSTEM AND SERVICE NETWORK~~ SYSTEMS AND METHODS FOR UTILIZING A SHARED TRANSPORT NETWORK FOR DELIVERY OF GOODS - -

Please amend the first paragraph on page 1 of the specification as follows:

This application is a continuation of and claims the benefit of priority to U.S. Nonprovisional Patent Application No. 16/564,819, filed September 9, 2019, which is a continuation of and claims the benefit of priority to U.S. Nonprovisional Patent Application No. 16/197,953, filed November 21, 2018, now U.S. Patent No. 10,453,339, issued October 22, 2019, which is a continuation of and claims the benefit of priority to U.S. Nonprovisional Patent Application No. 15/998,864, filed August 17, 2018, which is a continuation of and claims the benefit of priority to U.S. Nonprovisional Patent Application No. 12/924,487, filed September 28, 2010, now U.S. Patent No. 10,083,608, issued September 25, 2018, which is a division of and claims the benefit of priority to U.S. Nonprovisional Patent Application No. 12/069,656, filed February 12, 2008, now U.S. Patent No. 7,840,427, issued November 23, 2010, which claims priority ~~of~~ to U.S. Provisional Patent Application No. 60/900,808, filed February 12, 2007, which are incorporated herein by reference in their entireties ~~and is a division of Serial Number 12/069,656 filed February 12, 2008~~.

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Canceled)

2. (New) A method of transporting an item using a shared transport system, the method comprising:

receiving, by the shared transport system, a first transport request from a first transport user device for delivery of a first item, 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 item;

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;

sending, by the shared transport system, the first transport request to the transport provider device;

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;

determining, by the shared transport system, that the transport provider has picked up the first item; and

determining, by the shared transport system, progress of the delivery of the first item based on determining a location of the transport provider device.

3. (New) The method of claim 2, wherein the transport provider device includes global positioning system (GPS) technology.

4. (New) The method of claim 3, wherein determining the location of the transport provider device comprises utilizing the GPS technology.

5. (New) The method of claim 2, wherein determining the location of the transport provider device comprises periodically polling location information associated with the transport provider device.

6. (New) The method of claim 2, further comprising:

sending, by the shared transport system, instructions for displaying the progress of the delivery of the first item to the first transport user device, wherein displaying the progress of the delivery of the first item comprises displaying the location of the transport provider device on a map.

7. (New) The method of claim 2, further comprising:

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 item, 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 item;

determining, by the shared transport system, that the transport provider is available for the delivery of the second item based on comparing the updated provider characteristics associated with the transport provider with the second transport request; and

sending, by the shared transport system, the second transport request to the transport provider device.

8. (New) The method of claim 7, wherein updating, by the shared transport system, the provider characteristics associated with the transport provider comprises updating the available space or capacity of the transport provider.

9. (New) The method of claim 8, wherein comparing the updated provider characteristics associated with the transport provider with the second transport request comprises comparing the updated available space or capacity of the transport provider with the second needed space or capacity for the second item.

10. (New) The method of claim 7, wherein comparing the updated provider characteristics associated with the transport provider with the second transport request comprises comparing the current location or planned route with the second pick-up and drop-off locations.

11. (New) The method of claim 2, further comprising:

determining, by the shared transport system, that the transport provider has delivered the first item 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 item and the transport provider device no longer exists.

12. (New) A computer system for transporting an item using a shared transport system, the system comprising:

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 functions to:

receive, by the shared transport system, a first transport request from a first transport user device for delivery of a first item, 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 item;

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;

send, by the shared transport system, the first transport request to the transport provider device;

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;

determine, by the shared transport system, that the transport provider has picked up the first item; and

determining, by the shared transport system, progress of the delivery of the first item based on determining a location of the transport provider device.

13. (New) The computer system of claim 12, wherein the transport provider device includes global positioning system (GPS) technology.

14. (New) The computer system of claim 13, wherein determining the location of the transport provider device comprises utilizing the GPS technology.

15. (New) The computer system of claim 12, wherein determining the location of the transport provider device comprises periodically polling location information associated with the transport provider device.

16. (New) The computer system of claim 12, further including functions to:

send, by the shared transport system, instructions for displaying the progress of the delivery of the first item to the first transport user device, wherein displaying the progress of the delivery of the first item comprises displaying the location of the transport provider device on a map.

17. (New) The computer system of claim 12, further including functions to:

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;

receive, by the shared transport system, a second transport request from a second transport user device for delivery of a second item, 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 item;

determine, by the shared transport system, that the transport provider is available for the delivery of the second item based on comparing the updated provider characteristics associated with the transport provider with the second transport request; and

send, by the shared transport system, the second transport request to the transport provider device.

18. (New) The computer system of claim 17, wherein updating, by the shared transport system, the provider characteristics associated with the transport provider comprises updating the available space or capacity of the transport provider.

19. (New) The computer system of claim 18, wherein comparing the updated provider characteristics associated with the transport provider with the second transport request comprises comparing the updated available space or capacity of the transport provider with the second needed space or capacity for the second item.

20. (New) The computer system of claim 17, wherein comparing the updated provider characteristics associated with the transport provider with the second transport request comprises comparing the current location or planned route with the second pick-up and drop-off locations.

21. (New) 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 an item using a shared transport system, the plurality of functions comprising:

receiving, by the shared transport system, a first transport request from a first transport user device for delivery of a first item, 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 item;

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;

sending, by the shared transport system, the first transport request to the transport provider device;

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;

determining, by the shared transport system, that the transport provider has picked up the first item; and

determining, by the shared transport system, progress of the delivery of the first item based on determining a location of the transport provider device.

REMARKS

By this Preliminary Amendment, Applicant amends the specification to insert reference to related applications, to which this application claims the benefit of priority. Additionally, Applicant submits replacement drawing sheets that include clear versions of Figures 1-14i. The replacement drawing sheets submitted herewith contain no new matter. Furthermore, Applicant cancels claim 1 and adds claims 2-21. The claims are fully supported by the application as-filed and contain no new matter.

This application claims the benefit of an earlier filed U.S. nonprovisional patent application. To the extent that the claims in this application have the same or similar terms to those in the parent application, Applicant hereby rescinds any disclaimers originating from arguments made during prosecution of the parent application. Applicant invites the Examiner to revisit the relevant prior art of the parent application. *Hakim v. Cannon Avent Group*, 479 F.3d 1313 (Fed. Cir. 2007).

If there is any fee due in connection with the filing of this Amendment that is not otherwise provided herewith, please charge the fee to Deposit Account No. 50-5906.

Respectfully submitted,

BOOKOFF McANDREWS, PLLC
Customer Number: 108449

Dated: October 31, 2019

By: /Sangwoo Ahn/
Sangwoo Ahn
Reg. No. 76905
(202) 808-3942

SHARED TRANSPORT SYSTEM AND SERVICE NETWORK

This application claims priority of Provisional Patent Application 60/900,808 filed February 12, 2007 and is a division of Serial Number 12/069,656 filed February 12, 2008.

This invention relates to a ground transportation network. More particularly, this invention relates to a ground transportation network matching individuals with transport capacity on a supply and demand basis.

Transport capacity, for example cars, often travel long distances with minimal load (i.e., SUVs on daily commutes with only the driver occupying the vehicle). Such capacity is disused because of a number of reasons, including (a) an occasional need for greater capacity causes consumers to buy excess transportation capacity, (b) variations in schedule and destinations traveled create non-matched transportation needs compared with other household members, (c) lack of knowledge of trusted users who could conveniently use this excess capacity, and (d) difficulty in providing an economic benefit to incentivize the driver to share their excess capacity. Meanwhile, the driver of a vehicle often has no choice but to use a personal transport vehicle (despite the high costs involved) because of lack of accessibility, inconvenient scheduling, or multiple interchanges required if they were to rely on public transport systems.

Proposals have been made, for example, in US Patent 6,697,730, to use a central assigning system and communications devices adapted to be associated with vehicles for transmitting information from the vehicles to the central assigning system, and for receiving information from the central assigning system. In the 1990s, the US Department of Transportation designated this "Dynamic Ridesharing" area a specific

area of research interest, under the designation ATIS8 as part of the National ITS Architecture, and has proposed methods for transactions, interchange of billing data, and the like. Such systems, if implemented, would represent advances over methods in common practice, however, it is believed the invention described herein makes such systems more practical and useful because of the following significant innovations and claims: methods to reduce the workload/steps necessary on the driver and the rider to make this system more inconvenient; methods to improve the trustability of drivers and riders, increasing the likelihood people will use this system; a hardware device which would communicate visually to external riders; automatic determination and registration of transport capacity destination and capacity, increasing availability of shared transport vehicles; methods to characterize and publish information about "ad-hoc" transport capacity in manners similar to traditional, centrally controlled transit systems, in order to increase trust and ridership in the system; and an ad-hoc nature to the proposed system which enables casual use by registered users.

The inefficient use of transport capacity results in approximately 3-4 times as many cars on the road as would be necessary if capacity were only 50% occupied. This has the additional implications created by the excess consumption of fuel in potential environment problems (CO_2 pollution and global warming) as well as geopolitical problems (for example, many countries including the United States could be energy self-sufficient if they used their existing transportation capacity only 40% better (versus the 200+% better that could theoretically be achieved).

In cities such as Los Angeles, the transportation network is largely dysfunctional (i.e., the average worker spends 1.6 hours of their day in unproductive and costly

commuting via personal car on congested highways). Additionally, such a consumer cannot rely on public transit because mass transit "doesn't take them from where they live to where they work".

Inadequate "feeder systems" for the public transit network mean that billions of dollars are spent creating subway and rail systems that are massively underused, in terms of persons transported per hour versus the potential capacity of these rail systems. The flexibility of highway and road networks, along with the critical mass of car penetration and the marketplace dynamic of urban real estate value, however, means that wherever a highway is built, personal transport cars will soon fill it, creating further urban sprawl, with all the societal and ecological disadvantages that implies.

Personal transport cars are common, among other reasons, because (a) the lack of availability of mass transit networks to serve the home or destination of the driver, (b) the inconvenience of waiting a long or unknown period of time for public transit, (c) fear of traveling with strangers or fear in waiting for long periods at public transit points.

Many large cities have successfully implemented mass transit systems which are widely used by people from a wide variety of socio-economic backgrounds (i.e., London, New York, Madrid, Tokyo). While even these systems can be improved, these examples show that if a Shared Transport system exists with sufficient timeliness and advantages, it will be widely used. These cities provide transit systems because these systems reduce their cost for infrastructure (i.e., building ever-larger and more inefficient highways) and increases productivity for their citizens and the companies in their region.

So, cities have long sought to provide mass transit systems which take people from where they live to where they work and/or where they shop. However, since the popularization of highways in the 1950s in the US, cities have become increasingly suburban. Highway systems do not complement mass transit systems and, in fact, work against mass transit systems by enabling urban sprawl to the point where mass transit infrastructure is unsustainable (at the extremities of a city center, due to lack of population density) and unattractive (because of inconvenient intermodal interchange). As fewer people use mass transit, less routes are supportable, less area is reachable via mass transit, and thus more people need to rely on relatively costly and ecologically damaging individual transport, resulting in the mass transit system itself imploding with a lack of critical mass, while personal transport systems simultaneously suffer through massive over-congestion.

It is an object of the invention to provide a system that enables regular highway traffic and privately owned personal transport systems to augment and enable public mass transit networks.

It is another object of the invention to match a need to move individuals and/or goods from one geographic point to another geographic point ("Transport Demand") with an unrelated driver's unused transportation capacity.

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.

Briefly, the invention provides a network system that matches the supply and demand of transportation services by incorporating unused transportation capacity (i.e.,

empty seats) with a real-time allocation and matching service that enables individuals and goods to conveniently hire that capacity with attractive pricing, rapid responsiveness, better information availability and trusted security.

The network system incorporates telecommunications and computing technology to match the supply of excess transport capacity with the demand for personal transport. In areas where a critical mass of transport providers can be established, this system aims to provide pick-up and drop-off service to within a few hundred yards to the majority of locations in the covered area, with response/waiting times of 3-15 minutes under optimal circumstances. In addition, different levels of service can be provided, including the provision of transport for goods, persons with special needs, and persons or goods within closed communities of transit providers.

The network system ("Shared Transport System") demonstrates how interconnecting personal communication devices and computer networks with personal and corporate Shared Transport vehicles can (1) provide revenue streams to drivers who share their vehicle, (2) provide security through the provision of track-ability and identification of both drivers and Riders, (3) provide "feeder systems" for public transit networks, (4) provide trusted networks of pre-approved providers to accommodate scheduled services for special needs cases, such as children or physically disabled persons, and (5) provide a variety of service levels for those who need more than just commuter style transport.

It is believed that an efficient use of the network system would mean that a significant fraction of those households with two or more cars would no longer require the additional car, and that a smaller portion of a national economy will be devoted to

widening and expanding a country's highway networks and importation of energy sources such as oil.

The below "Shared Transport System" accomplishes this aim by enabling private transport vehicles to serve as an extension of the mass transit system. Where no mass transit is available, or is inefficient, private transport vehicles can act as a public transport mechanism. Where mass transit is available and cost effective and timely, private transport vehicles act as a feeder network to the public transit system.

In situations such as a daily commute, predictable trends will flow from the data generated by this shared ride system, and will enable rapid and flexible route allocation that will enable public or private mass transit providers the capability to offer new transit services, such as bus routes, that are determined via stochastic measurement. A rapidly responsive and timely public transit network will result in increasing numbers of public transit riders and recreate the market parameters that are needed for mass transit systems to gain critical mass in ever changing and expanding markets.

Whereas, many systems exist for measurement of traffic over specific sections of road network (loop detection systems, video camera monitoring systems), the bulk of these systems are infrastructure dependent and typically measure the transport throughput of a given road segment, without capability to evaluate the total journey of the vehicle. It is well known, as well, that GPS systems could be used for the generation of road usage charging systems that are anticipated to come into use in the next several years. There are also systems in use, or proposed, that allow traffic speeds to be measured (and displayed on interactive maps) by the collection of data about the speed of a vehicle ("probe vehicles") to characterize the speed of segments in a traffic

network. However, the advantage of the present system is that it uses the speed, journey start and end points, intermediate destinations, spare vehicle capacity, and vehicle type characteristics of registered transport capacity to automatically generate specific information about journey capabilities between any point in the covered road network. The availability of this information is believed to be critical to the success of user acceptance of this method of transport.

A current drawback to carpooling systems, that of lack of information about the availability of services and timing between locations, can be overcome through the display of the available transport capacity.

Current mass transport systems, typically run by governmental organizations, provide schematic diagrams of the locations served by these networks, and timetables of operations. These schematic diagrams give confidence to the transport user that there is a steady flow of available capacity that they can rely upon. With this confidence, the transport user can elect to rely on public transport rather than purchase a car or second car for their household. However, carpool systems have had no equivalent, because these carpools are traditionally organized between a small group of tightly associated individuals.

The present system generates schematic and geographic maps indicating coverage areas, and is also capable of indicating typical availability and travel times at a variety of times throughout the day or week, based off a model of historic usage and travel times ("stochastic model").

Another drawback to current carpooling systems, due primarily to the difficulty of co-ordination and lack of computing and communications capabilities, is that they

assume the transport user must go to the same destination, or along the route of the transport provider. This is often suboptimal, as transport is often a "last mile" problem, and if one transport provider moved the transport user to another location where they could get directly home (using either public transport or the present system), the use of transport capacity could be made much more efficient, and vastly extend the possible reach and combinations of destinations. The present system, because of its ad-hoc nature and computational network model, can provide these transfer instructions to the transport user, and, importantly, providing graphical presentation of the reach of the transport network, giving confidence to the user that they won't be stranded.

Above was mentioned the issue of fear of traveling with strangers in public transit systems. The below system incorporates a security verifying and rating system to provide that the strangers in Shared Transport systems are trustworthy. For example, (a) bad drivers (those with excess points or driving convictions) are not allowed to participate in the system, (b) drivers with continually risky behavior are identified through a real-time rating mechanism available to riders and the in-car computer measurement system, (c) drivers who do not pick up riders are rated for their proclivity for failing to do so, (d) riders are rated for unusual behavior through a rating mechanism available to drivers, and (e) riders who refuse rides or miss rides are rated for their proclivity for doing so.

Alongside the issue of trustable strangers is the issue of anonymity. Riders or drivers may be concerned about their safety if a stranger knows how to contact them via their phone. Thus, the below system incorporates a mechanism allowing riders and drivers to contact each other through their phones without knowing the other's phone

number or full name, yet still allowing, for example, a driver to message a rider that a hat was left in the vehicle.

These and other objects and advantages of the invention will become more apparent from the following detailed description taken in conjunction with the accompanying drawings wherein:

Fig. 1 schematically illustrates a network system in accordance with the invention;

Fig. 2 provides a table of the transport capacity computing and communications components of the network system in accordance with the invention;

Fig. 3 provides a table of the rider technology components and rider demand request details of the network system in accordance with the invention;

Fig. 4 graphically illustrates the marketplace actors, their modes of access, information options and specification for operations of the network system in accordance with the invention;

Fig. 5a graphically represents the steps of the rider in using the network system in accordance with the invention (Rider Experience);

Fig. 5b provides a table of some functional options of information specification and actions of the rider in accordance with the Rider Experience;

Fig. 6a graphically represents a flow chart of the experience of a driver (Driver Experience) in accordance with the invention;

Fig. 6b presents a table of some functional options within the driver experience and subsystems in using the network system in accordance with the Driver Experience;

Fig. 7 graphically illustrates various components, subsystems and databases required for an optimal implementation of the invention;

Fig. 8a graphically represents the geographic track of a driver on their journey between a journey start point and the journey destination, shown as a dark solid line from Parnell Place to Kinsale;

Fig. 8b logically represents the driver's journey of Fig 8a with certain intermediate destination points of the driver's journey summarized, along with activity at each point and the variation of timing as expected by the shared transport active management system for that time of day on that route;

Fig. 9a shows a representation of the shared transport network at a moment in time, where active capacity is available (or expected to be available);

Fig. 9b shows a logical representation of the shared transport network displaying each stop using compact orthogonal and diagonal lines rather than geographic lines to emphasize the city center network's interconnections, to minimize distances in the rural areas and to present the network in a more readable format;

Fig 10a shows elements and data communication channels used to determine continuous co-ordinated proximity using a method where it is desired to have independent confirmation of the positional location;

Fig 10b represents the logic between elements of Fig 10 to determine and report on when and where the elements are in continuous co-ordinated proximity;

Fig 11a shows elements and data communications channels used to determine continuous co-ordinated promixity using a method where it is desired to use near-field communications as means for verifiable proximity;

Fig 11b represents the logic between elements of Fig 11a to determine and report on when and where the elements are in continuous co-ordinated proximity;

Fig 12a graphically illustrates elements of an Access Control System that would allow restricted or favorably charged access to road or parking resources depending on acceptable business rules for each type of use in accordance with the invention;

Fig 12b shows the server-side logic of the Access Control System where this authentication is, in the preferred implementation, pushed to the local device (where such information needs to be processed in real-time);

Fig 12c shows the client-side logic of the Access Control System where this authentication is, in the preferred implementation, pushed to the local device (where such information needs to be processed in real-time);

Fig 12d shows the central server-side logic of the Access Control System where this authentication is pulled from the server or cached servers (may be more appropriate in certain applications or for after-the-fact tariffs, etc);

Fig 12e shows the client-side logic of the Access Control System where this authentication is pulled from the server or cached servers (may be more appropriate in certain applications or for after-the-fact tariffs);

Fig 13 shows the logic of a communication system which proxies messages between a transport user and transport provider, providing as well an operator intervention and automatic rating adjustment to the user's trust level if inappropriate content is requested to be transferred;

Fig 14a graphically illustrates a geographical representation of an example shared transport network at a fixed moment in time, with pick-up locations and active vehicles in the shared transport network shown on a street map;

Fig 14b graphically illustrates a geographically simpler representation of the above network with all the street network segments that cannot be reached reduced out of the diagram to make it easier for the transport user to see what service is available;

Fig 14c graphically illustrates a representation of the above network with only those locations that are directly reachable without transfers, and only those vehicles that are relevant to the starting location of the transport user;

Fig 14d graphically illustrates a representation of the above network, showing the capacities and capabilities of the overall shared transport network, based on a stochastic model, which therefore is used to illustrate the capacity and capability of the network on average, at various day-parts, or using other criteria as specified by the system or by the user;

Fig 14e graphically illustrates a representation of the above network, coded with colors, icons, text, and/or line thickness to indicate the number of transfers, wait time, and potentially other factors, necessary for the transport user to reach their destination;

Fig 14f shows a representation of the above network, showing times of arrival for a given departure point, and whether a transfer was necessary from that point;

Fig 14g provides a table presentation of the above network, showing time of day output of a hypothetical stochastic model for a set journey start and end point;

Fig 14h provides a table presentation of the above network, showing a real time "Departure Board" for a given start point in a combined stochastic and real-time traffic and capacity model of the network; and

Fig 14i provides a table presentation of the above network, showing a real time "Journey Planner" for a given start location and destination location, with information including the available transport options, pricing, and arrival times using the transport method.

Referring to Fig 1., a person 10 desiring transportation service ("Rider") has a personal communications device 11, optimally equipped with location information ("GPS Phone"), and uses this device 11, optimally equipped with a software layer with transport intelligence ("Rider Software Interface"), to signal a transportation marketplace network ("Shared Transport Marketplace") 12 with a demand interest for a particular start-point ("Pick-up Point") and endpoint ("Destination Point", and together, the "Demand Route"). The Rider 10 has previously registered with the Shared Transport Marketplace 12, providing whatever registration details are necessary to contact and verify the identification of the Rider 10.

Alternatively, the Rider 10' may employ a fixed communications device 11' in order to communicate with the Shared Transport Marketplace 12.

At the same time, all vehicles that wish to provide transportation services which are in transit ("Transport Capacity") have a navigation device, typically using GPS or other location finding technology, with built-in or external data communication capability, typically using cellular phone or wide area wireless data networks ("Sat Nav Tracker"), running a software layer with a Shared Transport interface ("Driver Software Interface").

When a driver starts the vehicle ("Driver" 13), a Driver Software Interface automatically determines if the Driver 13 is engaged in a traditional route ("Supply Route"), and registers the transport capacity of the Driver 13 ("Transport Capacity") with the Shared Transport Marketplace 12. Alternatively, if the Driver is not engaged in a traditional route, the driver is prompted for their destination, or possibly is shown a list of riders possibly headed in the same general (or likely) direction as the Driver, for the Driver to consider sharing, if the Driver's destination is not known. This Transport Capacity would be then registered with the Shared Transport Marketplace 12.

The Shared Transport Marketplace 12, which is also accessible by any internet terminal, provides to the Rider 10 and to the Driver 13 information about Transport Capacity and Transport Demand. Optimally, this marketplace 12 is automatically populated with Supply Routes of public transport (buses, trains, commuter bus lines), to provide the Rider 10 with a variety of service types and prices to choose from. Additionally, given the on-demand nature of rides and personal transport, stochastic models can populate the Supply Routes and Demand Routes, in order to enable the Rider 10 and Driver 13 to make better transport decisions. For example, a Rider 10 in a subdivision of 500 homes at 8:30am on a weekday may poll for a Demand Route and see that the only options available from his house to his destination, e.g., Dublin, are a bus that leaves in 90 minutes for €4 or a taxi that could be available in 10 minutes for €35. Given these options, the Rider 10 would possibly be forced to choose a taxi. However, if the stochastic model indicates that 60 cars depart from that subdivision for Dublin every weekday morning between 8am and 9am, the Rider 10 could be provided the information that, with 90% certainty, a Supply Route would be available in 4 minutes

for €4.50. (That is, the Driver of this car in that subdivision simply has not turned on his car yet, and would only be in the subdivision for 2 minutes before leaving it for the highway. Therefore, the value of stochastic probable route offerings dramatically increases the quality of the information provided to a prospective Rider; and thus also increases the likelihood of Riders choosing to used Shared Transport in general). Means of displaying this capacity and providing useful decision-making ability to the Transport User are described in further detail below.

The Driver 13 could pre-register a specific price for a given transit route, or could change their price on-the-fly for a route to reflect the supply and demand for that Route, and the class of service provided (for example, charging more for a Rider who has excess luggage, or for direct point-to-point service by taxi transport, or for inclusion of in-vehicle wireless Internet access in places where that service is available).

Normally, however, pricing for a route would be determined by means such as per mile default rates, the number of seats occupied and other preset fixed and variable charges (zoned pricing, etc). While it is anticipated that some users of this system, particularly those Drivers with minibuses or even buses, could use it for profit-making routes, it is thought that normally the individual consumer user will simply be recovering some or most of their transport costs. Some applications may offer services without any charge or billing whatsoever.

One of the possible means, and the most likely, of determining positioning for the Sat Nav Tracker device 17 and the GPS Phone 11 is through the use of a GPS 14 or Magellan satellite as indicated in Fig. 1. Other means for determining position include

the use of cell phone towers to determine location, position look-up from WiFi hotspot data services, etc.

Use may also be made of the Internet as indicated in Fig. 1, as one of the means of communicating to and from users and drivers and from fixed kiosks to register trip requests.

The Rider 10, depending upon the mode preferred and the equipment available, can select a Pick-Up Point and Destination Point through a variety of functionally equivalent methods, including (1) calling a person or voice-response system via telephone whom they can tell verbally or through a DTMF IVR system; (2) using SMS via telephone, or e-mail, with text indication of Demand Route (i.e., "Go Home", or "Go from 12 Marlboro St to Albany Airport"); (3) via an Internet web interface or dedicated kiosk; or (4) via a GPS Phone with an intelligent and data-driven software interface.

The Rider 10, upon submitting a Demand Route into the Shared Transport Marketplace 12, could be presented with a sorted list of the transport options available, by class of service, type of vehicle, time until Transport Capacity arrives at start-point, estimated transit time to end-point, number of legs in the journey, and cost.

The Destination Point could also be specified by category or purpose, in order to increase the transport availability and options for the Rider. For example, if the Rider just wants to go to a shopping center, and there are 10 shopping centers in various directions, they could register the general category, and make their selection from the available transport options at that point. This could also be limited by brand, such as Starbucks coffee shops or RadioShack electronics stores; or, in the case of purpose,

the Rider could register a request to see a particular movie, regardless of the cineplex where the film was playing.

In the event that the Rider 10 has a Rider Software Interface on their phone 11, the Rider 10 selects from the options available to them. A message is sent to the nearest appropriate Transport Capacity. The Driver 13 is automatically guided to the pick-up point, optimally through the Sat Nav Tracker 17 display unit with verbal instructions. A Driver Software Interface determines if the Driver 13 is complying with the pick-up request, optimally based off the vehicle's movement and a period of time for the Driver 13 to automatically accept or deny the request ("Reserved Capacity").

In the event that the Rider 10 does not have a Rider Software Interface, the Rider can receive/respond to a message of available capacity via the means most conveniently appropriate to them (i.e., verbally, via text message, selecting at the Internet web site, and the like).

Confirmation is then sent to the Rider 10 via a message which optionally directs Rider to an alternate nearby optimal Pick-up Point in order to maximize transport efficiency. For example, if the Rider made a request on an infrequently used street, the Rider may be directed to walk a block or two to a Pick-up Point where Transport Capacity is available.

At any time up to the proximity alert warning period ("Three Minute Warning"), the Shared Transport Marketplace 12 will be working to optimize available capacity and services and will substitute Riders and Drivers, create multiple Riders at the same Pick-up Point to fill the Transport Capacity more efficiently, and the like. The Shared Transport Marketplace 12 will also monitor the Transport Capacity to see if any new

capacity has become available which offers a superior service and/or a lower price option to the Rider 10 (for example, if capacity is introduced which reduces the number of transfers necessary).

At the time of the Three Minute Warning, a message is sent to the Driver Software Interface and the Rider(s) with the information pertinent to the pick-up destination and the Riders. The Driver Software Interface then guides the Driver, optimally through audible cues, directly to the Pick-up Point.

At the time when the Rider needs to be in queue ("One Minute Warning"), the Shared Transport Marketplace will optimally automatically confirm from the Rider's GPS Phone 11 that the Rider is positioned within a certain proximity to the Pick-up Point ("Reasonable Rider Proximity"). If the Rider is not within Reasonable Rider Proximity, the Demand Route request is rescheduled and the Driver is informed that the Rider is not available ("Rider No Show").

At or before the One Minute Warning Time, a message would optimally be sent to indicate to the Rider to be on the lookout for the Transport Capacity, along with the specific color, model, picture and/or other identifying characteristics of the transport capacity that was arriving. If necessary, the Rider would also be provided with a PIN to verify their identity and booking.

Communications between the Sat Nav Tracker 17 and the communications network or the GPS Phone 11 can be accomplished from any one or a combination of a variety of direct or indirect data communications networks, including commonly used wide area networks such as GPRS, 3G, and other cellular communications traffic; 802.11 Wifi or Bluetooth or other similar local data communications networks (in

conjunction with, relayed and/or proxied by longer range communications networks as necessary), and other wide area networking techniques such as WiMax and other technologies that will be introduced in the marketplace from time to time.

Referring to Fig. 7, rider transactions and events are logged by the Shared Transport Marketplace (see elements 702, 704, 706, 707, 709), and if a disproportionately high percentage of Rider Demand Route requests result in Rider No Shows (for example, more than 1 out of 10) ("Unreliable Rider"), then the Rider 10 is tested for Reasonable Rider Proximity at earlier times, such as the Three Minute Warning period, and the Driver 13 will not be notified to pick-up this class of Unreliable Rider, unless the Unreliable Rider is already at the Pick-up Point, until such time as Rider No Shows passes a standard reliability as approved by the Shared Transport Marketplace.

Likewise, as illustrated in Fig. 7, a History for Driver transactions is logged by the Shared Transport Marketplace 12 (see elements 702,704,705,708,709). If the Rider 10 is waiting at the Pick-up Point and for whatever reason the Driver 13 does not pick up the Rider 10 ("Driver No Show") and/or is consistently late in picking up Riders, the Driver 13 would be measured for timeliness and Driver No Show rating ("Unreliable Driver"). Such lateness should include reasonable adjustments for consistently gridlocked locations such as city centers, as would be indicated through stochastic measurement of other Driver performance at the same Pick-up Point. The Driver 13 would likewise be expected to measure up to a higher level of performance to overcome an earlier unreliability, or the Driver 13 would be ranked lower ("Star Ratings"), matched less frequently, and/or possibly expelled from the Shared Transport Marketplace 12.

Although Riders/Drivers remain anonymous, system rankings are available, and Riders have the ability to only request Transport Capacity from Drivers with specified quality Star Ratings, and the like.

Transport Capacity optimally would have an external indicator ("Route ID Display"), optimally a bright display that is about the size and position of the passenger's side sun visor in a car, preferably mounted on the interior of the car, that optimally presents a visual confirmation of the route identification to the external Rider, so that as the Transport Capacity approaches, the Rider can begin approaching the Transport Capacity. While this Route ID 18 is somewhat analogous to the function served by a Bus Route Information display, the Route ID Display 18 has the following additional functions more necessary for a point-to-point, rider-by-rider shared transport network: Route ID Display 18 can be triggered automatically to become visually distinctive as it approaches a Rider Pick-up Point (analogous to the flashing lights of a School Bus as it stops to pick up children). As there could be hundreds of vehicles on the road that also provide Transport Capacity, this distinctive display serves the unique function of distinguishing the Dispatched Transport Capacity which has been matched to the Demand Route from other Transport Capacity which may be on the same road at the same time. In a low-tech, lower function incarnation, this could simply be a placard sticker with a fixed ID number.

As the Transport Capacity comes within a viewable distance ("50 meter display"), the Route ID Display 18 could show the particular Demand Route information and/or other Identification information (Personalized Route ID Information), for example, the readable distance ("20 meter display"), the Route ID Display could show the particular

Demand Route information and/or other Identification information (Personalized Route ID Information), for example, the Nickname(s) of the Rider(s) being picked up, the Destination Point(s) of the Demand Route(s), and the like.

As Transport Capacity approaches the Pick-up Point, the Driver would position the vehicle at the Pick-up Point, and optimally the Driver would be presented with a picture of the Rider(s) and the identification name of each Rider ("Nickname"). If the Rider does not match their picture, the Driver would choose to refuse the shared ride, and would submit, through the Driver Software Interface, the reason for denying the ride. (At this point, an operator of the Shared Transport Marketplace 12 would attempt to contact the Rider through the information provided with their registration details to see if there was a human error or to see if the Rider's GPS Phone had been stolen, in order to disable future Shared Transport Services). If a PIN were provided to the Rider, the Rider would be prompted by the driver to enter the PIN (or the driver would enter it himself), and the match would thus be verified, or the match could also be verified through the method of Continuous Co-ordinated Proximity, described below.

Upon a match-up of Rider 10 and Driver 13, Rider would enter the Transport Capacity vehicle ("In Process Journey"). The Shared Transport Marketplace 12 would then optimally verify, through the location information in the Sat Nav Tracker 17 and in the GPS Phone 11, that the Rider and Driver were indeed at the same location.

If the Driver 13 left the Pick-up Point area without picking up the Rider 10 (the Shared Transport Marketplace 12 could know this due to the divergence in location information between the GPS Phone 11 and the Sat Nav Tracker 17, as shown in Figs. 10a, 10b, 11a and 11b), the Shared Transport Marketplace 12 could send messages to

the Driver 13 and Rider 10 verifying that this was their intent; for example, if the Rider 10 had suddenly changed their mind, perhaps to go back to their house to get their umbrella. However, if the Demand Route was still needed, the Rider 10 and Driver 13 would be queried on their next action; for example, if the Rider wished to re-submit their Transport Demand request. In that case, the Rider's request would receive higher prioritization in the event there is a queue of Riders at the same location, so that the Rider would not have to return to the end of the queue.

When the Driver 13 approached the Rider Destination, and possibly at points along the way, the Rider 10 and Driver 13 could be polled for their location information to verify that the ride was progressing ("Continuous Co-ordinated Proximity" elements and methods of which are illustrated in Figs. 10a and 10b). Processing and communications could be done either locally (using software inside the Transport Capacity vehicle, in Driver Software Interface and Rider Software Interface, and communicating via near-field communications inside the Transport Capacity vehicle using software in Driver Software Interface and Rider Software Interface, via communications technologies such as Bluetooth, 802.11, RFID or their equivalents) or via network polling to Sat Nav Tracker 17 or GPS Phone 11, or a similar combination of methods and communications. The delivery of the transport service could be proven beyond a reasonable doubt through the continuous co-ordinated proximity between the Driver and the Rider according to the verification of simulaneous geographic proximity as illustrated in Fig 10b. At the end of this journey, a message would be send to Rider with the details and any billing information about the journey.

An alternative method of verification of continuously co-ordinated proximity would be to use the establishment and continuance of near-field communications as the primary consideration for determining start point of ride sharing experience, and use the breaking of this near-field communications between the Sat Nav Tracker 17 and the GPS Phone 11 (in cases other than power-off or reset of devices) to establish the verified termination point of the journey. The elements involved in this method are shown in Figure 11a, with the methodology shown in Figure 11b.

Alternately, in a low-tech (and only partially verifiable) implementation of the above, the verification of the Rider pick-up and delivery could be accomplished through the use of a PIN transmitted to the Rider, the entry of that PIN by the driver, and a lack of negative confirmation when the Rider is presented with the journey summary information.

Important aspects of the above system that were not mentioned in the above narrative: Trusted Drivers and Trusted Riders are a large part of the viability of any Shared Transport System. In order to improve on the quality of this trust, and to provide security assurance to Riders and Drivers, certain behaviors would prompt alert conditions, especially those related to security or safety. For example, when a Transport Demand is established which results in an In-Process Journey which is terminated before or at a different point than the established Destination Point, this information is logged and could further be used to generate, for example, automated phone calls to verify the intent of the Rider & Driver, including prompting the Rider or Driver for verification of pass codes ("Favorite Color") which would be established upon user registration. If a Rider or Driver was unable to verify their Favorite Color, human

intervention and responses and queries (from Network Operators, optimally, at a Network Operations Center (15), as shown in Figure 1) could escalate the situation response as appropriate, even initiating vehicle tracking and dispatching security personnel if appropriate.

Other methods of assuring that the Shared Transport System developed and maintained good social and safety standards would be a comprehensive ratings system. At the end of each journey, as the Rider leaves the vehicle, they are messaged with the details and cost of their journey on their GPS phone 11 (via SMS, e-mail, or via a special application or web page, for example). This message also could prompt the Rider to rate the Driver, for example, with 1 to 5 stars, on one or more scales (safety, comfort, social factors). A sufficiently low rating (for example, 1 star), could be used to automatically "blacklist" that Rider from ever matching with the Driver again (using the Matching Engine 701, as shown in Figure 7, in conjunction with the rating systems of the Transport Provider Management System 705 and the Transport User Management System 706).

Likewise, at the end of the driver's journey, as they stop their vehicle, they would be automatically prompted to rate the Rider(s) that they had carried on their Supply Route. Using the same or similar criteria, they would provide their feedback to the system about the rider. A sufficiently low rating would probably also prompt more requests for information, such as why the rating was so low.

Such an automatic feedback system would help police the network for bad behavior and thus encourage more responsible behavior on the part of everyone using the network.

The network system may also be provided with the following capabilities.

Real-time Self-correcting network redundancy elimination:

System feedback, in real-time, to a driver that another public vehicle or Shared Transport vehicle is available within set criteria (ie., with destination < 1/4 mile of theirs, with 0 or 1 transfers, with maximum of a 5 minute wait). If interested, the driver would receive the location/directions to a car park that is in-route.

Period benefit cost/time analysis:

System log periodically (weekly/monthly, for example) compares transit network availability with actual usage data from an in-car navigational unit and provides a trip-by-trip summary of which trips would have benefited through use of the Shared Transport Marketplace, what the cost/time savings would have been if the user had dropped their car at a Park & Ride; also, what the EARNINGS would have been if the user had picked up available fares (plus/minus 5 minutes); also, generic trip data about the average speed, journey time, CO_2 generated and gas consumed.

Additionally, network capacity demand can be used to calculate any possible public subsidy or tax credit benefit that can be awarded to potential drivers in exchange for their availability on their normal transit routes.

Identity Verification system:

Personal communications device could show the picture and name identification of the driver responding to pickup request.

Service Provider (Driver) display shows the picture of the Rider 10 (service requester in case of cargo or concierge) requesting pickup service.

Rider/Driver Proxy Messaging System

Normally Riders and Drivers would have no need or use for contacting each other directly; however, there could be a few circumstances where it would be useful for one to contact the other, such as in the event of a lost or found item in a car, or perhaps in certain rare cases where they need to reach each other to arrange exact transport details. Normally these users of the system may desire to keep their contact details and full identity information (such as name, e-mail or phone number) private.

Fig. 13 shows a message proxy system that would enable communications between members of the community without losing this identity, and also, importantly, disabling any inappropriate content or contact between community members as well as adjusting the rating of any community member as necessary.

In normal usage, the system would function as illustrated in Fig. 13. For example, if a Driver 13 identifies lost items left in their vehicle, they could choose a function on the in-vehicle device (or via a web page), to send a message to the Rider 10. The system 12 would then receive this message 131, evaluate the content for appropriate content 132, and if it could automatically determine this, would redirect the message 134 on to the Rider 10, coding the message with a unique identifier so that it would know to respond to the Driver 13 if the Rider 10 responds. If the system could not automatically approve the content of the message, the operator would review the content 136, and if the content was OK, the message would be passed on, but if not, the message would be rejected 138 and the Driver may receive a rating adjustment 137 and message to reflect the inappropriate use of the system. If the Driver's misuse of the system was sufficiently untrustworthy, the operator may choose to restrict the Driver's messaging

capabilities, blacklist the Driver 13 for future matches with this Rider 10, or make other adjustments to the Driver's ratings.

The network could generate near real-time messages using SMS, e-mail, or voice messages for example, or could, using a similar technique, proxy a phone call if desired and appropriate.

Friends & Family Transit network

Riders and Drivers can restrict Transport Capacity and Transport Demand matches to operate only inside closed communities of members, if desired. Such closed communities could be, for example, employees of a company, students and parents at a given school, or membership in a given social or sports association. These closed communities could be defined inside the various interfaces available as part of the Shared Transport Marketplace 12, including web pages, or could in fact be authenticated from other means, such as all those members of the Shared Transport Marketplace who had e-mail addresses ending in @mycompany.com or @myuniversity.edu.

The Network System could also allows users to tag drivers or riders as "friends and family" post ride, over the web in displays of private network drivers, or through e-mail opt-in.

Existing internet social communities could be used to instantly pre-populate the social communities that the user would want to make their Transport Capacity or Transport Demand known to, to help advertise and expand the reach of the Shared Transport network, or to match exclusively, or preferably, within the social community.

These "friends & family" designations would become part of the criteria used to rank available drivers and riders, where the rider or driver has a preference. Similarly, a rider or driver can tag the other as "not again", which could rank these alternatives lower or completely "blacklist" a Rider or Driver from matching directly with each other in the future.

Scheduled rides confirmation:

For rides which are pre-scheduled, software on the user device or through the network software will offer periodic warnings and require confirmation from a Rider a preset advance notification time (say 15 minutes) in advance of pickup, then again a preset nearby notification time (say three minutes) before pickup. The Rider has the option to delay or cancel pickup. The Driver is not routed off course or dispatch information sent until and unless rider confirms such pre-scheduled intent.

Advantages of shared transport system and service network

The invention thus provides a system that has the following advantages which have benefits to the area of public transport:

A. A matching system for transportation capacity with transportation demand. 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.

B. A characterization method for summarizing transport capacity for individual drivers. Vehicles delivering transport services to commuters (trains, buses, planes) have long used the characterization of "stops" to summarize their transport network services in a way that the consumer could relate to (for example, the #6 subway line,

stopping at 34th St, Grand Central Station, 49th St, etc. However, for an individual driver on their personal daily commute, the typical characterization of a route is the start and end address. This characterization makes the matching of a driver journey difficult for a passenger. The introduction of computers or GPS systems to the problem doesn't necessarily make the solution any easier, as computers and GPS systems will often just reduce an address down to its geographic co-ordinates (latitude/longitude), or represent a drivers' route as a stream of latitude/longitude points.

The system herein described provides an automatic way of converting the computer's representation of a driver's route into a format which is more usable for further analysis and presentation. Figure 8a graphically illustrates an example driver's journey from their work location (Parnell Place, in City Center 802) to their home location (Kinsale 803, in the rural areas). The GPS unit of a car, when recording (or calculating) the driver's exact route, would represent this journey as a a set of co-ordinates. However, for 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. This network of stops can, for example, be pregenerated from existing databases of stops from existing bus networks, entered using traditional GIS systems, or in fact created by the in-vehicle system 17.

The route of the driver's journey is shown in Figure 8a as a dark line (801) moving from the north of the map towards the south of the map. The system calculates the places where the route of this line intersects a stop node, and thus can present the journey at the end of the route in the format of a very useful and concise set of major

stops, rather than an incomprehensible list of addresses or geographic co-ordinates. For example, the driver's route 801 can automatically indicate that the path of this route is from Parnell Place 802 to Cork Airport 804 to Farmer's Cross 805.

Furthermore, once the geographic representation is abstracted to stop nodes, it is possible to show the driver's route in a variety of alternate presentations, such as the presentation shown in Fig 8b. Here, we see the journey described with an abstraction of the journey start and end-points 811, where the start point is characterized by the town name; and we see a graphical presentation of boxes summarizing activity at each stop along the journey; and we can also see a level of characterizations. A busy city route may actually have many dozens of stops it could theoretically stop on if there were people waiting at the stop, but perhaps only the most major stops (as coded separately using operator intervention or data entry, for example) would be shown in order to present the information more clearly, The major stops of a route, as shown in 817, may not necessarily even include the start point or end point if they are not where the likely traffic would be, for example.

As shown in the elapsed time between stops 816, it becomes manageable to represent travel times between nodes using driver's journeys when organized as a stream of stop nodes. Likewise, stop nodes makes it easier to characterize capacity and frequency of travel between locations.

As graphically illustrated in Figure 9a, using the automatically generated driver's stop nodes to measure and predict capacity, it is also possible to show the real-time transport capacity of the shared transport network, and/or the predicted capacity from the stochastic transport capacity network model. This particular representation shows

the same network model as Figure 8a, but trimmed to only show those segments and nodes in the network that have active transport capacity on them at the time the user displays the model. This method of graphically presenting the reach of the transport network dramatically improves the confidence that a user would have in the shared transport model, knowing that they can get from one place to another, and knowing, through the stochastic model, what the availability would be at a different time of day.

Traditional transport networks have known this for a long time, of course, and so maps of network capacity have long been available on public transport systems, although they have not yet been applied usefully to carpooling systems or this invention of public shared transport. Traditional public transport networks have also sought to make their transport more understandable by simplifying the geographic maps into quasi-geographic schematic representations that enhance readability and information display by distorting the geographic accuracy in certain manners (using only orthogonal and diagonal lines, for example). The system could generate schematic maps automatically (several such programs and techniques are known in academia) using as its source the dynamically created transport network as generated by the real time and/or stochastic shared transport node model. An example of this schematization of a shared transport network is shown in Figure 9b, using the model of the 9a network.

C. An active monitoring system for generation of usage/demand data for point-to-point routing of participating vehicles. The system looks for overlaps of capacity and seeks to eliminate redundant capacity (within certain distance criteria, transfers criteria and timing criteria) by suggesting route changes or route termination. For example, if five cars were on the route to the same destination, the system could inform the cars

that the quality of shared transport service on their route was high, and could suggest that one or more cars pull over into a Park & Ride (for the Driver to become a Rider in another vehicle's car, as it would be far more economical than driving himself in a single occupancy vehicle to the same destination). Alternately, this monitoring system's data reporting and analysis can be used to suggest the generation of new routes, or on-the-fly routes, for public transport when enough demand capacity exists to create transport routes which bypass crowded city centers or, minimally, can skip stops on an existing route (generating express routes by selecting appropriate Riders to get on the transport capacity).

D. An active monitoring system for generation of traffic flow data; combined with a central information repository, gives real time network for traffic flow throughout a metropolitan area. . The system as described has the capability to enable any of the Transport Capacity vehicles to act as "traffic probes", reporting on throughput and delays in traffic. The system would use this data internally in order to better predict arrival time of Transport Capacity at the Rider's Pick-up Point, but this data could also be shared with the general transport community at large as a substitute for other means that they may normally use to determine road traffic (loop detectors, video cameras, traffic probes, etc).

E. A system to generate matches between route capacity and timing and Transport Demands, from usage data. Regular traffic between nodes and subsets of nodes is gathered by this system continually (Fig 7, elements 709, 710, 711, 712). The system 12 can thus tell a user who wishes to go from one point to the next how to best get there using the available transport capacity via it's matching engine (element 701).

A graphic illustration is shown in Fig. 14a. In this case, a Transport User 1401 wants to go from the departure point 1406 to the arrival location 1409. Active Transport Capacity 1402 and 1403 both pass by 1406 (as known by the system by the declaration of their Supply Routes. Whereas Transport Capacity 1402 has registered a route of 1405, 1406, 1407, 1408, Transport Capacity 1403 has registered a route of 1410, 1404, 1406, 1407, 1408, 1409. All other considerations being equal, the matching engine 701 would thus match the transport request between stop 1406 and stop 1409 using Transport Capacity 1403.

As other vehicles regularly travel between the nodes 1410, 1404, 1406 and 1409 at this time of day and day of week, the system would be able to reliably calculate how much time will elapse until the vehicle has arrived at the Transport User 1401's pick-up point, and would start the notification processes as detailed in the system appropriately. The system could also tell the Transport User 1401 at what time they would arrive at their destination 1409.

If Transport Capacity 1403 did not make their service available to Transport User 1401, the geographic scope of the search could be widened and the User could be alerted that an option exists that would get them to a drop-off location 1408 rather than the desired 1409 drop-off location, and the user could choose to accept this transport instead.

As illustrated in Fig. 4, Transport Capacity and Transport Demand will have a variety of providers (402) and users (403), with a potentially complex set of requirements and preferences (404, 405). The matching engine (401) provides the

Transport User with a means to display and/or automatically book the best options available.

F. Display methods to show available transport capacity and options to Transport Users. While no working system currently exists for the kind of real-time shared transport envisioned by this invention, the closest computing systems that perform a similar function are those car-sharing or carpooling schemes which attempt to match riders by destination and origin, for the purpose of establishing one-time or regular commuting matches. A major weakness of current state-of-the-art systems for carpooling is the limited representational capability of these systems, as it is usually difficult to find if there are any services on offer in a given neighborhood or area, to a given neighborhood or area. Current state of the art systems assume that no transfers are possible between shared transport providers or public transport, and work best when all of the users of the system have a common shared destination or origin (for example, commuters to a given campus, students at a university, or (when trips are to be made across country), members of a given urban area). The present system, however, generates a number of representations of transport capacity which will give encouragement to transport users and providers that service is possible using the present system.

From the live usage data of the system, maps can be presented which show the real-time capacity of the system. As graphically presented in Fig 14a, live maps could be displayed which show the real time transport capacity of the network and the stops in the network. However, these maps by themselves do not provide a sufficient quality of information to give confidence in the likelihood of a user being able to get from their

start point (1406) to their destination point (1409). Fig 14b demonstrates a more useful presentation of the street network, which begins to inform a user how they would use the shared transport network to reach their chosen destination, or what kind of service availability they would have using the system.

Until a certain critical mass is achieved in a given geography, transfers to non-commercial private transport vehicles will be limited, and so it is important to also be able to show representations of the transport system showing all possible destinations where no transfers are necessary. This is graphically illustrated in Figure 14c.

G. A prediction system to generate available route capacity and timing from summary usage data. Traffic data is essentially stochastic, and therefore this system provides predictions of transport capacity between points in a way that can be useful to transport users in matching their transport needs and in providing them with useful information that makes them grow to trust the system and make better transport decisions. . Because the nature of this system is extremely ad-hoc, few bookings will be matched far in advance for a specific transport capacity. The best capacity for the journey is the capacity flowing by the transport user as they need it. While this approach enables a large number of advantages, the central weakness to this approach is in the uncertainty of a booking, both in terms of its timing and the provider of the service. Therefore, it is particularly important that this system provide excellent information services which overcome these uncertainties.

As mentioned above, usage data for this system is continually gathered. Beyond the use of this real-time information for the benefit of matching is the categorization of this usage data into a transport model (Figure 7, items 701, 702, and 702). This

transport model would contain day part information for traffic capacity flows. Thus, even if a transport demand were made that did not currently have transport capacity available, the model would be able to stochastically determine the likelihood of service, at any part of the day. This is graphically depicted in Figure 14d, where the historical availability of transport capacity is represented by lines in the street network. Of course, instead of using a street map presentation of wait times or capacity, a logical schematic of the network amongst transport stops could also be formatted to similarly display timeliness and throughput. As shown (1434), the map or schematic could be shown for any day or time period.

In many uses, of course, a tabular representation is preferable and augments the understanding of a network, and from the generated capacity model, tables such as that presented in Fig 14g would be generated to approximate the appearance of timetable schedules of traditional transport providers, such as city bus or subway networks. These timetables would of course be based off the ad-hoc transport capacity as driven by transport providers over time. These forms of definitive and statistically useful information will help transport users gain the confidence in the viability of shared transport, as well as be aware of better options that they may want to consider. For example, referencing the combination of Fig 14g for tabular data and Fig 14e for graphical presentation of a given transport user 1449, we can see that the tabular presentation shows that from the start point 1471 of the transport user (1441 on the map), to the destination point 1472 (1442 on the map), the general availability would be better at location 1443 (1473), where the average waiting period 1475 being less than

that at location 1444 (1474). However, for the most common commuting hours (7:30-10am and 4:30-7pm), the availability is similar.

Of course, in some cases drivers could be guided off their normal route to pick up passengers, and the system would be capable of doing that, but in most cases, it would be more desirable to pick up passengers without inconveniencing or disorienting the driver.

It can be readily appreciated how the availability of this information would enable users to make better commuting choices. In the table shown in Fig 14g, only two stops were shown and the rows were broken up by time of day and subdivided by stop; naturally, this information could be extended if desired into a larger array, or shown in a format of stops as columns, stops as rows with cells displaying average frequencies; or other typical timetable schedules.

The directionality of the transport traffic is also a major factor in the display of this stochastic information, and as shown in Fig 14e, the reverse route for a commuter transport user 1441 when returning home could appear very different graphically, depending on transport capacity usage history, from the opposite direction. Fig 14e also shows how a combination of historical data plus real-time data can be used to provide a blend of information to the transport user. This presentation of a blend of statistically generated timetables as well as real-time presentation of capacity would also be essential to the operations center staff in helping transport users understand their options as well as influencing any marketing or operations plans they would have to expand the network, and could also be used to help determine automatically if there

are any unusual activities such as road closings or traffic jams, where the historical data and the real-time data varied significantly.

Using this system it can be extremely useful to display the combination of statistical transport models with real-time information in tabular format. Fig 14h graphically illustrates one form of a "departure board" for a shared transport network. Departure boards, as seen often in airports, train stations and other transport hubs, provide the answer to the question "where can I go from here?".

Shared transport would provide a new opportunity for departure boards to be used in corporate campuses, lobbies, and other places where public transport has traditionally underserved the population. Shared transport departure boards could combine public transport information, private shuttle services, and shared transport services. While a preferred form of a departure board would be a separate physical display, it is of course possible to have departure boards take the form of web pages, a frame within web pages, or special "widget/gadget" style small programs that people could run on their portable phones or personal computing devices.

However, in the case where the transport service is not provided by scheduled services, the provision of a statistical transport model in conjunction with a real-time network is essential to providing this information, particularly in cases where the transport is leaving from within a campus (or housing subdivision) and moving out of range quickly. In a case where 15 vehicles leave a subdivision and head to a city center between the hours of 7:30 and 8:00am daily, it could be approximated that one vehicle moves between this journey's start and end points once every two minutes.

Consider again Fig 14e, where a transport user 1449 would like to find out what the availability of capacity is between start point 1441 and destination point 1442. Some transport capacity 1448 is positioned in a parking garage near the city center and also intends to go to destination 1442. As the transport capacity 1448 turns on their vehicle, they may only be within the area close to start point 1441 for a minute and two. As a result, if most of the transport capacity were coming from similar location, the transport user 1449 may not see the possible destinations until a few moments before they became available for matching, if at all.

As departure boards also serve the function of advertising the availability of transport options, the shared transport departure board would be under-representing the possible answers to the question "where can I go from here?" unless it includes a statistical model in the presentation of the departure board. Fig 14h shows a table combining real time network information with statistical network information. Here, Fig 14h is a tabular representation of Fig 14e, and the transport user 1449 wants to go from 1441/1481 to 1442/1482, Estimated departure times 1485 show two forms of numbers, perhaps graphically displayed with different characteristics, with real-time information for actual vehicles shown as indicated in 1486 and statistically established timing shown as in 1487.

Note also the departure board format would display major intermediate journey nodes 1488, as discussed above and calculated and characterized automatically by the system. Oftentimes, an end destination 1485 is not known by a viewer, and the intermediate points 1488 are the points of interest. As the purpose of the departure board is to improve the perception and communication of transport options, the

characterization of the path of stops , described above in the description of Figures 8a and 8b, further improves the transpor user's information experience.

H. A journey planner for a shared transport network. Journey Planners, which show best available routes between start point 1491 and destination point 1492 as well as cost and schedule information, are a well-known concept for public transport, but have not been used to describe non-scheduled transport services. As shown in Fig 14i, the Journey Planner would operate similarly to existing public transport network journey planners, but would also incorporate the statistical model of available shared transport 1495, and real-time shared transport information to provide best possible combinations between 1493, 1494 to provide the user with the widest range of useful options.

I. As the Shared Transport network expands, more transport capacity will become available regularly on certain routes. The system as described would be fully aware of which routes have underutilitized capacity, and would also be aware of transport users previously registered transport demands. Whereas normal public transport networks don't appear to have any awareness of who is using their services, the present system would communicate with its transport users to let them know about expanded hours of quality service (for example, less than 10 minute wait for services), and/or expansions of service into new outlying areas for that user, etc.

J. Governmental agencies and local authorities have long sought to encourage the use of carpooling, using incentives such as HOV (high occupancy vehicle) lanes, discounted tolls, and tax deductions for the use of public transport means. In the near future it is anticipated that further incentives may be brought to bear, given the extreme shortages of oil which are expected in the years of 2011 and beyond, as well as the

increased awareness of global warming. In addition, companies and organizations who are pressed for parking spaces are highly motivated to try to get their workers to carpool, and sometimes provide free or premium location car parking spaces to those who carpool. To increase the effectiveness and efficiency and compliance with these measures, it is anticipated that automated means may be desirable to authenticate the use of the vehicle in shared transport applications, as shown in Figure 12a.

In this access control system, a vehicle 1209 would approach an "access gate" 1208, for example, a toll booth 1204 or a parking lot access gate 1206. Whether the system was a server push or client pull system (Fig 12b, Fig 12c, Fig 12d, or Fib 12e), the information about the Shared Transport status and business rules would be processed at the Access Server 1207, and, if access was permissible, the gate 1208 would be lifted, allowing free or discounted access to the resources of the company or governmental agency. In fact, no gate 1208 would necessarily be required, as the system could be a tolling system which simply charges a different rate depending on the occupancy of the car, etc.

Throughout the year that the car is used, the usage of the car could be measured in terms of the percentage of time it was used for shared transport, and this could, if it passed a certain threshold, qualify the transport provider to benefit from certain tax benefits, carbon credits, and the like.

K. A trust system for managing networks of Transport Providers with varying trust characteristics. As shown in Fig. 7, the Transport Providers/Drivers are managed by a system 705 which considers their ratings (as provided to the system by an Activity and Event Manager 702) and their community memberships 713. This enables, as shown in

Fig 4, the Matching Engine 401 to consider matching transport demands with a variety of Transport Providers 402 and Provider criteria 404.

L. A self-correcting trust system for feedback of Rider response to Driver performance. As shown in Fig.7, when a Journey has been matched between a Transport Provider 720 (Driver) and a Transport User 721 (Rider), the Journey is actively managed by the system 704. As part of this process, the Rider is prompted to provide a measurement of trustability to the Driver. This event 702 is then passed on to the self-correcting trust system within the Transport Provider Data Management system 705.

M. A self-correcting trust system for managing Driver preferences of various Riders. Likewise, as shown in Fig 7, the Transport Provider is prompted to provide a measurement of trustability to the Transport User. This event 702 is then passed on to the self-correcting trust system within the Transport User Data Management system 706.

N. A modification of the above system to allow it to be used to transport goods and merchandise by having the Transport User send packages instead of using the system for personal transport., but otherwise using a similar Shared Transport Marketplace for matching transport need and rating of providers.

O. The Driver can also be driving a bus (whether a private or public transport service), a taxi, and the like.

Referring to Fig. 2, the transport capacity computing and communications components of the network system include components for (1) location and direction, many of which can supplement the locational accuracy where GPS technology is not

functional or is less desired (for example, underground transport forms would be more likely to use fixed position "markers" to determine the location of the transport capacity, and in the same underground transport situation, the GPS Phone would ideally be equipped with 802.11b technology and a reference database of positional location of underground wireless 802.11b or similar local wireless networking broadcasting devices in order to determine location and facilitate data communications); (2) Far-field communications list some of the communications methods used to facilitate interaction with the Shared Transport Marketplace, including the possibility of using voice or IVR interaction with a system operator rather than data networking; (3) Near-field communications detail methods would could be used to communicate between Rider and Driver computing/communication devices (preferred in order to reduce data congestion and airtime charges); (4) supply routes include those information sources and database of commonly used and widely known location names that will feed the Shared Transport Marketplace with available and potentially available transport capacity from the Driver and public transport sources; and (5) Demand route, which includes several possible methods of requesting a route by a Rider. The devices and inputs used by each of these five components are as listed.

Referring to Fig. 3, the rider technology components of the network system include components for (1) Location, that is, several methods for determining the exact position of the Rider for communication to the Shared Transport Marketplace; (2) Location transmission, that is, the interface that the Rider uses to transmit his Demand Request; (3) Computing Component, that is, the device that the Rider uses to transmit his Demand Request; (4) Internet, that is, either the broad Internet or a limited Intranet

which enables the data transmissions between the Shared Transport Marketplace and the Rider; and (5) Demand Route, which includes many of the databases and the pricing and membership models which enable a given Rider to take advantage of a variety of possible types of Transport Capacity. In addition, the devices and inputs used by each of these five components are as listed.

Referring to Fig. 4, the multiple uses and operations of the network system are shown graphically and include components for (1) Supply Side Routes, which include the databases of providers of shared transport services, (2) Demand Side Routes 407, which include a subset of possible methods for a Transport User 403 to request a Route, (3) Request Methods 408 and Availability Methods 406, which include a variety of methods which could be used to communicate between the Rider, Driver, and the network system. The Matching Engine 401 would consider the availability of transport capacity, provider criteria 404 and transport demand criteria 405 in providing ideal matches for the request.

Referring to Fig. 5a, the experience of a rider in using the network system are shown as a flowchart and are believed to be self-explanatory, as they have been described in text above. Use of specific references to time, ie., "Three Minute Confirmation", are completely configurable by the user and would be changed either automatically or manually to reflect different modes of transport and interchange or uses of the general system. The accompanying table, Fig 5b., provides further specifics on data and usage of the functions in the flowchart of Fig 5a. The experiences may stored in memory and printed out.

Referring to Fig. 6a, the experiences of a Driver in using the network system is shown as a flowchart and are believed to be self-explanatory, as they have been described in the text above. The experiences may stored in memory and printed out. The accompanying table, Fig. 6b, provides further specifics on data and usage of the functions in the flowchart of Fig 6a.

Referring to Fig. 7, the Shared Transport Marketplace will be composed of a number of computer servers networked together to perform the data and communications functions as specified. Communications interfaces 723 will enable the system to communicate automatically between other automated computer systems, to individuals via computer interfaces, to individuals via telephonic interfaces, Sat-nav units, and the like.

Continous Co-ordinated Proximity System

In order to improve the user experience and the rapidity of verification of transport user ID and thus reduce the delay of loading people or goods into a transport vehicle, it would be desirable to have means to quickly verify the identity of the transport user for the transport provider, in order to know that the passenger is a paying and trustable passenger, as well as to confirm the drop-off location of the transport user.

Referring to Fig. 10a, the elements necessary to determine if there exists continous co-ordinated proximity are the monitoring and verification system 1001, a Transport User Device 1002 and a Transport Provider Device 1003. Each of the devices 1002 and 1003 would need to have a means to determine their location. Additionally, for the "independent verification" method, there would need to be far-range data communication means 1005 and 1006. Optionally, there can also be

communications between the devices 1002 & 1003 via a far-range or near-field data communications means.

Referring to Fig. 10b, the logic necessary for a central server to determine if there exists continuous co-ordinated proximity by the method of independent verification is shown in the flowchart.

Referring to Fig. 11a, the elements necessary to determine if there exists continuous co-ordinated proximity via verification of near-field communications link are the the monitoring and verification system 1101, a Transport User Device 1102 and a Transport Provider Device 1103. Additionally, for this "near-field communications verification" method, there would be near-field data communication means 1104 between devices 1102 & 1103. Optionally, there can also be communications between one or more of the devices 1102 & 1103 via a far-range communications means 1105 or 1106. In the near-field communications method, one or more of the devices 1102 and 1103 need to have a means to determine location. The logic for the determination of continuous proximity, as shown in Fig 11b, would run on either device 1102 or 1103, though more likely on the Transport Provider device 1103. The communications with the Monitoring and Verification system 1101 would be between the device running the logic as shown in Fig. 11b. In the event that the data does not need to be communicated real-time, or in service areas where there isn't continuous data communications capacity, the logic system could cache the start and end positions of the transport service between devices 1102 and 1103, or a plurality of other such transport services, and when the logic system does come into networking contact of Monitoring system 1101, the entire cache could then be transmitted.

Using such a cache system would have the following benefits: reducing the data communications expenses by sending less transmissions, increasing the areas of service to include those areas where data communications is unavailable, and, where no far-field communications are needed at all, reducing the hardware requirements of a continuous co-ordinated proximity service. In this case, the transport provider would have to, perhaps daily, come in contact with a near-field communications network.

Hardware and Software Components

Transport User Device

Optimally, a GPS phone with an ability to display graphics, serving the primary functions of enabling Transport User to book travel, receive updates on travel information, confirm bookings and receive activity receipts, provide proof of identity and location, as well as update trust ratings on providers in the network.

Transport Provider Device

Minimally, a GPS phone with an ability to display graphics. Optimally, a personal navigation device or built-in sat-nav unit, serving the primary functions of enabling transport provider to advertise spare transport capacity, route the driver to pick-up locations, confirm or cancel bookings, provide proof of identity and location, update trust ratings on transport users and suitability of geographic locations.

Network Operations Center

Computers and Display systems networked to the Shared Transit Marketplace Server, with telecommunications capacity for call center and operations staff, serving the primary functions of enabling the booking of travel and conveyance of information about network services, customer inquiries, management of physical and logical and

transportation network capacity and organization, and the business management of transport operations.

Shared Transit Marketplace Server

A network of computers attached to the Internet and telecommunications services. Providing automated functions for the Network Operations Center, Transport Users and Transport Providers, including matching demands, refining trustability ratings, optimizing capacity and efficient throughput of the system.

Characteristics of the Shared Transport Marketplace Method

a) providing an electronic registry of capacity containing a plurality of geographic locations, where one or more electronic devices in each of a plurality of transport vehicles registers the spare transport capacity and location information of the vehicles via wireless data communications to the registry of capacity,

b) providing an electronic registry of demand, where the transport demand needs of a plurality of individuals or items is registered by a plurality of means to the registry of demand by the transport user,

   i. where such plurality of individuals or items can include registration via Internet web pages and Internet applications, via SMS messages, via e-mail, via IVR systems, via telephone operators, via applications or web pages running on handheld wireless devices such as location-aware phones, and the like

   ii. where such demand can be limited to a set of rules not just between start and destination locations and needed capacity of seats or space, but also

include such limitations as requirements for the transport provider to be of a certain level of experience, gender, or membership in certain closed communities, or for the transport capacity to have certain conveniences or services, such as baby seats, wheelchair access.

(a) where such closed communities may include persons associated with a certain company, university, social group, or Internet social networking community, for example.

iii. where such demand can include destination locations that are specified by purpose of journey or type of destination, increasing the availability and timeliness of transport options to the transport user.

(a) where such type of destination could be specified to be any typical consumer or business category, such as supermarket, shopping mall, coffee shop, or a specific brand of these,

(b) where such purpose of journey could be one or a combination of factors, such as to see a specific movie title, regardless of the cineplex where it was showing.

c) providing a central processing capability in each or in a plurality of geographies to provide one or more matches of the transport capacity with the transport demand,

i. according to any specific limitations the demand may restrictively preset, and any predetermined trustability parameters set by the transport demand and the transport capacity.

(a) including trust parameters, such as the sex or experience of the transport provider or transport user

(b) including demand requirements, such as the availability of a child seat or wheelchair access

(c) including trust parameters restricting matches to those within a set of pre-approved transport providers or transport users from a given company

(d) including trust parameters restricting matches to those with membership in a pre-defined social group, club, or Internet community.

(e) including trust parameters restricting matches to those with sufficiently high transport community ratings,

1. providing a self-correcting system to the community of transport capacity providers and transport users to continuously update transport provider and transport user ratings,

d) providing a means of automated communication with the transport capacity to confirm the availability and willingness of the capacity to transport the demand; and likewise providing a means of automated communication with the transport demand to confirm the booking details of the capacity;

i. providing a means to direct the transport capacity to the geographic position of the transport demand(s), and automatically redirecting the transport capacity to the meeting point location of the transport demand if transport capacity needs to be re-routed,

ii. describing booking details to the transport demand of the transport capacity including such possibilities as, the time and location of the pickup along with identifying characteristics of the transport capacity and booking confirmation information.

(a) where, depending on the timeliness reliability rating of the transport user, notice of the transport capacity must be confirmed at an earlier time than otherwise required.

e) providing a means of tracking the pick-up and delivery of the transport demand by the transport capacity

i. automatically re-allocating and rescheduling a missed pick-up to other available transport capacity in the registry of transport

ii. providing a registry of missed pick-ups which is updated whenever the Transport Provider fails to pick up the Transport User who was in position at the Transport Start, where the missed-pick-up registry is used as a factor in the rating system for the transport Provider.

iii. providing a report of missed pick-up to a network operations center to provide for manual intervention if necessary.

iv. providing a means of verifying and vetting the truth and authorization of the transport provider and the transport user

(a) where such means of verification of the pick-up of the transport capacity by the transport provider can be accomplished by methods including

1. entry of a PIN (personal identification number) provided by the transport user to the transport provider and entered on the in-vehicle system.
    1. where such PIN could be generated automatically and communicated to the transport user upon confirmation of the transport capacity via automated communications (SMS or e-mail or IVR) in the booking details.
2. near-field communications between the in-vehicle system and the transport user's personal communications device (or other ID, including payment ID), verifying the transport demand's physical presence.
3. automatic determination of continuous proximity between the transport capacity's geographic location with the transport demand's geographic location, by periodic confirmation by the central tracking system of the location of the in-vehicle device and the personal communication device.
4. interaction, either through data or through verbal communication, between the network operations center and the transport provider and the transport user, using predetermined pass codes to confirm the identity and testimony of the transport provider and the transport user.

2. providing the transport user's proof of delivery to the destination location by the registration of route positions and timing of the transport

capacity via automatic communication between the in-vehicle device, by the confirmation of the transport provider and the transport user.

1. where the confirmation of the transport provider and the transport user can be automatically provided by electronic devices, or by the co-ordinated proximity method, or by the breaking of near-field communications between the transport user and the transport provider, or by a services message receipt which remains uncontested at the destination location.

Characteristics of the network operations center

f) bringing service irregularities to the attention of operations personnel,

g) alerting such personnel to events from missed pick-ups to occasions, such as a transport provider who is off-route from the destination location of the transport capacity ("errant vehicle").

h) providing automated escalation of response, depending on safety and security preferences and needs, whereby potentially dangerous situations are rapidly escalated for manual intervention of operators at the network operations center or security or public safety personnel,

i) providing an ability to continuously track the physical location of an errant vehicle and the transport capacity.

j) providing the capability of booking services to those who don't use more automated means, with the network operations personnel booking the request, or answering requests for information, for the telephone caller.

Additional Secondary Registry of Transport Capacity

An additional secondary registry of transport capacity may be added to the system

-to allow transport capacity to see both the shared transport network data and network data of public and private transportation network operators,

-to show the transport user whichever network services best fits their demand

-to book transport capacity on the shared transport network or with public and private operators.

i. providing similar notification and cashless transaction benefit to users of both public transport and shared transport.

(a) where the public or private transport operator has an existing system with PIN authorization, or an integrated ticketing system compatible with the shared transport system, providing necessary authorization and PIN to the transport user.

(b) where the public or private transport operator has no existing system for PIN authorization, providing the transport operator with the in-vehicle device, or a commercial version of the same.

ii. enabling the benefit of reduced tax consequences for those governmental entities that allow pre-tax deductions or credits for transportation expenses as detailed.

The transport capacity can be registered automatically, by simple movement of the vehicle indicating the direction and destination of the transport capacity:

- where the destination of the vehicle is predetermined by a route or schedule pre-registered by the transport capacity;

- where the destination of the vehicle is determined by comparing its position and timing to predetermined schedules associated with that vehicle

The usage of the system by transport providers and transport users can be tracked:

- providing a registry of service credits provided by transport providers and transport users, including,

i. interchanging services with all other members of the network, providing documentation to eliminate taxable consequences where local laws permit,

ii. reducing effective cost for the transport user where local laws permit by providing the transport user with an authorization system to credit the service credit system from their pre-tax income, either directed by the employer or by the employee,

iii. providing a detail and registry of usage which qualifies transport providers and transport users with information means sufficient to satisfy governmental laws to qualify for any tax credits or means for preferential road allowances and privileges which may be enabled through legislation,

(a) means for preferential road allowances shall include such preferential treatment such as access to HOV lanes, reduced or eliminated cost for such governmental programs as congestion charging, road usage charging, toll road access, parking and preferred-location parking.

(b) qualification for tax credits could include the computation of carbon benefits, vehicle registration taxes, annual road charges of using the invention over traditional means of transport.

(c) whereby information means to satisfy governmental authorization could include such means as real-time access to a central or proxy servers,

1. real-time access control including such things as barrier gate authorization at tolls, reduced charges for road usage when the vehicle contains more transport users or transport capacity, access to HOV lanes, or in parking lots.

iv. providing access control information for private or governmental users for parking or entry gates,

(a) whereby the approval of the access to restricted, preferred parking, or reduced charges for such, could be determined via real-time or near-real time access to the central registry (or its proxy), or an on-board device authorized by the activity of the transport capacity.

The system for tracking the usage of system by transport providers and transport users may comprise

- measuring the volume of journeys between a plurality of locations, where the volume of spare transport capacity is continually monitored by wireless communications with the location-aware vehicles,

- storing this information in a stochastic data model, which can then predict available capacity and demand between any point in the covered geographic regions of the network by time of day, day of week, and day of year,

- providing transport users and transport providers with means to retrieve information about the likely availability of transport capacity and transport

demand between any given start and destination locations, at a specific time of day or in general.

This latter system may also be provided with system means to retrieve information via real-time display on web pages, via SMS/e-mail, via IVR or operator-assisted verbal conveyance of this information. The information may be periodically sent to the transport user, or sent to the transport user when triggered by new services or higher quality options appearing in areas where the user has registered an interest or previously travelled using the system.

The system also provides for showing real-time, variable transport capacity on a display. To this end, the system:

- provides a registry which is able to store and display a series of destinations and times from any given departure area, along with other specifics

  i. including public and private transport operations

  ii. including departure points within a departure area (that is, gates, bays, or geographically distinct pick-up points in densely populated areas, modal interchange points, and campuses).

  iii. displaying major intermediate locations served by the individual routes

- shows the plurality of transport capacities passing the departure area

  i. where the display could be placed in the lobby of a corporate campus as a visual reminder as people leave work that there are other transport options available to them

ii. where the display could be shown as a web page, a frame or portal within a web page, or as a component of a user's configurable home page, portal, or social networking community,

iii. where the display could also be mounted as a conventional real-time passenger Information display at or near a conventional bus or public transport stop, with the added shared transport information displayed.

- shows the real-time departure needs of registered Transport Demands, as a means of stimulating Transport Capacity market for more capacity.

- calculates and displays a real-time network map of available transport in the shared transport network, where such map is a graphic representation (like a subway network of a city) of the available destinations reachable by the transport network.

The display of transport capacity may include the stochastic availability of transport capacity between locations, such as, for example, average availability of spare capacity every 5 minutes between 8am and 9am from Portarlington to Dublin.

The transport capacity has the ability to provide one or a plurality of ratings for the transport demand, after the demand has been satisfied. These ratings of the transport provider and transport user can be affected by issues, such as their proclivity to miss reserved meetings or not pay for their transport usage.

The transport capacity can visually signal its arrival at a meeting place by distinctive, externally visible indicators, e.g. one or a plurality of light emitting devices attached to the side of the vehicle's navigational system which faces in the direction of the driver's trajectory and/or the side of the navigational system which is in the direction

of the face of the car, or attached to the rear side of the passenger's side sun visor of the car, or triggered by an in-vehicle system, but would use built-in external lights of the vehicle displaying in a set pattern to indicate pertinent information.

The externally visible indicator could also contain a particular message which would match with a code corresponding with the transport capacity's details. The message could be the name of a passenger or destination of the transport capacity or could contain a portion of a confidential Personal Identification Number that the transport capacity would have received in its confirmation message of the transport capacity.

Automatic verification of the delivery of transport services by independent confirmation of continuous co-ordinated proximity can be performed. For example, two different devices, one possessed by the transport provider, and the other by the transport user, with each having separately determined but accurate location and time information (for example, GPS phones) can be asserted to be verifiably in transit with each other through their continuous co-ordinated proximity. This assertion could be used as a verification of services provided or services used for the time and distance spent in transit, with related charges. This enables billing for the delivered service.

Further, two different devices can be used, one possessed by the transport provider, and the other by the transport user, with at least one having accurate location information, but both having a means to determine their continuous proximity to each other. One example of a means of determining continuous proximity would be the continuous presence of a near field wireless link (such as two devices with bluetooth or 802.11b).

Where both devices have live wireless data transmission capabilities to some central server, to provide independent confirmation of continuous proximity with link, reducing possibilities of fraud.

The invention thus provides a system that enables regular highway traffic and privately owned personal transport systems to augment and enable public mass transit networks.

The invention also provides a system that can match a rider's needs to move from one geographic point to another geographic point with an unrelated driver's unused transportation capacity.

The invention further provides an ad-hoc shared transport system for matching transport capacity with transport demand across a plurality of transport providers and a plurality of transport users.

What is claimed is:

1. A method comprising the steps of

providing a transport user device for identifying a transport user;

providing a transport provider device for identifying a transport provider;

triggering registration of the start of a transport journey in response to a communication of said transport user device and said transport provider device with each other,

performing a continuous coordinated proximity monitoring to verify the identity of a transport user and a transport provider vehicle, and

triggering registration of the end of said transport journey through communication of said transport user device and said transport provider device with each other.

33. A method as set forth in claim 1 further comprising the steps of polling each of said devices to determine their positions, calculating differences between the determined positions and determining that a journey has ended in response to said differences being outside of an acceptable range.

34. A method as set forth in claim 1 further comprising the steps of having said devices communicate with each other using a near-field communication means, and determining that a journey has ended in response to said devices being outside of a range.

Abstract of the Disclosure

The network system triggers registration of the start of a transport journey in response to a communication of a transport user device and a transport provider device with each other, performs a continuous coordinated proximity monitoring to verify the identity of a transport user and a transport provider vehicle, and triggers registration of the end of the transport journey through communication of the transport user device and the transport provider device with each other.

#403947