

PATENT
Customer No.: 108449
Attorney Docket No.: 00199-0001-00000

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:)
)
Sean O'SULLIVAN) Group Art Unit: 3628
)
Application No.: 12/069,656) Examiner: Kevin H. FLYNN
)
Filed: February 12, 2008) Confirmation No.: 7373
)
For: SHARED TRANSPORT SYSTEM AND) **VIA EFS WEB**
SERVICE NETWORK)
)

MAIL STOP MF

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: February 12, 2021

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

Electronic Acknowledgement Receipt	
EFS ID:	41908144
Application Number:	12069656
International Application Number:	
Confirmation Number:	7373
Title of Invention:	SHARED TRANSPORT SYSTEM AND SERVICE NETWORK
First Named Inventor/Applicant Name:	Sean O'Sullivan
Correspondence Address:	Francis C. Hand Esq., c/o Carella, Byrne, Bain, Gilfillan, Cecchi, Stewart & Olstein 5 Becker Farm Road Roseland NJ 07068 US 9739941700 -
Filer:	Joel Stuart Simon/Jeovany Cantillano
Filer Authorized By:	Joel Stuart Simon
Attorney Docket Number:	
Receipt Date:	12-FEB-2021
Filing Date:	12-FEB-2008
Time Stamp:	07:39:15
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	Maintenance Fee Address Change	Fee_Address.pdf	78144	no	1
			9bfc44292ee76792d8426314e49ff24152c702c3		
Warnings:					
Information:					
Total Files Size (in bytes):			78144		
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. <u>New Applications Under 35 U.S.C. 111</u> 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. <u>National Stage of an International Application under 35 U.S.C. 371</u> 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. <u>New International Application Filed with the USPTO as a Receiving Office</u> 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.					



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UNITED STATES DEPARTMENT OF COMMERCE
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Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
12/069,656	02/12/2008	Sean O'Sullivan	

Francis C. Hand Esq.,
c/o Carella, Byrne, Bain, Gilfillan, Cecchi,
Stewart & Olstein
5 Becker Farm Road
Roseland, NJ 07068

**CONFIRMATION NO. 7373
IMPROPER CPOA LETTER**



OC000000107610816

Date Mailed: 04/23/2019

NOTICE REGARDING POWER OF ATTORNEY

This is in response to the power of attorney filed 04/18/2019. The power of attorney in this application is not accepted for the reason(s) listed below:

- The power of attorney is from an assignee and the statement required by 37 CFR 3.73(c) has not been received.

/ngfissha/

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

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

PATENT
Customer No.: 108449
Attorney Docket No.: 00199-0999-00000

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:)
)
Sean O'SULLIVAN) Group Art Unit: 3628
)
Patent No.: 7,840,427) Examiner: FLYNN, KEVIN H.
)
Issued: November 23, 2010) Confirmation No.: 7373
)
For: SHARED TRANSPORT SYSTEM AND) **VIA EFS WEB**
SERVICE NETWORK)
)

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Commissioner for Patents
P.O. Box 1450
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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.: 2556793

Respectfully submitted,

BOOKOFF McANDREWS, PLLC

Dated: April 18, 2019

By: /Pablo Huerta/
Pablo Huerta
Reg. No. 66205
(202) 304-1482

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/AIA/82B identifies the application to which the Power of Attorney is directed, the Power of Attorney will not be recognized in the application.

Application Number	12/069,656
Filing Date	February 12, 2008
First Named Inventor	Sean O' Sullivan
Title	SHARED TRANSPORT SYSTEM AND SERVICE NETWORK
Art Unit	3628
Examiner Name	Kevin H. FLYNN
Attorney Docket Number	00199-0999-00000

SIGNATURE of Applicant or Patent Practitioner

Signature	/Pablo Huerta/	Date (Optional)	April 18, 2019
Name	Pablo Huerta	Registration Number	66,205
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.

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.

Electronic Acknowledgement Receipt	
EFS ID:	35771678
Application Number:	12069656
International Application Number:	
Confirmation Number:	7373
Title of Invention:	SHARED TRANSPORT SYSTEM AND SERVICE NETWORK
First Named Inventor/Applicant Name:	Sean O'Sullivan
Correspondence Address:	Francis C. Hand Esq., c/o Carella, Byrne, Bain, Gilfillan, Cecchi, Stewart & Olstein 5 Becker Farm Road Roseland NJ 07068 US 9739941700 -
Filer:	Pablo Silva Huerta/terri coates
Filer Authorized By:	Pablo Silva Huerta
Attorney Docket Number:	
Receipt Date:	18-APR-2019
Filing Date:	12-FEB-2008
Time Stamp:	18:44:00
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	Maintenance Fee Address Change	FEE_ADDRESS.pdf	70663	no	1
			bedd605715b1d26cd656689c73ded0739b21fed7		
Warnings:					
Information:					
2	Power of Attorney	POA.pdf	2777954	no	2
			d8b4078be1266faf8d9f544d1ffe5618e41be94a		
Warnings:					
Information:					
Total Files Size (in bytes):			2848617		
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. <u>New Applications Under 35 U.S.C. 111</u> 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. <u>National Stage of an International Application under 35 U.S.C. 371</u> 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. <u>New International Application Filed with the USPTO as a Receiving Office</u> 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.					



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APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/069,656	11/23/2010	7840427		7373

7590 11/03/2010
Francis C. Hand Esq.,
c/o Carella, Byrne, Bain, Gilfillan, Cecchi,
Stewart & Olstein
5 Becker Farm Road
Roseland, NJ 07068

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 85 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):

Sean O'Sullivan, Kinsale, IRELAND;



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.
12/069,656	02/12/2008	Sean O'Sullivan		7373

7590 10/29/2010
Francis C. Hand Esq.,
c/o Carella, Byrne, Bain, Gilfillan, Cecchi,
Stewart & Olstein
5 Becker Farm Road
Roseland, NJ 07068

EXAMINER

FLYNN, KEVIN H

ART UNIT	PAPER NUMBER
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3628

MAIL DATE	DELIVERY MODE
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10/29/2010

PAPER

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.

**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.
12069656	2/12/2008	O'SULLIVAN, SEAN	

Francis C. Hand Esq.,
c/o Carella, Byrne, Bain, Gilfillan, Cecchi,
Stewart & Olstein
5 Becker Farm Road
Roseland, NJ 07068

EXAMINER

KEVIN FLYNN

ART UNIT	PAPER
3628	20101015B

DATE MAILED:

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

Commissioner for Patents

Please note the following additions/modifications to the Notice of Allowance dated 2 September 2010:

- 1) Applicant's IDS, filed 29 October 2008, and the references therein, have been considered.
- 2) Allowed claim 35 has been modified to depend from claim 1 as agreed upon in the phone interview on 24 August 2010 with Francis Hand.

/JOHN W HAYES/
Supervisory Patent Examiner, Art Unit 3628

PTO-90C (Rev.04-03)

T-172 P.002/011 F-315

OCT 29 2008

PTO/SB/DHA (09-08)

Approved for use through 10/31/2008. OMB 0851-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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Substitute for form 1449/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(Use as many sheets as necessary)</i>		Complete if Known Application Number 12/069,656 Filing Date February 12, 2008 First Named Inventor Art Unit Examiner Name Attorney Docket Number 514810.2	
Sheet	1	of	1

[illegible][illegible]

Examiner Signature	<i>[Signature]</i>	Date Considered	13 Oct 2010
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 809. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. Applicant's unique citation designation number (optional). ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 801.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document; under WIPO Standard ST.16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

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 2 hours 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, 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.

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Application/Control Number: 12/069,656
Art Unit: 3628

Page 2

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: **Mail** Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (571)-273-2885

OCT 01 2010

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 future 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)

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.

7590

09/02/2010

Francis C. Hand Esq.,
 c/o Carella, Byrne, Bain, Gilfillan, Cecchi,
 Stewart & Olstein
 5 Becker Farm Road
 Roseland, NJ 07068

10/01/2010 JADD02 00000145 12069656

01 FC:2501
 02 FC:1504
 03 FC:1501

755.00 OP
 300.00 OP
 30.00 OP

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 facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

Francis C. Hand (Depositor's name)
 (Signature)
 SEPT. 28, 2010 (Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/069,656	02/12/2008	Sean O'Sullivan		7373

TITLE OF INVENTION: SHARED TRANSPORT SYSTEM AND SERVICE NETWORK

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	\$755	\$300	\$0	\$1055	12/02/2010

EXAMINER	ART UNIT	CLASS-SUBCLASS
FLYNN, KEVIN H.	3628	705-006000

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 03-02 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 Francis C. Hand
 Carella, Byrne,
 2 Cecchi, et al.
 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 has been filed for recordation as set forth in 37 CFR 3.11. 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. The following fee(s) are submitted:

- ☒ Issue Fee
☒ Publication Fee (No small entity discount permitted)
☒ Advance Order - # of Copies 10

4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)

- ☒ A check is enclosed.
☐ Payment by credit card. Form PTO-2038 is attached.
☒ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number 03-0678 (enclose an extra copy of this form).

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

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature

Francis C. Hand

Date

SEPT. 28, 2010

Typed or printed name

Francis C. Hand

Registration No.

22,280

This collection of information 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 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, 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.

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United States Patent and Trademark Office
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NOTICE OF ALLOWANCE AND FEE(S) DUE

7590

09/02/2010

Francis C. Hand Esq.,
c/o Carella, Byrne, Bain, Gilfillan, Cecchi,
Stewart & Olstein
5 Becker Farm Road
Roseland, NJ 07068

EXAMINER

FLYNN, KEVIN H

ART UNIT

PAPER NUMBER

3628

DATE MAILED: 09/02/2010

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

12/069,656

02/12/2008

Sean O'Sullivan

7373

TITLE OF INVENTION: SHARED TRANSPORT SYSTEM AND SERVICE NETWORK

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	\$755	\$300	\$0	\$1055	12/02/2010

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 SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

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: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

**Complete and send this form, together with applicable fee(s), to: Mail Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (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)

7590

09/02/2010

Francis C. Hand Esq.,
c/o Carella, Byrne, Bain, Gilfillan, Cecchi,
Stewart & Olstein
5 Becker Farm Road
Roseland, NJ 07068

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 facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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12/069,656

02/12/2008

Sean O'Sullivan

7373

TITLE OF INVENTION: SHARED TRANSPORT SYSTEM AND SERVICE NETWORK

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
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nonprovisional

YES

\$755

\$300

\$0

\$1055

12/02/2010

EXAMINER	ART UNIT	CLASS-SUBCLASS
FLYNN, KEVIN H	3628	705-006000

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 03-02 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 has been filed for recordation as set forth in 37 CFR 3.11. 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. The following fee(s) are submitted:

- ☐ Issue Fee
☐ Publication Fee (No small entity discount permitted)
☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
☐ Payment by credit card. Form PTO-2038 is attached.
☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

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

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____

Date _____

Typed or printed name _____

Registration No. _____

This collection of information 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 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, 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.



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.
12/069,656	02/12/2008	Sean O'Sullivan		7373

7590 09/02/2010

Francis C. Hand Esq.,
c/o Carella, Byrne, Bain, Gilfillan, Cecchi,
Stewart & Olstein
5 Becker Farm Road
Roseland, NJ 07068

EXAMINER

FLYNN, KEVIN H

ART UNIT	PAPER NUMBER
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3628

DATE MAILED: 09/02/2010

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

The Patent Term Adjustment to date is 85 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 85 day(s).

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 Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Notice of Allowability	Application No.	Applicant(s)	
	12/069,656	O'SULLIVAN, SEAN	
	Examiner	Art Unit	
	KEVIN FLYNN	3628	

-- 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 _____.
2. ☒ The allowed claim(s) is/are 1, 11, 17, 19-21, 23-31, 35 and 36.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - 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.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ 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) | 5. ☐ Notice of Informal Patent Application |
| 2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. ☒ Interview Summary (PTO-413),
Paper No./Mail Date <u>20100824-A</u> . |
| 3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____ | 7. ☒ Examiner's Amendment/Comment |
| 4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. ☒ Examiner's Statement of Reasons for Allowance |
| | 9. ☐ Other _____. |

Interview Summary	Application No.	Applicant(s)	
	12/069,656	O'SULLIVAN, SEAN	
	Examiner	Art Unit	
	KEVIN FLYNN	3628	

All participants (applicant, applicant's representative, PTO personnel):

(1) KEVIN FLYNN, examiner. (3) FRANCIS HAND, applicant's representative.

(2) SEAN O'SULLIVAN, applicant. (4) _____.

Date of Interview: 24 August 2010.

Type: a) ☒ Telephonic b) ☐ Video Conference
c) ☒ Personal [copy given to: 1) ☐ applicant 2) ☐ applicant's representative]

Exhibit shown or demonstration conducted: d) ☒ Yes e) ☐ No.
If Yes, brief description: Applicant showed brief demonstration of the real-time ridesharing program.

Claim(s) discussed: 1, 11 and 32.

Identification of prior art discussed: LeCouturier, Pearce.

Agreement with respect to the claims f) ☒ was reached. g) ☐ was not reached. h) ☐ N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: See Continuation Sheet.

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

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. See Summary of Record of Interview requirements on reverse side or on attached sheet.

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 examiner's 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 applicant's 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 applicant's 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 examiner's 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 examiner's initials.

Continuation of Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: Applicant and Applicant's representative discussed the invention versus the prior art. In particular, Applicant asserted that the "abstracting" step was different than the prior art in that an existing route is checked versus the plurality of pickup/dropoff nodes, as opposed to each route being predefined by the plurality of pickup/dropoff nodes. Examiner agreed that such a distinction would distinguish over the prior art of record. Examiner suggested including that the transport vehicle journey was "predetermined" so that a fluid routing system such as Lecouturier would not disclose the claimed invention. Applicant's representative agreed to add the "predetermined" language in an Examiner's amendment Furthermore, Applicant and Examiner agreed the stochastic model limitation did not particularly distinguish the invention as claimed. Finally, Examiner pointed out that claims 32-34 required a restriction/election requirement, which applicant's representative agreed.

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1, 17, 19-21, 23-31, 35-36, drawn to ridesharing routing and matching, classified in class 705, subclass 6.
 - II. Claims 32-34, drawn to journey registration based on device communication, classified in class 340, subclass 5.6.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct if they do not overlap in scope and are not obvious variants, and if it is shown that at least one subcombination is separately usable. In the instant case, subcombination I has separate utility such as general rideshare routing and matching, while subcombination II has separate utility such as registering and measuring journeys based on user device communication. See MPEP § 806.05(d).

The examiner has required restriction between subcombinations usable together. Where applicant elects a subcombination and claims thereto are subsequently found allowable, any claim(s) depending from or otherwise requiring all the limitations of the allowable subcombination will be examined for patentability in accordance with 37 CFR 1.104. See MPEP § 821.04(a). Applicant is advised that if any claim presented in a continuation or divisional application is anticipated by, or includes all the limitations of, a claim that is allowable in the present application, such claim may be subject to provisional statutory and/or nonstatutory double patenting rejections over the claims of the instant application.

3. Restriction for examination purposes as indicated is proper because all these inventions listed in this action are independent or distinct for the reasons given above and there would be a serious search and/or examination burden if restriction were not required because at least the following reason(s) apply:

The subcombinations are drawn to different inventions and require separate search.

Applicant is advised that the reply to this requirement to be complete must include (i) an election of a invention to be examined even though the requirement may be traversed (37 CFR 1.143) and (ii) identification of the claims encompassing the elected invention.

The election of an invention may be made with or without traverse. To reserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the restriction requirement, the election shall be treated as an election without traverse. Traversal must be presented at the time of election in order to be considered timely. Failure to timely traverse the requirement will result in the loss of right to petition under 37 CFR 1.144. If claims are added after the election, applicant must indicate which of these claims are readable upon the elected invention.

Should applicant traverse on the ground that the inventions are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the inventions to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

4. During a telephone conversation with Francis Hand on 24 August 2010 a provisional election was made without traverse to prosecute the invention of subcombination I, claims 1, 17, 19-21, 23-31, 35-36. Affirmation of this election must be made by applicant in replying to this Office action. Claims 32-34 withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. 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 CFR 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 Francis Hand on 24 August 2010.

In the Claims:

1. (currently amended) A method of sharing transportation employing a ground transportation network comprising the steps of

providing a computer network;

establishing an electronic registry in said computer network of capacity containing an indication of the spare transport capacity and location of a plurality of transport vehicles;

establishing a network of nodes in said computer network representing a plurality of pick-up points and a plurality of drop-off points;

abstracting a geographic representation of a predetermined transport vehicle journey by calculating places where said predetermined transport vehicle journey intersects said nodes and representing said predetermined transport vehicle journey in the format of a set of said nodes;

providing an electronic registry in said computer network of demand containing an indication of the demand for transportation needs of a plurality of transport users;

effecting a match in a match engine in said computer network of said transport capacity of at least one transport vehicle in said electronic registry of capacity with said transport demand for a journey of at least one transport user in said electronic registry of demand for transport between at least two of said nodes,[[;]] and

~~developing a stochastic model from measuring a plurality of said journeys, each said journey being between a plurality of said nodes in which spare transport capacity is monitored by wireless communication with location aware transport vehicles.~~

11.(currently amended) A ground transportation network comprising

a computer network;

an electronic registry of capacity in said computer network containing an indication of the spare transport capacity and location of a plurality of transport vehicles;

a display system for displaying a network of nodes in said computer network representing a plurality of pick-up points and a plurality of drop-off points;

an electronic registry of demand in said computer network containing an indication of the demand for transportation needs of a plurality of transport users;

a matching engine in said computer network to effect a match of said transport capacity of at least one transport vehicle in said electronic registry of capacity with said transport demand for a journey of at least one transport user in said electronic registry of demand;

a processor in said computer network for abstracting a geographic representation of said transport demand for a journey relative to said nodes by calculating places where a predetermined journey of a transport vehicle intersects said nodes and representing said predetermined journey in the format of a set of said intersected nodes.]] and

~~means for developing a stochastic model from measuring a plurality of said journeys, each said journey being between a plurality of said nodes in which spare transport capacity is monitored by wireless communication with location-aware transport vehicles.~~

32 to 34 (withdrawn)

35. (new) A method as set forth in claim further comprising the step of

developing a stochastic model from measuring a plurality of journeys, each journey being between a plurality of said nodes in which spare transport capacity is monitored by wireless communication with location-aware transport vehicles.

Art Unit: 3628

36. (new) A ground transportation network as set forth in claim 11

further comprising means for developing a stochastic model from measuring a plurality of journeys, each journey being between a plurality of said nodes in which spare transport capacity is monitored by wireless communication with location- aware transport vehicles.

In the Specification:

Page 1, line 4, add the header "FIELD OF THE INVENTION"

Page 1, line 7, add the header "BACKGROUND OF THE INVENTION"

Page 4, line 11, add the header "SUMMARY OF THE INVENTION"

Page 9, line 3, add the header "BRIEF DESCRIPTION OF THE DRAWINGS"

Page 13, line 8, add the header "DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS"

6. The following is an examiner's statement of reasons for allowance:

Regarding the relevant prior art of record:

The closest prior art, Lecouturier (US 2004/0158483 A1), discloses a ridesharing program (¶ 0079) that includes driver probabilities of acquiring passengers on particular routes (¶ 0083, ¶ 0117), identifying possible matching passengers and drivers (¶ 0086, ¶¶ 0134-0137), recording vehicle routing (¶¶ 0110-0114), receiving/matching .

The next closest prior art, Oesterling (US 2005/0049781 A1) discloses recording and determining rideshare driver routes via a GPS recording system (¶ 0017), and route matching based on route nodes (¶ 0047).

Newly cited prior art, Anderson et al. (US 2008/0270019 A1) discloses checking a predetermined route against requested rides for closest route and temporal matches as well as (¶¶ 0041-0044).

Newly cited prior art, Kirshenbaum et al. (US 2003/0100993) discloses determining similar routes, start points and end points and suggesting possible matching commuters and routing (¶¶ 0015-0018).

Newly cited prior art, Keaveny et al. (US 2007/0143012 A1) discloses a plurality of stops within a public transport route and possible modification of the route and/or stops based on customer requests (¶¶ 0006-0007).

Related prior art, Pearce et al. (US 2007/0027825 A1) discloses setting particular pickup/dropoff hubs in a rideshare program (¶¶ 0024-0026) and measuring time and capacity between pickup and dropoff points (¶¶ 0063-0064 and ¶ 0187).

Related prior art, Murray et al. (US 2004/0049424 A1), discloses monitoring rideshare participants to ensure and accurately track rideshare actions (¶¶ 0055-0056, ¶¶ 0111-0112).

Newly cited prior art, Roorda et al., "Past Presidents' Award for Merit in Transportation Engineering: Assessing Transportation Policy Using an Activity-Based Microsimulation Model of Travel Demand", Institute of Transportation Engineers, v76n11, pp: 16-21, Nov 2006, discloses that ridesharing may be accomplished via checking similar origins and destinations along with contacting potential ridesharers (p. 6, ¶ 5).

Regarding the prior art and the claimed invention:

Lecouturier fails to disclose abstracting a predetermined route by calculating places where the route intersects the nodes and representing the journey as a set of nodes. In particular, Lecouturier, in ¶ 0117 discloses checking various routes for probabilities of "finding passengers near any alternate routes", and determining the closest en route driver to a pickup point (¶ 0135), and checking for matches "within a predetermined range" (¶ 0114). However, Lecouturier, as shown, discloses tracking probabilities of picking up passengers along various routes based on pickup zones, and checking for matches "within a predetermined range", not abstracting a geographic representation based on the intersecting the pickup/dropoff nodes and representing the journey in a format of nodes.

Anderson et al., like Lecouturier, fails to disclose abstracting a predetermined route by calculating places where the route intersects the nodes and representing the journey as a set of nodes. In particular, Anderson, in ¶ 0043 discloses checking a route within predetermined distances for driver/passenger matching. However, like Lecouturier, Anderson et al. checks for close matches within an "allowed route deviation distance" (¶ 0043), not abstracting a geographic representation based on the intersecting the pickup/dropoff nodes and representing the journey in a format of nodes.

Oesterling and Kirshenbaum et al. similarly fails to disclose the aforementioned limitations of the invention. In particular, Oesterling creates a route based on route and roadway intersection nodes (¶ 0040), and determining matching routes based on the number of common route nodes (¶ 0047). Kirshenbaum similarly checks similar routes and start/end points, and determines possible matches based on similarities (¶¶ 0015-0018). However, the node/route structure of Oesterling/Kirshenbaum discloses matching similar routes as opposed to calculating intersecting pickup/dropoff nodes, as well as not abstracting a geographic representation based on the intersecting the pickup/dropoff nodes and representing the journey in a format of nodes.

Keaveney et al. also fails to disclose the claimed invention. Keaveney generally discloses a plurality of stops within a route and possible modification of the route based on additionally requested stops (¶¶ 0006-0007). However, Keaveney includes a plurality of stops defining a route, as opposed determining

Art Unit: 3628

particular stops that intersect with a predetermined route and representing the route a set of pickup/dropoff nodes.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry of a general nature or relating to the status of this application or concerning this communication or earlier communications from the Examiner should be directed to **Kevin H. Flynn** whose telephone number is **571.270.3108**. The Examiner can normally be reached on Monday-Friday, 9:30am-5:00pm. If attempts to reach the examiner by telephone are unsuccessful, the Examiner's supervisor, **John W. Hayes** can be reached at **571.272.6708**.

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://portal.uspto.gov/external/portal/pair> <<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).

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Hand delivered responses should be brought to the **United States Patent and Trademark**

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/Kevin H. Flynn/
Examiner, Art Unit 3628
30 August 2010

/JOHN W HAYES/
Supervisory Patent Examiner, Art Unit 3628

Notice of References Cited	Application/Control No. 12/069,656	Applicant(s)/Patent Under Reexamination O'SULLIVAN, SEAN	
	Examiner KEVIN FLYNN	Art Unit 3628	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-2008/0270019	10-2008	Anderson et al.	701/201
*	B	US-2003/0100993	05-2003	Kirshenbaum et al.	701/202
*	C	US-2007/0143012	06-2007	Keaveny et al.	701/210
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

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

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	Roorda et al., "Past Presidents' Award for Merit in Transportation Engineering: Assessing Transportation Policy Using an Activity-Based Microsimulation Model of Travel Demand", Institute of Transportation Engineers, v76n11, pp: 16-21, Nov 2006
	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.

<i>Index of Claims</i> 	Application/Control No. 12069656	Applicant(s)/Patent Under Reexamination O'SULLIVAN, SEAN
	Examiner KEVIN FLYNN	Art Unit 3628

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

☐ Claims renumbered in the same order as presented by applicant						☐ CPA		☐ T.D.		☐ R.1.47	
CLAIM		DATE									
Final	Original	07/01/2009	12/17/2009	05/03/2010	08/28/2010						
1	1	✓	✓	✓	=						
	2	✓	-								
	3	✓	-								
	4	✓	-								
	5	✓	-								
	6	✓	-								
	7	✓	-								
	8	✓	-								
	9	✓	-								
	10	✓	-								
15	11	✓	✓	✓	=						
	12	✓	-								
	13	✓	-								
	14	✓	-								
	15	✓	-								
	16	✓	-								
16	17		✓	✓	=						
	18		✓	-							
2	19		✓	✓	=						
3	20		✓	✓	=						
4	21		✓	✓	=						
	22		✓	-							
5	23		✓	✓	=						
6	24		✓	✓	=						
7	25		✓	✓	=						
8	26		✓	✓	=						
9	27		✓	✓	=						
10	28		✓	✓	=						
11	29		✓	✓	=						
12	30		✓	✓	=						
13	31		✓	✓	=						
	32		✓	✓	N						
	33		✓	✓	N						
	34		✓	✓	N						
14	35				=						
17	36				=						

Issue Classification 	Application/Control No. 12069656	Applicant(s)/Patent Under Reexamination O'SULLIVAN, SEAN
	Examiner KEVIN FLYNN	Art Unit 3628

ORIGINAL						INTERNATIONAL CLASSIFICATION												
CLASS			SUBCLASS			CLAIMED					NON-CLAIMED							
705			6			G	0	6	Q	10 / 00 (2006.01.01)								
CROSS REFERENCE(S)						G	0	1	C	21 / 34 (2006.01.01)								
						G	0	8	G	1 / 123 (2006.01.01)								
						G	0	1	C	21 / 00 (2006.01.01)								
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)																	
340	988	995.19																
701	202	204																

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47															
Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
1	1	17	36												
15	11														
16	17														
2	19														
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13	31														
14	35														

/KEVIN FLYNN/ Examiner.Art Unit 3628 (Assistant Examiner)	08/28/2010 (Date)	Total Claims Allowed: 17	
/JOHN W HAYES/ Supervisory Patent Examiner.Art Unit 3628 (Primary Examiner)	08/31/2010 (Date)	O.G. Print Claim(s) 1	O.G. Print Figure 1

Search Notes 	Application/Control No. 12069656	Applicant(s)/Patent Under Reexamination O'SULLIVAN, SEAN
	Examiner KEVIN FLYNN	Art Unit 3628

SEARCHED			
Class	Subclass	Date	Examiner
705	6	8/30/10	KHF
701	202	8/30/10	KHF
701	204	8/30/10	KHF
340	988	8/30/10	KHF
340	995.19	8/30/10	KHF

SEARCH NOTES		
Search Notes	Date	Examiner
Searched EAST	7/1/09	KHF
Searched EAST	12/17/09	KHF
Searched EAST	8/30/10	KHF
Searched Foreign Patents	8/30/10	KHF
Searched Dialog	8/30/10	KHF

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner
705	6	8/30/10	KHF
701	202	8/30/10	KHF
701	204	8/30/10	KHF
340	988	8/30/10	KHF
340	995.19	8/30/10	KHF

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CONFIRMATION NO. 7373

SERIAL NUMBER 12/069,656	FILING or 371(c) DATE 02/12/2008 RULE	CLASS 414	GROUP ART UNIT 3628	ATTORNEY DOCKET NO.		
APPLICANTS Sean O'Sullivan, Kinsale, IRELAND; ** CONTINUING DATA ***** This appln claims benefit of 60/900,808 02/12/2007 ** FOREIGN APPLICATIONS ***** ** IF REQUIRED, FOREIGN FILING LICENSE GRANTED *** SMALL ENTITY ** 03/04/2008						
Foreign Priority claimed ☐ Yes ☒ No 35 USC 119(a-d) conditions met ☐ Yes ☒ No Verified and /KEVIN H FLYNN/ Acknowledged Examiner's Signature		☐ Met after Allowance Initials	STATE OR COUNTRY IRELAND	SHEETS DRAWINGS 32	TOTAL CLAIMS 16	INDEPENDENT CLAIMS 2
ADDRESS Francis C. Hand Esq., c/o Carella, Byrne, Bain, Gilfillan, Cecchi, Stewart & Olstein 5 Becker Farm Road Roseland, NJ 07068 UNITED STATES						
TITLE Shared transport system and service network						
FILING FEE RECEIVED 515	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:			☐ All Fees ☐ 1.16 Fees (Filing) ☐ 1.17 Fees (Processing Ext. of time) ☐ 1.18 Fees (Issue) ☐ Other _____ ☐ Credit		

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	1	("20080270019").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2010/08/30 09:07
L6	66	rideschar\$4 or (ride near2 shar\$4)	FPRS; EPO; JPO; DERWENT	OR	ON	2010/08/30 10:17
L7	15	(rideschar\$4 or (ride near2 shar\$4)) and rout \$4	FPRS; EPO; JPO; DERWENT	OR	ON	2010/08/30 10:17
L8	33	(carpool\$4 or (car near2 pool\$4)) and rout\$4	FPRS; EPO; JPO; DERWENT	OR	ON	2010/08/30 10:20
L9	399	("pick up" or pickup or pick-up or "drop off" or dropoff or drop-off) and node	FPRS; EPO; JPO; DERWENT	OR	ON	2010/08/30 10:23
L10	2	("pick up" or pickup or pick-up or "drop off" or dropoff or drop-off) and node and (passenger)	FPRS; EPO; JPO; DERWENT	OR	ON	2010/08/30 10:24
L11	10	("pick up" or pickup or pick-up or "drop off" or dropoff or drop-off) and node and driver	FPRS; EPO; JPO; DERWENT	OR	ON	2010/08/30 10:24
S1	326	(carpool or "car pool")	US-PGPUB; USPAT; USOCR	OR	ON	2009/06/29 11:30
S2	61	"705".clas. and (carpool or "car pool")	US-PGPUB; USPAT; USOCR	OR	ON	2009/06/29 11:30
S3	1	("20040158483").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/06/29 18:56
S4	22	("20030014302" "20040049424" "4360875" "0477463" "0489445" "0491055" "0491699" "5168451" "5168452" "5272638" "5371678" "5550482" "5604676" "5739774" "6339745" "6636145" "6697730" "6754634"). PN.	US-PGPUB; USPAT; USOCR	OR	ON	2009/07/01 17:10
S5	1	"20080195428" and software	US-PGPUB; USPAT; USOCR	OR	ON	2009/07/01 19:29

S6	108	(carpool or "car pool" or (ride near2 shar\$3) or rideshar\$3) and node	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/16 15:22
S7	1	("20070027825").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/12/16 16:51
S8	1	("20040158483").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/12/16 18:07
S9	1	"20040158483" and gps	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/16 21:19
S10	4704	("near" near2 field) and bus	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/17 10:05
S11	219	"705".clas. and ("near" near2 field) and (bus)	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/17 10:12
S12	141	"705".clas. and ("near" near2 field) and (bus) and public	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/17 10:12
S13	356	("near" near2 field) same bus	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/17 10:12
S14	98	((("near" near2 field) same bus) and public	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/17 10:12
S15	1	("6919804").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/12/17 10:13
S16	18	("3997866" "4356387" "4528679" "4847485" "5068537" "5138638" "5149921" "5305390" "5313060" "5485347" "5541414" "5866887" "5920057" "5973732" "6388573").PN. OR ("6919804").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/17 10:13
S17	1	("7143049").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/12/17 10:19
S18	4	("5418525" "5541583" "5914671" "6700493").PN. OR ("7143049").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/17 10:19
S19	250	bus same exit same range	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/17 10:31
S20	0	(bus same exit same "out of range")	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/17 10:31
S21	18	(bus same exit same (out near2 range))	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/17 10:32
S22	45	(vehicle same exit same (out near2 range))	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/17 10:32
S23	0	fare same exit same (out near2 range)	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/17 10:37

S24	31	fare same exit same range	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/17 10:37
S25	135	GPS same range same exit	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/17 10:45
S26	0	GPS same range same exit same fare	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/17 10:45
S27	3	(GPS same range same exit\$3) and fare	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/17 10:45
S28	32	GPS same range same exit same vehicle	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/17 10:47
S29	0	("2070027825").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/12/17 12:29
S30	1	("20070027825").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/12/17 12:29
S31	9	GPS same bus same passenger same range	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/18 13:05
S32	129	GPS same passenger same range	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/18 13:24
S33	11	(GPS same passenger same range) same (exit or leave or end)	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/18 13:24
S34	0	(GPS same passenger same range) same fare	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/18 13:25
S35	4	(GPS same passenger same range) and fare	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/18 13:25
S36	179	(GPS and passenger and range) and fare	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/18 13:25
S37	145	(GPS and passenger and range) and fare and bus	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/18 13:25
S38	97	GPS same fare	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/18 13:28
S39	520	GPS same distance same relationship	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/18 13:31
S40	72	GPS same distance same relationship same vehicle	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/18 13:31
S41	1	GPS same fare same journey	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/18 13:32
S42	64	GPS same distance same passenger same vehicle	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/18 13:33
S43	478	GPS same position same together same range	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/18 13:41
S44	58	GPS same position same (together near5 range)	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/18 13:41
S45	0	GPS same position same "on board"	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/18 13:44
S46	0	GPS same "on board"	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/18 13:45

S47	18	"on board"	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/18 13:45
S48	33812	"onboard"	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/18 13:45
S49	2306	gps same "onboard"	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/18 13:45
S50	1046	gps same "onboard" same position	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/18 13:45
S51	1046	gps same onboard same position	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/18 13:45
S52	474	gps same onboard same position same determin \$3	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/18 13:45
S53	11	gps same onboard same position same passenger	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/18 13:45
S54	130	gps same onboard same position same range	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/18 13:46
S55	161	gps same (range near2 object)	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/18 13:46
S56	25	gps same (range near5 between near5 objects)	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/18 13:47
S57	2	(passenger near5 range near5 vehicle) same fare	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/18 13:55
S58	94	poll\$3 same GPS same range	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/19 15:32
S59	1	("20050172148").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2010/08/28 10:22
S60	71	(proximity near2 (monitor \$3 or detection)) same transaction	US-PGPUB; USPAT; USOCR	OR	ON	2010/08/28 10:34
S61	186	705/6.ccls. and (route)	US-PGPUB; USPAT; USOCR	OR	ON	2010/08/28 11:01
S62	107	705/6.ccls. and (route) and (car or automobile)	US-PGPUB; USPAT; USOCR	OR	ON	2010/08/28 11:02
S63	8	705/6.ccls. and ((ride near2 shar\$4) or rideshar \$4)	US-PGPUB; USPAT; USOCR	OR	ON	2010/08/28 11:15
S64	5	(701/202.ccls. or 701/204.ccls. or 340/988. ccls or 340/995.19.ccls.) and ((ride near2 shar\$4) or rideshar\$4)	US-PGPUB; USPAT; USOCR	OR	ON	2010/08/28 11:18
S65	468	(701/202.ccls. or 701/204.ccls. or 340/988. ccls or 340/995.19.ccls.) and (route) and node	US-PGPUB; USPAT; USOCR	OR	ON	2010/08/28 11:30

S66	9	(701/202.ccls. or 701/204.ccls. or 340/988.ccls or 340/995.19.ccls.) and (route) and node and (pickup or pick-up or dropoff or drop-off)	US-PGPUB; USPAT; USOCR	OR	ON	2010/08/28 11:30
S67	356	(701/202.ccls. or 701/204.ccls. or 340/988.ccls or 340/995.19.ccls.) and (route or journey) same node	US-PGPUB; USPAT; USOCR	OR	ON	2010/08/28 11:33
S68	356	(701/202.ccls. or 701/204.ccls. or 340/988.ccls or 340/995.19.ccls.) and (route or journey) same node	US-PGPUB; USPAT; USOCR	OR	ON	2010/08/28 11:33
S69	4	(701/202.ccls. or 701/204.ccls. or 340/988.ccls or 340/995.19.ccls.) and ((route or journey) same node) and (passenger same search \$4)	US-PGPUB; USPAT; USOCR	OR	ON	2010/08/28 11:33
S70	29	(701/202.ccls. or 701/204.ccls. or 340/988.ccls or 340/995.19.ccls.) and ((route or journey) same node) and (passenger same driver)	US-PGPUB; USPAT; USOCR	OR	ON	2010/08/28 11:36
S71	3	(701/202.ccls. or 701/204.ccls. or 340/988.ccls or 340/995.19.ccls.) and ("pick up" or pickup or pick-up or "drop off" or dropoff or drop-off) same node	US-PGPUB; USPAT; USOCR	OR	ON	2010/08/28 11:40
S72	75	(701/202.ccls. or 701/204.ccls. or 340/988.ccls or 340/995.19.ccls.) and ("pick up" or pickup or pick-up or "drop off" or dropoff or drop-off) same route	US-PGPUB; USPAT; USOCR	OR	ON	2010/08/28 11:40
S73	3	(701/202.ccls. or 701/204.ccls. or 340/988.ccls or 340/995.19.ccls.) and ("pick up" or pickup or pick-up or "drop off" or dropoff or drop-off) same node	US-PGPUB; USPAT; USOCR	OR	ON	2010/08/28 11:50
S74	11697	"701".clas. and (rideshar \$4 or (ride shar\$4))	US-PGPUB; USPAT; USOCR	OR	ON	2010/08/28 11:50

S75	5743	"701".clas. and (node)	US-PGPUB; USPAT; USOCR	OR	ON	2010/08/28 11:51
S76	35	"701".clas. and (rideshar \$4 or (ride near2 shar \$4))	US-PGPUB; USPAT; USOCR	OR	ON	2010/08/28 11:51

8/ 30/ 2010 10:46:27 AM**C:\ Documents and Settings\ kflynn\ My Documents\ EAST\ Workspaces\ 12069656.wsp**



Search History Mon Aug 30 11:21:29 CDT 2010

Set #	Hits	Query	Databases(s)
L1	1,021	(rideshar\$4 or (ride near2 shar\$4)) and rout\$4	Core FT1 442 Core FT2 579
L2	204	L1 and stop	Core FT1 89 Core FT2 115
L3	112	L1 and (stop same route)	Core FT1 55 Core FT2 57
L4	13,742	route near10 stop	Core FT1 3,642 Core FT2 10,100
L5	16	L1 and (route near10 stop)	Core FT1 10 Core FT2 6
L6	52	(carpool\$3 or (car near2 pool\$3)) and (route near10 stop)	Core FT1 22 Core FT2 30
L7	805	L1 and (pickup or "pick up" or dropoff or "drop off")	Core FT1 355 Core FT2 450
L8	55	L1 and ((pickup or "pick up" or dropoff or "drop off") near10 route)	Core FT1 26 Core FT2 29

LegendCore FT1

Business & Industry™, File 9 (1994 - present)
 ABI/INFORM®, File 15 (1971 - present)
 Gale Group PROMT®, File 16 (1990 - present)
 Gale Group Trade & Industry Database™, File 148 (1976 - present)
 Gale Group PROMT®, File 160 (1972-1989)
 Gale Group Computer Database™, File 275 (full-text 1/1988 - present)
 Business Wire, File 610 (Mar 1999 - present)
 Business Wire, File 810 (1986 - February 1999)

Core FT2

Dialog Global Reporter, File 20 (May 1997 - present)
 The McGraw-Hill Companies Publications Online, File 624 (1985 - present)
 Gale Group New Product Announcements/Plus® (NPA/Plus, File 621 (1985 - present)
 Gale Group Newsletter Database™, File 636 (1988 - present)
 PR Newswire, File 613 (May 1999 - present)
 San Jose Mercury News, File 634 (Jun 1985 - present)
 PR Newswire, File 813 (May 1987 - May 1999)

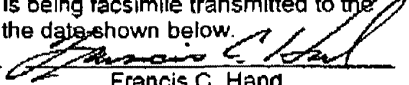


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2010-06-28	
• 2010-07-02	
• <u>08:44:17</u>	
• 2010-07-16	
• <u>12:48:30</u>	
• 2010-08-30	
• <u>10:45:03</u>	
• <u>10:45:05</u>	

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Francis C. Hand

Art Unit 3628

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Examiner: Kevin H. Flynn
Applicant: Sean O'Sullivan
Serial No: 12/069,656
Filed: February 12, 2008
Title: Shared Transport System and Service Network
Customer No.: 27192

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

Amendment

Sir:

In response to the Office Action dated May 12, 2010, please amend the
application as follows:

In the Claims:

1. (currently amended) A method of sharing transportation employing a ground transportation network comprising the steps of

providing a computer network;

establishing an electronic registry in said computer network of capacity containing an indication of the spare transport capacity and location of a plurality of transport vehicles;

establishing a network of nodes in said computer network representing a plurality of pick-up points and a plurality of drop-off points;

abstracting a geographic representation of a transport vehicle journey by calculating places where said journey intersects said nodes and representing said journey in the format of a set of said nodes;

providing an electronic registry in said computer network of demand containing an indication of the demand for transportation needs of a plurality of transport users;

effecting a match in a match engine in said computer network of said transport capacity of at least one transport vehicle in said electronic registry of capacity with said transport demand for a journey of at least one transport user in said electronic registry of demand for transport between at least two of said nodes; and

developing a stochastic model from measuring a plurality of said journeys, each said journey being between a plurality of said nodes in which spare

transport capacity is monitored by wireless communication with location-aware transport vehicles.

2. to 10 (canceled)

11.(currently amended) A ground transportation network comprising

a computer network;

an electronic registry of capacity in said computer network containing an indication of the spare transport capacity and location of a plurality of transport vehicles;

a display system for displaying a network of nodes in said computer network representing a plurality of pick-up points and a plurality of drop-off points;

an electronic registry of demand in said computer network containing an indication of the demand for transportation needs of a plurality of transport users;

a matching engine in said computer network to effect a match of said transport capacity of at least one transport vehicle in said electronic registry of capacity with said transport demand for a journey of at least one transport user in said electronic registry of demand;

a processor in said computer network for abstracting a geographic representation of a said transport demand for a journey ~~vehicle position~~ relative to said nodes by calculating places where a journey of a transport vehicle intersects said nodes and representing said journey in the format of a set of said intersected nodes; and

means for developing a stochastic model from measuring a plurality of said journeys, each said journey being between a plurality of said nodes in which spare transport capacity is monitored by wireless communication with location-aware transport vehicles .

12. to 16. (canceled)

17. (previously presented) A ground transportation network as set forth in claim 11

further comprising means for gathering data concerning traffic between said nodes and wherein said central processing capability is adapted to continually gather data concerning traffic between said nodes and to use said data to inform a transport user desirous of traveling from one of said nodes to another of said nodes of a manner of doing so using available transport capacity.

18. (canceled)

19. (previously presented) A method as set forth in claim 1 wherein the step of

establishing said network of nodes is determined from an existing database of stops for bus networks.

20.(previously presented) A method as set forth in claim 1 wherein the step

of establishing said network of nodes is determined by creating an in-vehicle system.

21.(previously presented) A method as set forth in claim 1 wherein said geographic

representation is received from a GPS unit.

22. (canceled)

23. (previously presented) A method as set forth in claim 1 further comprising the step

of gathering data to display real time transport capacity between selected nodes of said plurality of nodes.

24. (previously presented) A method as set forth in claim 1 further comprising the step of logically representing a journey of a driver on a route with intermediate nodes with activity at each node and a variation of timing as expected for that time of day.
25. (currently amended) A method as set forth in claim 1 further 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, and 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.
26. (previously presented) A method as set forth in claim 25 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.
27. (previously presented) A method as set forth in claim 25 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.

28. (previously presented) A method as set forth in claim 1 further comprising the steps
determining a vehicle status according to access control rules, said status
indicating authentication of a vehicle, to allow restricted or favorably charged
access to road or parking resources depending on rules for each type of use.
29. (previously presented) A method as set forth in claim 1 further comprising the step
of generating transport user displays of real time transport information according
to the stored capacity and to real time vehicle monitoring.
30. (previously presented) A method as set forth in claim 29 wherein said display is in
the form of a departure board.
31. (previously presented) A method as set forth in claim 1 further comprising the step
of employing a vehicle as a traffic probe to report on throughput and delays in
traffic.
32. (currently amended) A method ~~as set forth in claim 1 further~~ comprising the steps
of
providing a transport user device for identifying a transport user;
providing a transport provider device for identifying a transport provider;
and
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. (previously presented) A method as set forth in claim 32 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. (previously presented) A method as set forth in claim 32 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.

Remarks

Claims 1, 11, and 17, 19 to 21 and 23 to 34 remain in this application.

Each of claims 1, 11, 25 and 32 has been amended to more clearly define the scope of the invention in light of the Examiner's response set forth in paragraphs 8 to 11 of the Office Action.

Reconsideration of the rejection of the claims is requested.

Claim 1 has been rejected as being unpatentable over Lecouturier in view of Pearce. The Examiner considers that it would be obvious to modify Lecouturier with the technique of including pick-up and drop-off hubs in order to aid in vehicle pooling and ride sharing as in Pearce. However, such a modified method would not result in the claimed method.

More specifically, claim 1 requires "establishing a network of nodes in said computer network representing a plurality of pick-up points and a plurality of drop-off points". Pearce provides only one vehicle park as a first hub [0020] and one drop-off point as a second hub [0024].

Claim 1 further requires "abstracting a geographic representation of a transport vehicle journey by calculating places where said journey intersects said nodes and representing said journey in the format of a set of said nodes". Neither Lecouturier nor Pearce describes or teaches such a step.

As described in Lecouturier [0111-0114] "drop-off zones" are comprised of "segments", which "refer to any proximate roadway leading to a pick-up point or a drop-off point for an affiliated passenger, and a route starting point or a route final destination for a driver". Lecouturier's "door to door" approach requires segment by segment

direction to a driver, who may have to divert from his natural route to reach the pick-up or drop-off point.

By providing specific pick-up and drop-off locations [nodes] that do not require a driver to divert, rather than using blocks of a street to guide a driver to a pick-up point, the claimed method enables one to more easily achieve a critical mass of users.

Claim 1 further requires "developing a stochastic model from measuring a plurality of said journeys, each said journey being between a plurality of said nodes in which spare transport capacity is monitored by wireless communication with location-aware transport vehicles". Neither Lecouturier at [0090] nor Pearce at [0063-0064] or [0187] describes or teaches such a step. Pearce describes a system that checks-in vehicles and checks-out vehicles at the car park, but loses contact with them throughout the journey.

In view of the above, a rejection of claim 1 as being unpatentable over Lecouturier in view of Pearce is not warranted pursuant to the provisions of 35 USC 103.

Claim 11 requires "a display system for displaying a network of nodes in said computer network representing a plurality of pick-up points and a plurality of drop-off points". As noted above, Neither Lecouturier nor Pearce describes or teaches such a display system.

Claim 11 further requires "a processor in said computer network for abstracting a geographic representation of said transport demand for a journey relative to said nodes by calculating places where a journey of a transport vehicle intersects said nodes and

representing said journey in the format of a set of said intersected nodes". Neither Lecouturier nor Pearce describes or teaches such a processor.

Still further, claim 11 means for developing a stochastic model from measuring a plurality of said journeys, each said journey being between a plurality of said nodes in which spare transport capacity is monitored by wireless communication with location-aware transport vehicles. As noted above, neither Lecouturier at [0090] nor Pearce at [0063-0064] or [0187] describes or teaches such a means.

In view of the above, a rejection of claim 11 as being unpatentable over Lecouturier in view of Pearce is not warranted pursuant to the provisions of 35 USC 103.

Claim 17 depends from claim 11 and is believed to be allowable for similar reasons.

Claims 19 to 21 and 23 to 31 depend from claim 1 and are believed to be allowable for similar reasons.

Claim 25 further requires "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" 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". Murray retroactively verifies an audit trail and does not describe or teach a real-time registration of the commencement of a rider's rideshare journey and the end of the rider's journey, as would be required for an accurate, instant and automatic charging of riders. Accordingly, a rejection of claim 25 as being unpatentable

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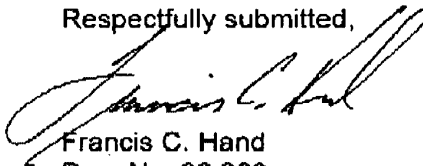
over Lecouturier in view of Pearce and Murray is not warranted pursuant to the provisions of 35 USC 103.

Claim 32 has been amended into independent form and contains recitations as in dependent claim 25. For reasons set forth above with respect to claim 25, a rejection of claim 32 as being unpatentable over Lecouturier in view of Pearce and Murray is not warranted pursuant to the provisions of 35 USC 103.

Claims 33 and 34 depend from claim 32 and are believed to be allowable for similar reasons.

Applicant has endeavored to place the application in condition for allowance and such is respectfully requested. Should the Examiner disagree, it is requested that any outstanding issues be resolved during an interview scheduled with the Examiner on Tuesday, August 24, 2010.

Respectfully submitted,



Francis C. Hand
Reg. No. 22,280
CARELLA, BYRNE, CECCHI, OLSTEIN
BRODY & AGNELLO
5 Becker Farm Road
Roseland, NJ 07068
Phone: 973-994-1700
Fax: 973-994-1744

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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875					Application or Docket Number 12/069,656		Filing Date 02/12/2008		☐ To be Mailed	
APPLICATION AS FILED – PART I										
(Column 1)			(Column 2)		SMALL ENTITY ☒ OR		OTHER THAN SMALL ENTITY			
FOR	NUMBER FILED	NUMBER EXTRA	RATE (\$)	FEE (\$)	OR	RATE (\$)	FEE (\$)			
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A				
☐ SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A			N/A				
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A				
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X \$ =		OR	X \$ =				
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X \$ =			X \$ =				
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$250 (\$125 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			TOTAL				
APPLICATION AS AMENDED – PART II										
(Column 1)			(Column 2)		(Column 3)		SMALL ENTITY OR		OTHER THAN SMALL ENTITY	
AMENDMENT	08/09/2010	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	OR	RATE (\$)	ADDITIONAL FEE (\$)
	Total (37 CFR 1.16(i))	* 18	Minus	** 20	= 0	X \$26 =	0	OR	X \$ =	
	Independent (37 CFR 1.16(h))	* 3	Minus	*** 3	= 0	X \$110 =	0	OR	X \$ =	
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))									
	TOTAL ADD'L FEE					0		OR	TOTAL ADD'L FEE	
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	OR	RATE (\$)	ADDITIONAL FEE (\$)
	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))									
	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 number found in the appropriate box in column 1.										

Legal Instrument Examiner:
/ANNETTE COWAN/

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.**

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/069,656	02/12/2008	Sean O'Sullivan		7373

7590 05/12/2010
Francis C. Hand Esq.,
c/o Carella, Byrne, Bain, Gilfillan, Cecchi,
Stewart & Olstein
5 Becker Farm Road
Roseland, NJ 07068

EXAMINER

FLYNN, KEVIN H

ART UNIT	PAPER NUMBER
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3628

MAIL DATE	DELIVERY MODE
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05/12/2010

PAPER

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.

Office Action Summary	Application No. 12/069,656	Applicant(s) O'SULLIVAN, SEAN
	Examiner KEVIN FLYNN	Art Unit 3628

-- 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 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, 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 05 March 2010 and 19 March 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ 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

- 4) ☒ Claim(s) 1, 11, 17, 19-21 and 23-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 11, 17, 19-21 and 23-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ 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).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

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).
- a) ☐ All b) ☐ Some * c) ☐ None of:
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) | 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) ☐ Notice of Informal Patent Application |
| 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) ☐ Other: _____ |

DETAILED ACTION

Status of Claims

1. This action is in reply to the amendment after final submitted 5 March 2010 and request for continued examination filed 19 March 2010.
2. Claims 1, 11, 21, 32-33 have been amended.
3. Claims 18, 22 have been canceled.
4. Claims 17-34 have been added.
5. Claims 1, 11, 17, 19-21, 23-34 are currently pending and have been examined.

Continued Examination Under 37 CFR 1.114

6. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5 March 2010 has been entered.

Response to Arguments

7. Regarding the previous 35 USC § 101 rejections, Applicant has successfully amended the claims, and, accordingly, the rejections are rescinded.
8. Applicant's arguments filed 5 March 2010 regarding the prior art rejections of claims 1 and 11 have been fully considered but they are not persuasive. In particular, Applicant argues the benefits of abstracting a journey as a set of nodes (e.g. reduced bandwidth and computing time, etc), as well as the benefits developing a stochastic model between the nodes (e.g. predicting a frequency of vehicles at a particular time of the day). Examiner appreciates the benefits of the

invention as described, however, the added limitations, as shown below, are broader than the particular aspects of the invention argued by Applicant.

9. Regarding the limitation added limitation: *abstracting a geographic representation of a transport vehicle journey by calculating places where said journey intersects said nodes and representing said journey in the format of a set of nodes*, Pearce, in ¶¶ 0024-0026 discloses a plurality of pick up and drop off points in a ridesharing program, and Lecouturier, in ¶¶ 0111-0114 discloses that the plurality of pick up and drop off points can be connected as a plurality of connected points of travel. In addition, Examiner notes that although Lecouturier includes additional information in the form of intersections and segments, the journeys may still be considered "in the format of a set of nodes", as the information includes the nodal points. Furthermore, Examiner notes that "a set of nodes" is not necessarily related to "said nodes" of this and the previous limitation, and, accordingly, the various intersections of Lecouturier disclose "a set of nodes".
10. Regarding the added limitation: *developing a stochastic model from measuring a journey between a plurality of said nodes in which spare transport capacity is monitored by wireless communication with location-aware transport vehicles*. Pearce, in ¶¶ 0063-0064 and ¶ 0187 discloses measuring the time and capacity between a set of pick-up/drop off points in a ridesharing program, and outputting the information as a likely waiting time. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the method of ridesharing with the technique of displaying transport capacity in order to apprise the passenger of the "likely waiting time" (Pearce ¶ 0187). In addition, Lecouturier, in ¶ 0090 discloses monitoring capacity and in ¶ 0086 discloses that the vehicles are location aware.
11. Examiner notes that the limitation does not create a stochastic model of the journey itself, or use location data to create the model. The limitation only "[develops] a stochastic model" through various measurements, which are shown by Pearce.
12. In addition, see updated rejection below.

Claim Objections

13. Claims 25-27 and 32-34 are objected to as being identical dependent claims of the same parent claim. Amended claim 32, like previously presented claim 25, now also depends on claim 1, and the further limitations are identical to claim 32. In addition, claims 26-27 and 33-34 are dependent on claims 25 and 32, respectively, and are also identical. Accordingly, the claims are duplicative.

Claim Rejections - 35 USC § 103

14. The following is a quotation of 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 of this title, 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 negated by the manner in which the invention was made.
15. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:
1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
16. Claims 1, 11, 17, 19-21, 23-24, 28-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lecouturier (US 2004/0158483 A1) in view of Pearce et al. (US 2007/0027825 A1).

Claim 1:

Lecouturier, as shown, discloses the following limitation(s):

- *providing an electronic registry in said network of capacity containing an indication of the spare transport capacity and location of a plurality of transport vehicles* (Lecouturier ¶¶ 0134-0137, ¶¶ 0089-0090);

- *providing an electronic registry in said network of demand containing an indication of the demand for transportation needs of a plurality of transport users (Lecouturier ¶¶ 0134-0137, ¶¶ 0089-0090);*
- *effecting a match in a match (701) in said network of said transport capacity of at least one transport vehicle in said electronic registry of capacity with said transport demand of at least one transport user in said electronic registry of demand for transport between at least two of said nodes (Lecouturier ¶¶ 0134-0137, ¶¶ 0089-0090).*

Regarding the limitation:

- *establishing a network of nodes representing a plurality of pick-up points and a plurality of drop-off points.*

Lecouturier in ¶ 0135, ¶ 0141 shows a plurality of pick up and drop off points including intermediate drop off points. In addition, Pearce, in at least ¶¶ 0024-0026 disclose that the pick up points in a ride share program may include particular hubs. It would have been obvious to combine the method of ridesharing with the technique of including pick up and drop off hubs in order to aid in vehicle pooling and ride sharing (Pearce ¶ 0001).

Regarding the limitation:

- *abstracting a geographic representation of a transport vehicle journey by calculating places where said journey intersects said nodes and representing said journey in the format of a set of nodes.*

Pearce, in ¶¶ 0024-0026 discloses a plurality of pick up and drop off points in a ridesharing program, and Lecouturier, in ¶¶ 0111-0114 discloses that the plurality of pick up and drop off points can be connected as a plurality of connected points of travel. In addition, Examiner notes that although Lecouturier includes additional information in the form of intersections and segments, the journeys may still be considered "in the format of a set of nodes". Furthermore, Examiner notes that "a set of nodes" is not necessarily related to "said nodes" of this and the previous limitation, and, accordingly, the various intersections of Lecouturier disclose "a set of nodes".

Regarding the limitation:

- *developing a stochastic model from measuring a journey between a plurality of said nodes in which spare transport capacity is monitored by wireless communication with location-aware transport vehicles.*

Pearce, in ¶¶ 0063-0064 and ¶ 0187 discloses measuring the time and capacity between a set of pick-up/drop off points in a ridesharing program, and outputting the information as a likely waiting time. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the method of ridesharing with the technique of displaying transport capacity in order to apprise the passenger of the "likely waiting time" (Pearce ¶ 0187). In addition, Lecouturier, in ¶ 0090 discloses monitoring capacity and in ¶ 0086 discloses that the vehicles are location aware.

Examiner notes that the limitation does not create a stochastic model of the journey itself, or use location data to create the model. The limitation only "[develops] a stochastic model" through various measurements, which are shown by Pearce.

Claim 11:

Lecouturier, as shown, discloses the following limitation(s):

- *an electronic registry of capacity containing an indication of the spare transport capacity and location of a plurality of transport vehicles* (Lecouturier ¶¶ 0134-0137, ¶¶ 0089-0090);
- *an electronic registry of demand containing an indication of the demand for transportation needs of a plurality of transport users individuals* (Lecouturier ¶¶ 0134-0137, ¶¶ 0089-0090); and
- *a matching engine to effect a match of said transport capacity of at least one transport vehicle in said electronic registry of capacity with said transport demand of at least one transport user in said electronic registry of demand* (Lecouturier ¶¶ 0134-0137, ¶¶ 0089-0090); and

Regarding the limitation:

- *means for abstracting a geographic representation of a transport vehicle position relative to said nodes by calculating places where a journey of a transport vehicle intersects said nodes and representing said journey in the format of a set of intersected nodes* (Lecouturier ¶¶ 0111-0114).

Regarding the limitation:

- *a network of nodes representing a plurality of pick-up point and a plurality of drop-off points.*

Lecouturier in ¶ 0135, ¶ 0141 shows a plurality of pick up and drop off points including intermediate drop off points. In addition, Pearce, in at least ¶¶ 0024-0026 disclose that the pick up points in a ride share program may include particular hubs. It would have been obvious to combine the method of ridesharing with the technique of including pick up and drop off hubs in order to aid in vehicle pooling and ride sharing (Pearce ¶ 0001).

Regarding the limitation:

- *a processor for abstracting a geographic representation of a transport vehicle position relative to said nodes by calculating places where a journey of a transport vehicle intersects said nodes and representing said journey in the format of a set of intersected nodes*

Pearce, in ¶¶ 0024-0026 discloses a plurality of pick up and drop off points in a ridesharing program, and Lecouturier, in ¶¶ 0111-0114 discloses that the plurality of pick up and drop off points can be connected as a plurality of connected points of travel. In addition, Examiner notes that although Lecouturier includes additional information in the form of intersections and segments, the journeys may still be considered "in the format of a set of nodes". Furthermore, Examiner notes that "a set of nodes" is not necessarily related to "said nodes" of this and the previous limitation, and, accordingly, the various intersections of Lecouturier disclose "a set of nodes".

Regarding the limitation:

- *means for developing a stochastic model from measuring a journey between a plurality of said nodes in which spare transport capacity is monitored by wireless communication with location-aware transport vehicles.*

Pearce, in ¶¶ 0063-0064 and ¶ 0187 discloses measuring the time and capacity between a set of pick-up/drop off points in a ridesharing program, and outputting the information as a likely waiting time. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the method of ridesharing with the technique of displaying transport capacity in order to apprise the passenger of the "likely waiting time" (Pearce ¶ 0187). In addition, Lecouturier, in ¶ 0090 discloses monitoring capacity and in ¶ 0086 discloses that the vehicles are location aware.

Examiner notes that the limitation does not create a stochastic model of the journey itself, or use location data to create the model. The limitation only "[develops] a stochastic model" through various measurements, which are shown by Pearce.

Claim 17:

Lecouturier/Pearce, as shown above, discloses the limitations of claim 11. In addition, Pearce also discloses the following limitation(s):

- *means for gathering data concerning traffic between said nodes and wherein said central processing capability is adapted to continually gather data concerning traffic between said nodes and to use said data to inform a transport user desirous of traveling from one of said nodes to another of said nodes of a manner of doing so using available transport capacity* (Pearce ¶¶ 0063-0064; ¶ 0187).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the method of ridesharing with the technique of displaying transport capacity in order to apprise the passenger of the "likely waiting time" (Pearce ¶ 0187).

Claim 19:

Lecouturier/Pearce, as shown above, discloses the limitations of claim 1. In addition, Pearce also discloses the following limitation(s):

- *wherein the step of establishing said network of nodes (803-806) is determined from an existing database (712) of stops for bus networks.*

Lecouturier, in ¶ 0141, discloses the possibility of transfer stations/hubs, but as does not specifically disclose they are on a bus route. However, Pearce, in ¶ 0197, discloses that these hubs may also include bus transit. It would have been obvious to combine the ride network of Lecouturier with the technique of including bus stops because the public transport may be "supported by public transport" (Pearce ¶ 0197).

Claim 20:

Lecouturier/Pearce, as shown above, discloses the limitations of claim 1. In addition, Lecouturier also discloses the following limitation(s):

- *wherein the step of establishing said network of nodes (803-806) is determined by creating an in-vehicle system (17-18) (Lecouturier ¶ 0136).*

Claim 21:

Lecouturier/Pearce, as shown above, discloses the limitations of claim 1. In addition, Lecouturier also discloses the following limitation(s):

- *wherein said geographic representation is received from a GPS unit (Lecouturier ¶ 0134).*

Claim 23:

Lecouturier/Pearce, as shown above, discloses the limitations of claim 1. In addition, Pearce also discloses the following limitation(s):

- *gathering data to display (1481-1487) real time transport capacity between selected nodes of said plurality of nodes (Pearce ¶¶ 0063-0064; ¶ 0187).*

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the method of ridesharing with the technique of displaying transport capacity in order to apprise the passenger of the "likely waiting time" (Pearce ¶ 0187).

Claim 24:

Lecouturier/Pearce, as shown above, discloses the limitations of claim 1. In addition, Lecouturier also discloses the following limitation(s):

- *Logically representing a journey of a driver on a route with intermediate nodes with activity at each node and a variation of timing as expected for that time of day (Lecouturier ¶ 0111, ¶¶ 0117-0119).*

Claim 28:

Lecouturier/Pearce, as shown above, discloses the limitations of claim 1. In addition, Pearce also discloses the following limitation(s):

- *determining a vehicle status according to access control rules, said status indicating authentication of a vehicle (1209), to allow restricted or favorably charged access to road or parking resources depending on rules for each type of use.*

Pearce, in ¶ 0165, discloses allowance of favorable access to road resources depending on the vehicle status. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the method of providing a ground transportation system with the technique of allowing favorable access in order to act as "An inducement" to drivers (Pearce ¶ 0165).

Claim 29:

Lecouturier/Pearce, as shown above, discloses the limitations of claim 1. In addition, Pearce also discloses the following limitation(s):

- *generating transport user displays (1401~1410) of real time transport information according to the stored capacity and to real time vehicle monitoring (Pearce ¶¶ 0063-0064; ¶ 0187).*

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the method of ridesharing with the technique of displaying transport capacity in order to apprise the passenger of the "likely waiting time" (Pearce ¶ 0187).

Claim 30:

Lecouturier/Pearce, as shown above, discloses the limitations of claim 29. In addition, Pearce also discloses the following limitation(s):

- *wherein said display is in the form of a departure board (1481-1488) (Pearce ¶¶ 0063-0064; ¶ 0187).*

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the method of ridesharing with the technique of displaying transport capacity in order to apprise the passenger of the "likely waiting time" (Pearce ¶ 0187).

Claim 31:

Lecouturier/Pearce, as shown above, discloses the limitations of claim 1. In addition, Lecouturier also discloses the following limitation(s):

- *employing a vehicle as a traffic probe to report on throughput and delays in traffic* (Lecouturier ¶ 0138).

17. Claims 25 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lecouturier/Pearce et al. in view of Murray et al. (US 2004/0049424 A1)

Claim 25 and 32:

Lecouturier/Pearce, as shown above, discloses the limitations of claim 1. Regarding the limitation::

- providing a transport user device for identifying a transport user, providing a transport provider device for identifying a transport provider and performing a continuous coordinated proximity monitoring (1001-1006) to verify the identity of a transport user and a transport provider vehicle.

Pearce, in ¶ 0027 and ¶ 0030 discloses vehicle and passenger identifiers, ¶ 0081, ¶¶ 0179-0183 discloses record keeping of both identifiers, but does not specifically disclose proximity monitoring. However, Murray, in ¶¶ 0055-0056, ¶¶ 0111-0112 discloses continuous tracking of rideshare participants. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the method of identifying/tracking the participants with the technique of continuous tracking in order to confirm the actions of the rideshare participants (Murray ¶ 0112).

18. Claims 26 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lecouturier/Pearce et al./Murray et al. in view of Apostolopoulos et al. (US 2003/0179113 A1).

Claim 26 and 33:

Lecouturier/Pearce/Murray, as shown above, discloses the limitations of claim 25. Regarding the limitation:

- *Polling (1005) 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.*

Murray, in ¶¶ 0055-0056, ¶¶ 0111-0112 discloses continuous tracking of rideshare participants to ensure they are together, but does not specifically disclose determining the journey has ended in response to being outside of a certain range. However, Apostolopoulos, in ¶ 0041 discloses the relationship between two objects being based upon a predetermined range. It would have been obvious to one of ordinary skill in the art at the time of the invention to include the predetermined range device as taught by Apostolopoulos in the system of Lecouturier/Pearce/Murray, since the claimed invention is merely a combination of old elements, and in the combination each element merely would have performed the same function as it did separately, and one of ordinary skill in the art would have recognized that the results of the combination were predictable.

Claim 27 and 34:

Lecouturier/Pearce/Murray, as shown above, discloses the limitations of claim 25. Regarding the limitation:

- *having said devices communicate (1004) 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.*

Murray, in ¶¶ 0055-0056, ¶¶ 0111-0112 discloses continuous tracking of rideshare participants, but does not specifically disclose using a near-field communication means and a range to determine the journey. However, Ying, in ¶ 0075, discloses a journey ending upon the device leaving communication range. It would have been obvious to one of ordinary skill in the art at the time of the invention to include the near-field device as taught by Ying in the system of Lecouturier/Pearce/Murray, since the claimed invention is merely a combination of old elements, and in the combination each element merely would have

Art Unit: 3628

performed the same function as it did separately, and one of ordinary skill in the art would have recognized that the results of the combination were predictable.

Conclusion

19. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Oesterling (US 2005/0049781 A1).

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 of a general nature or relating to the status of this application or concerning this communication or earlier communications from the Examiner should be directed to **Kevin H. Flynn** whose telephone number is **571.270.3108**. The Examiner can normally be reached on Monday-Friday, 9:30am-5:00pm. If attempts to reach the examiner by telephone are unsuccessful, the Examiner's supervisor, **John W. Hayes** can be reached at **571.272.6708**.

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://portal.uspto.gov/external/portal/pair> <<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).

Any response to this action should be mailed to:

Commissioner of Patents
P.O. Box 1450
Alexandria, VA 22313

or faxed to **571-273-8300**.

Application/Control Number: 12/069,656
Art Unit: 3628

Page 15

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/Kevin H. Flynn/
Examiner, Art Unit 3628
3 May 2010

/JOHN W HAYES/
Supervisory Patent Examiner, Art Unit 3628

Notice of References Cited	Application/Control No. 12/069,656	Applicant(s)/Patent Under Reexamination O'SULLIVAN, SEAN	
	Examiner KEVIN FLYNN	Art Unit 3628	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-2005/0049781	03-2005	Oesterling, Christopher L.	701/207
	B	US-			
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	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.

Search Notes 	Application/Control No. 12069656	Applicant(s)/Patent Under Reexamination O'SULLIVAN, SEAN
	Examiner KEVIN FLYNN	Art Unit 3628

SEARCHED			
Class	Subclass	Date	Examiner

SEARCH NOTES		
Search Notes	Date	Examiner
Searched EAST	7/1/09	KHF
Searched EAST	12/17/09	KHF

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner

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<i>Index of Claims</i> 	Application/Control No. 12069656	Applicant(s)/Patent Under Reexamination O'SULLIVAN, SEAN
	Examiner KEVIN FLYNN	Art Unit 3628

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

☐ Claims renumbered in the same order as presented by applicant						☐ CPA		☐ T.D.		☐ R.1.47	
CLAIM		DATE									
Final	Original	07/01/2009	12/17/2009	05/03/2010							
	1	✓	✓	✓							
	2	✓	-								
	3	✓	-								
	4	✓	-								
	5	✓	-								
	6	✓	-								
	7	✓	-								
	8	✓	-								
	9	✓	-								
	10	✓	-								
	11	✓	✓	✓							
	12	✓	-								
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	34		✓	✓							

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Request for Continued Examination (RCE) Transmittal Address to: Mail Stop RCE Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450	Application Number	12/069,656
	Filing Date	02/12/2008
	First Named Inventor	Sean O'Sullivan
	Art Unit	3628
	Examiner Name	Kevin H. Flynn
	Attorney Docket Number	514810.1

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application. Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. See Instruction Sheet for RCEs (not to be submitted to the USPTO) on page 2.

- Submission required under 37 CFR 1.114** Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

 - ☒ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.
 - ☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____
 - ☐ Other _____
 - ☐ Enclosed
 - ☐ Amendment/Reply
 - ☐ Affidavit(s)/ Declaration(s)
 - ☐ Information Disclosure Statement (IDS)
 - ☐ Other _____
- Miscellaneous**

 - ☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of _____ months. (Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)
 - ☐ Other _____
- Fees** The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed. The Director is hereby authorized to charge the following fees, any underpayment of fees, or credit any overpayments, to Deposit Account No. 03-0878

 - ☒ RCE fee required under 37 CFR 1.17(e)
 - ☐ Extension of time fee (37 CFR 1.138 and 1.17)
 - ☐ Other _____
 - ☐ Check in the amount of \$ _____ enclosed
 - ☐ Payment by credit card (Form PTO-2038 enclosed)

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SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED			
Signature	<i>Francis C. Hand</i>	Date	March 19, 2010
Name (Print/Type)	Francis C. Hand	Registration No.	22,280

CERTIFICATE OF MAILING OR TRANSMISSION			
I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Mail Stop RCE, Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450 or facsimile transmitted to the U.S. Patent and Trademark Office on the date shown below.			
Signature	<i>Francis C. Hand</i>	Date	March 19, 2010
Name (Print/Type)	Francis C. Hand		

This collection of information is required by 37 CFR 1.114. 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 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: Mail Stop RCE, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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03/22/2010 HMARZ11 00000049 030678 12069656

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PAGE 1/1 * RCVD AT 3/19/2010 4:19:53 PM [Eastern Daylight Time] * SVR:USPTO-EFXXRF-5/28 * DNIS:2738300 * CSID:9739947279 * DURATION (mm-ss):00-52

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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875					Application or Docket Number 12/069,656		Filing Date 02/12/2008		☐ To be Mailed	
APPLICATION AS FILED – PART I										
(Column 1)			(Column 2)		SMALL ENTITY ☒ OR		OTHER THAN SMALL ENTITY			
FOR	NUMBER FILED	NUMBER EXTRA	RATE (\$)	FEE (\$)	OR	RATE (\$)	FEE (\$)			
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A				
☐ SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A			N/A				
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A				
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X \$ =		OR	X \$ =				
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X \$ =			X \$ =				
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))			If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$250 (\$125 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))										
			TOTAL			TOTAL				
* If the difference in column 1 is less than zero, enter "0" in column 2.										
APPLICATION AS AMENDED – PART II										
(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY OR		OTHER THAN SMALL ENTITY		
AMENDMENT	03/19/2010	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	OR	RATE (\$)	ADDITIONAL FEE (\$)
	Total (37 CFR 1.16(i))	* 18	Minus	** 20	= 0	X \$26 =	0	OR	X \$ =	
	Independent (37 CFR 1.16(h))	* 2	Minus	*** 3	= 0	X \$110 =	0	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	0	OR	TOTAL ADD'L FEE	
(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY OR		OTHER THAN SMALL ENTITY		
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	OR	RATE (\$)	ADDITIONAL FEE (\$)
	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 number found in the appropriate box in column 1.										

Legal Instrument Examiner:
/DIANA BATES/

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.**

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/069,656	02/12/2008	Sean O'Sullivan		7373

7590 03/15/2010
Francis C. Hand Esq.,
c/o Carella, Byrne, Bain, Gilfillan, Cecchi,
Stewart & Olstein
5 Becker Farm Road
Roseland, NJ 07068

EXAMINER

FLYNN, KEVIN H

ART UNIT	PAPER NUMBER
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3628

MAIL DATE	DELIVERY MODE
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03/15/2010

PAPER

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.

Advisory Action Before the Filing of an Appeal Brief	Application No. 12/069,656	Applicant(s) O'SULLIVAN, SEAN	
	Examiner KEVIN FLYNN	Art Unit 3628	

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

THE REPLY FILED 05 March 2010 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☒ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:

- a) ☒ The period for reply expires 3 months from the mailing date of the final rejection.
- b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.
- Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

NOTICE OF APPEAL

2. ☐ The Notice of Appeal was filed on _____. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

AMENDMENTS

3. ☒ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because
- (a) ☒ They raise new issues that would require further consideration and/or search (see NOTE below);
- (b) ☐ They raise the issue of new matter (see NOTE below);
- (c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
- (d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: _____. (See 37 CFR 1.116 and 41.33(a)).

4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).
5. ☐ Applicant's reply has overcome the following rejection(s): _____.
6. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
7. ☒ For purposes of appeal, the proposed amendment(s): a) ☒ will not be entered, or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.
- The status of the claim(s) is (or will be) as follows:
- Claim(s) allowed: _____.
- Claim(s) objected to: _____.
- Claim(s) rejected: 1, 11 and 17-34.
- Claim(s) withdrawn from consideration: _____.

AFFIDAVIT OR OTHER EVIDENCE

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).
9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing a good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).
10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

REQUEST FOR RECONSIDERATION/OTHER

11. ☒ The request for reconsideration has been considered but does NOT place the application in condition for allowance because: Proposed amendments change the scope of the claims, and, accordingly, would require additional search.
12. ☐ Note the attached Information *Disclosure Statement*(s). (PTO/SB/08) Paper No(s). _____
13. ☐ Other: _____.

/JOHN W HAYES/
Supervisory Patent Examiner, Art Unit 3628

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CERTIFICATION OF FACSIMILE TRANSMISSIONI hereby certify that this paper is being facsimile transmitted to the
USPTO at (571) 273-8300 on the date shown below.Date MARCH 5, 2010 Francis C. Hand
Francis C. Hand

Art Unit 3628

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Examiner: Kevin H. Flynn
Applicant: Sean O'Sullivan
Serial No: 12/069,656
Filed: February 12, 2008
Title: Shared Transport System and Service Network
Customer No.: 27192

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

Request for Reconsideration of Final Rejection and
Amendment After Final Rejection

Sir:

In response to the Final Rejection dated December 23, 2009, please amend the
application as follows:

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In the Claims:

1. (currently amended) A method of sharing transportation employing a ground transportation network comprising the steps of

providing a computer network;

establishing an electronic registry in said computer network of capacity containing an indication of the spare transport capacity and location of a plurality of transport vehicles;

establishing a network of nodes in said computer network representing a plurality of pick-up points and a plurality of drop-off points;

abstracting a geographic representation of a transport vehicle journey by calculating places where said journey intersects said nodes and representing said journey in the format of a set of nodes;

providing an electronic registry in said computer network of demand containing an indication of the demand for transportation needs of a plurality of transport users; ~~and~~

effecting a match in a match engine in said computer network of said transport capacity of at least one transport vehicle in said electronic registry of capacity with said transport demand of at least one transport user in said electronic registry of demand for transport between at least two of said nodes; and

developing a stochastic model from measuring a journey between a plurality of said nodes in which spare transport capacity is monitored by wireless communication with location-aware transport vehicles.

2. to 10 (canceled)

11.(currently amended) A ground transportation network comprising

a computer network;

an electronic registry of capacity in said computer network containing an indication of the spare transport capacity and location of a plurality of transport vehicles;

a display system for displaying a network of nodes in said computer network representing a plurality of pick-up points and a plurality of drop-off points;

an electronic registry of demand in said computer network containing an indication of the demand for transportation needs of a plurality of transport users; and

a matching engine in said computer network to effect a match of said transport capacity of at least one transport vehicle in said electronic registry of capacity with said transport demand of at least one transport user in said electronic registry of demand; and

~~means~~ a processor in said computer network for abstracting a geographic representation of a transport vehicle position relative to said nodes by calculating places where a journey of a transport vehicle intersects said nodes and representing said journey in the format of a set of intersected nodes; and

means for developing a stochastic model from measuring a journey between a plurality of said nodes in which spare transport capacity is monitored by wireless communication with location-aware transport vehicles .

12. to 16. (canceled)

17. (previously presented) A ground transportation network as set forth in claim 11

further comprising means for gathering data concerning traffic between said nodes and wherein said central processing capability is adapted to continually gather data concerning traffic between said nodes and to use said data to inform a transport user desirous of traveling from one of said nodes to another of said nodes of a manner of doing so using available transport capacity.

18. (canceled)

19. (previously presented) A method as set forth in claim 1 wherein the step of

establishing said network of nodes is determined from an existing database of stops for bus networks.

20. (previously presented) A method as set forth in claim 1 wherein the step

of establishing said network of nodes is determined by creating an in-vehicle system.

21. (currently amended) A method as set forth in claim ~~18~~ 1 wherein said geographic

representation is received from a GPS unit.

22. (canceled)

23. (previously presented) A method as set forth in claim 1 further comprising the step

of gathering data to display real time transport capacity between selected nodes of said plurality of nodes.

24. (previously presented) A method as set forth in claim 1 further comprising the step of logically representing a journey of a driver on a route with intermediate nodes with activity at each node and a variation of timing as expected for that time of day.
25. (previously presented) A method as set forth in claim 1 further comprising the steps of providing a transport user device for identifying a transport user, providing a transport provider device for identifying a transport provider and performing a continuous coordinated proximity monitoring to verify the identity of a transport user and a transport provider vehicle.
26. (previously presented) A method as set forth in claim 25 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.
27. (previously presented) A method as set forth in claim 25 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.
28. (previously presented) A method as set forth in claim 1 further comprising the steps determining a vehicle status according to access control rules, said status indicating authentication of a vehicle, to allow restricted or favorably charged access to road or parking resources depending on rules for each type of use.

29. (previously presented) A method as set forth in claim 1 further comprising the step of generating transport user displays of real time transport information according to the stored capacity and to real time vehicle monitoring.
30. (previously presented) A method as set forth in claim 29 wherein said display is in the form of a departure board.
31. (previously presented) A method as set forth in claim 1 further comprising the step of employing a vehicle as a traffic probe to report on throughput and delays in traffic.
32. (currently amended) A method as set forth in claim 1 further comprising the steps of providing a transport user device for identifying a transport user; providing a transport provider device for identifying a transport provider; and performing a continuous coordinated proximity monitoring to verify the identity of a transport user and a transport provider vehicle.
33. (currently amended) A method as set forth in claim 32 further comprising the steps of polling each of said devices to determine their positions, calculating differences between the determined ~~position~~ positions and determining that a journey has ended in response to said differences being outside of an acceptable range.
34. (previously presented) A method as set forth in claim 32 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.

Remarks

Claims 1, 11, and 17, 19 to 21 and 23 to 34 remain in this application.

The claims have been amended as suggested by the Examiner at paragraph 7 in order to more particularly conform with 35 USC 112, the requirements of 35 USC 101 and the test of *In re Bilski*, 545 F.3d 943, 88 USPQ2d 1385 (Fed. Cir. 2008).

The amended claim 1 has been amended with the characteristics of claims 18 and 22 to define the very advantageous aspect of establishing a network of nodes and importantly abstracting geographic representations to nodes which are intersected. Hence, there is no need for a processor to maintain in real time or otherwise data about vehicle movement in terms of geographic representations, which of course can be at a very fine granularity of a radius of a few metres. This operation of abstracting to such nodes allows very clear management of the electronic registries of capacity and demand, with very little processing capacity being required and very little communications bandwidth for transmission of this information.

Telecommunications services for mobile devices are notoriously unreliable and often very expensive due to geographic variations in coverage. The data plan for a single vehicle communicating its positional information constantly would cost hundreds, if not thousands, of dollars per month. Abstracting this information automatically in a network of rapidly growing or changing nodes can reduce the communications need by 100 times, while also reducing corresponding necessary server-based calculations, improving overall system responsiveness.

In a transportation network, with each person representing either a transport need or supply source in a rush hour situation, even a small city with a population of a

few thousand people could result in computationally unsolvable problems, given the constraint of real-time response. The reduction of these demands and responses into a graph theory problem, and the application of operations research algorithms, makes these problems solvable in real time.

Furthermore, the amended claim 1 builds on this in a synergistic manner by developing a stochastic model from measuring a volume of journeys between a plurality of nodes in which spare transport capacity is monitored by wireless communication with location-aware transport vehicles. Hence, by communicating with location-aware vehicles, such as those with GPS and a wireless interface suitably programmed, the network can relate real time position of a vehicle with one of the nodes if the real time geographic position is deemed to intersect this node. Once the nodes are identified, the stochastic model can be developed. It can then, for example, predict that a certain frequency of vehicles is likely to be available at such a node at such a time of a particular day. This is also achieved with relatively little processing because for both vehicle monitoring for capacity/demand matching and for stochastic prediction the processing is in terms of a finite set of nodes, into which vehicle geographic representation has been abstracted.

The invention provides for building a network of nodes from the "bottom up" because it is self-modified due to monitoring of vehicle positions and abstracting the geographical representations. It's also bottom-up because the stops are created by users using an in-vehicle device, and those stops are made available to other users, which allows the network to expand organically.

Prior Art

Lecouturier describes ride-sharing at a very general business level, with little detail about technically how it is achieved. There is no disclosure or suggestion of the above technical aspects claimed in claim 1. Where technology is mentioned, Lecouturier indicates a very complex approach, for example computation fuzzy logic in paragraph [0034]. It appears that the skilled person would be pointed in the direction of matching on the basis of actual geographic representations, which of course is complex.

Lecouturier also appears to focus on specific links rather than nodes. Route matching of the invention is much more flexible, as there are many different ways to connect nodes, rather than just a single link.

Pearce puts a lot of emphasis on hubs, particularly in terms of their physical layout. This includes for example car park layouts as illustrated in Fig. 2B. There is no description or suggestion of abstracting geographical representations to nodes or of generating a stochastic model. Claim 1 is focused on a network of stops based on actual usage activity (bottom-up), in contrast to the specific transport corridors Pearce describes. The claimed invention network builds automatically, the network of Pearce appears to be top-down and inflexible.

Claim 1

Claim 1 requires the step of "establishing a network of nodes in said computer network representing a plurality of pick-up points and a plurality of drop-off points". Lecouturier does not describe or teach such a step. Instead, as indicated at [0135] in a first step, the central system software program retrieves from the database the codes of trips summaries suited to transport an affiliated passenger, from origin to destination.

Claim 1, as amended to include the characteristics of claims 18 and 22, further requires (1) "abstracting a geographic representation of a transport vehicle journey by calculating places where said journey intersects said nodes and representing said journey in the format of a set of nodes" and (2) "developing a stochastic model from measuring a journey between a plurality of said nodes in which spare transport capacity is monitored by wireless communication with location-aware transport vehicles". Neither step is described in Lecouturier.

Instead, as set forth in Lecouturier at [0110] the Architecture of the system is such that routes from trip origin to destination are divided into contiguous segments expressed by codes. One segment of route runs between two intersections and indicates cross streets, access or exit freeway ramps, travel duration, and orientation. Lecouturier at [0111] – [[0114] further describes these routes. There is no description of "abstracting a geographic representation of a transport vehicle journey by calculating places where said journey intersects said nodes and representing said journey in the format of a set of nodes".

Pearce at [0064], [0065] and [0187] is void of any teaching of "developing a stochastic model from measuring a journey between a plurality of said nodes in which spare transport capacity is monitored by wireless communication with location-aware transport vehicles".

For the above reasons, a rejection of claim 1 as being unpatentable over Lecouturier in view of Pearce is not warranted pursuant to the provisions of 35 USC 103.

MAR 05 2010

Claims 19 to 21 and 23 to 34 depend from claim 1 and are believed to be allowable for similar reasons.

Claim 11

Claim 11 has been amended along the lines of claim 1 and is believed to be allowable for similar reasons.

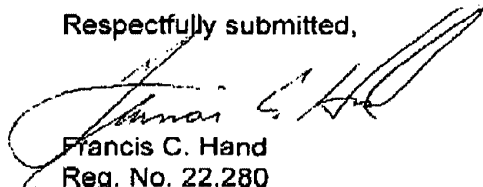
Claim 17 depends from claim 11 and is believed to be allowable for similar reasons.

Murray describes, at a high level, methods for encouraging ride-sharing by way of incentives. There is no disclosure or suggestion of the aspects claimed in the amended claim 1.

Ying does not appear to be relevant to the method of amended claim 1.

Applicant has endeavored to place the application in condition for allowance and such is respectfully requested. Should the Examiner disagree, it is requested that the Examiner telephone the undersigned to resolve any outstanding issue.

Respectfully submitted,



Francis C. Hand
Reg. No. 22,280
CARELLA, BYRNE, CECCHI, OLSTEIN
BRODY & AGNELLO
5 Becker Farm Road
Roseland, NJ 07068
Phone: 973-994-1700
Fax: 973-994-1744

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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875					Application or Docket Number 12/069,656		Filing Date 02/12/2008		☐ To be Mailed	
APPLICATION AS FILED – PART I										
(Column 1)			(Column 2)		SMALL ENTITY ☒ OR		OTHER THAN SMALL ENTITY			
FOR	NUMBER FILED	NUMBER EXTRA	RATE (\$)	FEE (\$)	OR	RATE (\$)	FEE (\$)			
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A				
☐ SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A			N/A				
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A				
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X \$ =		OR	X \$ =				
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X \$ =			X \$ =				
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$250 (\$125 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			TOTAL				
APPLICATION AS AMENDED – PART II										
(Column 1)			(Column 2)		(Column 3)		SMALL ENTITY OR		OTHER THAN SMALL ENTITY	
AMENDMENT	03/05/2010	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	OR	RATE (\$)	ADDITIONAL FEE (\$)
	Total (37 CFR 1.16(i))	* 18	Minus	** 20	= 0	X \$26 =	0	OR	X \$ =	
	Independent (37 CFR 1.16(h))	* 2	Minus	*** 3	= 0	X \$110 =	0	OR	X \$ =	
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))									
	TOTAL ADD'L FEE					0		OR	TOTAL ADD'L FEE	
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	OR	RATE (\$)	ADDITIONAL FEE (\$)
	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))									
	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 number found in the appropriate box in column 1.										

Legal Instrument Examiner:
/ERIC BURNS/

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.**

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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875					Application or Docket Number 12/069,656		Filing Date 02/12/2008		☐ To be Mailed	
APPLICATION AS FILED – PART I										
(Column 1)			(Column 2)		SMALL ENTITY ☒ OR		OTHER THAN SMALL ENTITY			
FOR	NUMBER FILED	NUMBER EXTRA	RATE (\$)	FEE (\$)	OR	RATE (\$)	FEE (\$)			
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A				
☐ SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A			N/A				
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A				
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X \$ =		OR	X \$ =				
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X \$ =			X \$ =				
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$250 (\$125 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			TOTAL				
APPLICATION AS AMENDED – PART II										
(Column 1)			(Column 2)		(Column 3)		SMALL ENTITY OR		OTHER THAN SMALL ENTITY	
AMENDMENT	03/05/2010	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	OR	RATE (\$)	ADDITIONAL FEE (\$)
	Total (37 CFR 1.16(i))	* 18	Minus	** 20	= 0	X \$26 =	0	OR	X \$ =	
	Independent (37 CFR 1.16(h))	* 2	Minus	*** 3	= 0	X \$110 =	0	OR	X \$ =	
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))									
	TOTAL ADD'L FEE					0		OR	TOTAL ADD'L FEE	
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	OR	RATE (\$)	ADDITIONAL FEE (\$)
	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))									
	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 number found in the appropriate box in column 1.										

Legal Instrument Examiner:
/ERIC BURNS/

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.**

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/069,656	02/12/2008	Sean O'Sullivan		7373

7590 12/23/2009
Francis C. Hand Esq.,
c/o Carella, Byrne, Bain, Gilfillan, Cecchi,
Stewart & Olstein
5 Becker Farm Road
Roseland, NJ 07068

EXAMINER

FLYNN, KEVIN H

ART UNIT	PAPER NUMBER
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3628

MAIL DATE	DELIVERY MODE
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12/23/2009

PAPER

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.

Office Action Summary	Application No. 12/069,656	Applicant(s) O'SULLIVAN, SEAN	
	Examiner KEVIN FLYNN	Art Unit 3628	

-- 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 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, 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 30 September 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ 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

- 4) ☒ Claim(s) 1, 11 and 17-34 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 11 and 17-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ 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).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

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).
 a) ☐ All b) ☐ Some * c) ☐ None of:
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) | 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) ☐ Notice of Informal Patent Application |
| 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) ☐ Other: _____ |

DETAILED ACTION

Status of Claims

1. This action is in reply to the response filed 30 September 2009.
2. Claims 1, 11 have been amended.
3. Claims 2-9, 12-16 have been canceled.
4. Claims 17-34 have been added.
5. Claims 1, 11, 17-34 are currently pending and have been examined.

Response to Arguments

6. Examiner notes that the previous 35 USC § 112, 2nd paragraph rejections of 6-10 are moot in view of the claims being canceled.
7. Regarding the previous 35 USC § 101 rejections, applicant has amended the claims and argues they conform with the test in *In re Bilski*. However, the current amendments do not render the claims statutory. Claim 1 now recites "employing a ground transportation network" and includes "in said network" within the claim body. However, given the nature of the claims, it is unclear if the "network" referred to is a computerized network involving computers and the like, or merely a network of transportation vehicles and passengers in a broader sense. Examiner suggests specifying that the network is a particular apparatus (ie computer network) that performs the method steps. Regarding claim 11, Applicant has added a "means for", however, the means for described could be merely software. Examiner suggests adding particular hardware to the system, such as a computer and a processor, to overcome the rejection.
8. Regarding the amended claims, Examiner notes that "a network of nodes" is a relatively broad term which can be disclosed by the plurality of pick-up and drop-off points in Lecouturier (US 2004/0158483 A1). In addition, previously cited as relevant reference Pearce et al. (US 2007/0027825 A1) discloses some of the functionality of some of the particular nodes.

9. In addition, see updated rejection below.

Claim Rejections - 35 USC § 101

10. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

11. Claims 1-10 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

A claimed process is eligible for patent protection under 35 U.S.C. § 101 if:

"(1) it is tied to a particular machine or apparatus, or (2) it transforms a particular article into a different state or thing. See Benson, 409 U.S. at 70 ('Transformation and reduction of an article 'to a different state or thing' is the clue to the patentability of a process claim that does not include particular machines. '); Diehr, 450 U.S. at 192 (holding that use of mathematical formula in process 'transforming or reducing an article to a different state or thing' constitutes patent-eligible subject matter); see also Flook, 437 U.S. at 589 n.9 ('An argument can be made [that the Supreme] Court has only recognized a process as within the statutory definition when it either was tied to a particular apparatus or operated to change materials to a 'different state or thing' '); Cochrane v. Deener, 94 U.S. 780, 788 (1876) ('A process is...an act, or a series of acts, performed upon the subject-matter to be transformed and reduced to a different state or thing.').⁷ A claimed process involving a fundamental principle that uses a particular machine or apparatus would not pre-empt uses of the principle that do not also use the specified machine or apparatus in the manner claimed. And a claimed process that transforms a particular article to a specified different state or thing by applying a fundamental principle would not pre-empt the use of the principle to transform any other article, to transform the same article but in a manner not covered by the claim, or to do anything other than transform the specified article." (*In re Bilski*, 88 USPQ2d 1385, 1391 (Fed. Cir. 2008))

Also noted in *Bilski* is the statement, "Process claim that recites fundamental principle, and that otherwise fails 'machine-or-transformation' test for whether such claim is drawn to patentable subject matter under 35 U.S.C. §101, is not rendered patent eligible by mere field-of-use limitations; another corollary to machine-or-transformation test is that recitation of specific machine or particular transformation of specific article does not transform unpatentable principle into patentable process if

recited machine or transformation constitutes mere 'insignificant post-solution activity.'" (*In re Bilski*, 88 USPQ2d 1385, 1385 (Fed. Cir. 2008)) Examples of insignificant post-solution activity include data gathering and outputting. Furthermore, the machine or transformation must impose meaningful limits on the scope of the method claims in order to pass the machine-or-transformation test. Please refer to the USPTO's "Guidance for Examining Process Claims in view of *In re Bilski*" memorandum dated January 7, 2009, http://www.uspto.gov/web/offices/pac/dapp/opla/documents/bilski_guidance_memo.pdf.

It is also noted that the mere recitation of a machine in the preamble in a manner such that the machine fails to patentably limit the scope of the claim does not make the claim statutory under 35 U.S.C. § 101, as seen in the Board of Patent Appeals Informative Opinion *Ex parte Langemyr et al.* (Appeal 2008-1495), <http://www.uspto.gov/web/offices/dcom/bpai/its/fd081495.pdf>.

Claims 1-10 are not tied to a particular machine or apparatus nor do they transform a particular article into a different state or thing, thereby failing the machine-or-transformation test; therefore, claims 1-10 are non-statutory under § 101.

Appropriate correction is required.

- 12.** Claims 11-16 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claims 11-16 are directed to an "network", however the body of the claim recites "electronic registries", "a network of nodes", "a matching engine", and "means for abstracting", neither of which are defined as hardware in the specification, and many aspects of the invention are defined as software. Functional descriptive material such as a computer program must be structurally and functionally interrelated with a medium to allow its intended uses to be realized. Accordingly, claims directed to software *per se* are not statutory subject matter. *In re Warmerdam*, 33 F.3d 1354, 1361, 31 USPQ2d 1754, 1760 (Fed. Cir. 1994). See MPEP § 2106.01 for further guidance and discussion on computer-related nonstatutory subject matter.

Claim Rejections - 35 USC § 103

13. The following is a quotation of 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 of this title, 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 negated by the manner in which the invention was made.

14. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

15. Claims 1, 11, 17-24, 28-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lecouturier (US 2004/0158483 A1) in view of Pearce et al. (US 2007/0027825 A1).

Claim 1:

Lecouturier, as shown, discloses the following limitation(s):

- *providing an electronic registry in said network of capacity containing an indication of the spare transport capacity and location of a plurality of transport vehicles* (Lecouturier ¶¶ 0134-0137, ¶¶ 0089-0090);
- *providing an electronic registry in said network of demand containing an indication of the demand for transportation needs of a plurality of transport users* (Lecouturier ¶¶ 0134-0137, ¶¶ 0089-0090);
- *effecting a match in a match (701) in said network of said transport capacity of at least one transport vehicle in said electronic registry of capacity with said transport demand of at least one*

transport user in said electronic registry of demand for transport between at least two of said nodes (Lecouturier ¶¶ 0134-0137, ¶¶ 0089-0090).

Regarding the limitation:

- *establishing a network of nodes representing a plurality of pick-up points and a plurality of drop-off points.*

Lecouturier in ¶ 0135, ¶ 0141 shows a plurality of pick up and drop off points including intermediate drop off points. In addition, Pearce, in at least ¶¶ 0024-0026 disclose that the pick up points in a ride share program may include particular hubs. It would have been obvious to combine the method of ridesharing with the technique of including pick up and drop off hubs in order to aid in vehicle pooling and ride sharing (Pearce ¶ 0001).

Claim 11:

Lecouturier, as shown, discloses the following limitation(s):

- *an electronic registry of capacity containing an indication of the spare transport capacity and location of a plurality of transport vehicles (Lecouturier ¶¶ 0134-0137, ¶¶ 0089-0090);*
- *an electronic registry of demand containing an indication of the demand for transportation needs of a plurality of transport users individuals (Lecouturier ¶¶ 0134-0137, ¶¶ 0089-0090); and*
- *a matching engine to effect a match of said transport capacity of at least one transport vehicle in said electronic registry of capacity with said transport demand of at least one transport user in said electronic registry of demand (Lecouturier ¶¶ 0134-0137, ¶¶ 0089-0090); and*
- *means for abstracting a geographic representation of a transport vehicle position relative to said nodes by calculating places where a journey of a transport vehicle intersects said nodes and representing said journey in the format of a set of intersected nodes (Lecouturier ¶¶ 0111-0114).*

Regarding the limitation:

- *a network of nodes representing a plurality of pick-up point and a plurality of drop-off points.*

Lecouturier in ¶ 0135, ¶ 0141 shows a plurality of pick up and drop off points including intermediate drop off points. In addition, Pearce, in at least ¶¶ 0024-0026 disclose that the pick up points in a ride share

program may include particular hubs. It would have been obvious to combine the method of ridesharing with the technique of including pick up and drop off hubs in order to aid in vehicle pooling and ride sharing (Pearce ¶ 0001).

Claim 17:

Lecouturier/Pearce, as shown above, discloses the limitations of claim 11. In addition, Pearce also discloses the following limitation(s):

- *means for gathering data concerning traffic between said nodes and wherein said central processing capability is adapted to continually gather data concerning traffic between said nodes and to use said data to inform a transport user desirous of traveling from one of said nodes to another of said nodes of a manner of doing so using available transport capacity* (Pearce ¶¶ 0064-0065; ¶ 0187).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the method of ridesharing with the technique of displaying transport capacity in order to apprise the passenger of the "likely waiting time" (Pearce ¶ 0187).

Claim 18:

Lecouturier/Pearce, as shown above, discloses the limitations of claim 1. In addition, Lecouturier/Pearce also discloses the following limitation(s):

- *abstracting a geographic representation of a transport vehicle journey to selected nodes (803-806) of said network by calculating places where a transport vehicle journey intersects nodes of said network and representing said journey in the format of a set of nodes* (Lecouturier ¶¶ 0111-0114), and
- *continually gathering data concerning traffic between said selected nodes (803-806) and using said data to inform a transport user desirous of traveling from one of said nodes to another of said nodes of a manner of doing so using available transport capacity* (Pearce ¶¶ 0064-0065; ¶ 0187).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the method of ridesharing with the technique of displaying transport capacity in order to apprise the passenger of the "likely waiting time" (Pearce ¶ 0187).

Claim 19:

Lecouturier/Pearce, as shown above, discloses the limitations of claim 1. In addition, Pearce also discloses the following limitation(s):

- *wherein the step of establishing said network of nodes (803-806) is determined from an existing database (712) of stops for bus networks.*

Lecouturier, in ¶ 0141, discloses the possibility of transfer stations/hubs, but as does not specifically disclose they are on a bus route. However, Pearce, in ¶ 0197, discloses that these hubs may also include bus transit. It would have been obvious to combine the ride network of Lecouturier with the technique of including bus stops because the public transport may be "supported by public transport" (Pearce ¶ 0197).

Claim 20:

Lecouturier/Pearce, as shown above, discloses the limitations of claim 1. In addition, Lecouturier also discloses the following limitation(s):

- *wherein the step of establishing said network of nodes (803-806) is determined by creating an in-vehicle system (17-18) (Lecouturier ¶ 0136).*

Claim 21:

Lecouturier/Pearce, as shown above, discloses the limitations of claim 18. In addition, Lecouturier also discloses the following limitation(s):

- *wherein said geographic representation is received from a GPS unit (Lecouturier ¶ 0134).*

Claim 22:

Lecouturier/Pearce, as shown above, discloses the limitations of claim 1. In addition, Pearce also discloses the following limitation(s):

- *developing a stochastic model from measuring a volume of journeys between a plurality of said nodes in which a volume of spare transport capacity is continually monitored by wireless communication with location-aware transport vehicles* (Pearce ¶¶ 0064-0065; ¶ 0187).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the method of ridesharing with the technique of displaying transport capacity in order to apprise the passenger of the "likely waiting time" (Pearce ¶ 0187).

Claim 23:

Lecouturier/Pearce, as shown above, discloses the limitations of claim 1. In addition, Pearce also discloses the following limitation(s):

- *gathering data to display (1481-1487) real time transport capacity between selected nodes of said plurality of nodes* (Pearce ¶¶ 0064-0065; ¶ 0187).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the method of ridesharing with the technique of displaying transport capacity in order to apprise the passenger of the "likely waiting time" (Pearce ¶ 0187).

Claim 24:

Lecouturier/Pearce, as shown above, discloses the limitations of claim 1. In addition, Lecouturier also discloses the following limitation(s):

- *Logically representing a journey of a driver on a route with intermediate nodes with activity at each node and a variation of timing as expected for that time of day* (Lecouturier ¶ 0111, ¶¶ 0117-0119).

Claim 28:

Lecouturier/Pearce, as shown above, discloses the limitations of claim 1. In addition, Pearce also discloses the following limitation(s):

- *determining a vehicle status according to access control rules, said status indicating authentication of a vehicle (1209), to allow restricted or favorably charged access to road or parking resources depending on rules for each type of use.*

Pearce, in ¶ 0165, discloses allowance of favorable access to road resources depending on the vehicle status. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the method of providing a ground transportation system with the technique of allowing favorable access in order to act as "An inducement" to drivers (Pearce ¶ 0165).

Claim 29:

Lecouturier/Pearce, as shown above, discloses the limitations of claim 1. In addition, Pearce also discloses the following limitation(s):

- *generating transport user displays (1401~1410) of real time transport information according to the stored capacity and to real time vehicle monitoring (Pearce ¶¶ 0064-0065; ¶ 0187).*

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the method of ridesharing with the technique of displaying transport capacity in order to apprise the passenger of the "likely waiting time" (Pearce ¶ 0187).

Claim 30:

Lecouturier/Pearce, as shown above, discloses the limitations of claim 29. In addition, Pearce also discloses the following limitation(s):

- *wherein said display is in the form of a departure board (1481-1488) (Pearce ¶¶ 0064-0065; ¶ 0187).*

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the method of ridesharing with the technique of displaying transport capacity in order to apprise the passenger of the "likely waiting time" (Pearce ¶ 0187).

Claim 31:

Lecouturier/Pearce, as shown above, discloses the limitations of claim 1. In addition, Lecouturier also discloses the following limitation(s):

- *employing a vehicle as a traffic probe to report on throughput and delays in traffic* (Lecouturier ¶ 0138).

16. Claims 25 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lecouturier/Pearce et al. in view of Murray et al. (US 2004/0049424 A1)

Claim 25 and 32:

Lecouturier/Pearce, as shown above, discloses the limitations of claim 1. Regarding the limitation::

- providing a transport user device for identifying a transport user, providing a transport provider device for identifying a transport provider and performing a continuous coordinated proximity monitoring (1001-1006) to verify the identity of a transport user and a transport provider vehicle.

Pearce, in ¶ 0027 and ¶ 0030 discloses vehicle and passenger identifiers, ¶ 0081, ¶¶ 0179-0183 discloses record keeping of both identifiers, but does not specifically disclose proximity monitoring. However, Murray, in ¶¶ 0055-0056, ¶¶ 0111-0112 discloses continuous tracking of rideshare participants. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the method of identifying/tracking the participants with the technique of continuous tracking in order to confirm the actions of the rideshare participants (Murray ¶ 0112).

17. Claims 26 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lecouturier/Pearce et al./Murray et al. in view of Apostolopoulos et al. (US 2003/0179113 A1).

Claim 26 and 33:

Lecouturier/Pearce/Murray, as shown above, discloses the limitations of claim 25. Regarding the limitation:

- *Polling (1005) each of said devices to determine their positions, calculating differences between the determined position and determining that a journey has ended in response to said differences being outside of an acceptable range.*

Murray, in ¶¶ 0055-0056, ¶¶ 0111-0112 discloses continuous tracking of rideshare participants to ensure they are together, but does not specifically disclose determining the journey has ended in response to being outside of a certain range. However, Apostolopoulos, in ¶ 0041 discloses the relationship between two objects being based upon a predetermined range. It would have been obvious to one of ordinary skill in the art at the time of the invention to include the predetermined range device as taught by Apostolopoulos in the system of Lecouturier/Pearce/Murray, since the claimed invention is merely a combination of old elements, and in the combination each element merely would have performed the same function as it did separately, and one of ordinary skill in the art would have recognized that the results of the combination were predictable.

Claim 27 and 34:

Lecouturier/Pearce/Murray, as shown above, discloses the limitations of claim 25. Regarding the limitation:

- *having said devices communicate (1004) 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.*

Murray, in ¶¶ 0055-0056, ¶¶ 0111-0112 discloses continuous tracking of rideshare participants, but does not specifically disclose using a near-field communication means and a range to determine the journey. However, Ying, in ¶ 0075, discloses a journey ending upon the device leaving communication range. It would have been obvious to one of ordinary skill in the art at the time of the invention to include the near-field device as taught by Ying in the system of Lecouturier/Pearce/Murray, since the claimed invention is merely a combination of old elements, and in the combination each element merely would have

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performed the same function as it did separately, and one of ordinary skill in the art would have recognized that the results of the combination were predictable.

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 of a general nature or relating to the status of this application or concerning this communication or earlier communications from the Examiner should be directed to **Kevin H. Flynn** whose telephone number is **571.270.3108**. The Examiner can normally be reached on Monday-Friday, 9:30am-5:00pm. If attempts to reach the examiner by telephone are unsuccessful, the Examiner's supervisor, **John W. Hayes** can be reached at **571.272.6708**.

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://portal.uspto.gov/external/portal/pair> <<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).

Any response to this action should be mailed to:

Commissioner of Patents

P.O. Box 1450

Alexandria, VA 22313

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or faxed to **571-273-8300**.

Hand delivered responses should be brought to the **United States Patent and Trademark**

Office Customer Service Window:

Randolph Building
401 Dulany Street
Alexandria, VA 22314.

/Kevin H. Flynn/
Examiner, Art Unit 3628
18 December 2009

/IGOR BORISSOV/
Primary Examiner, Art Unit 3628

Notice of References Cited	Application/Control No. 12/069,656	Applicant(s)/Patent Under Reexamination O'SULLIVAN, SEAN	
	Examiner KEVIN FLYNN	Art Unit 3628	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-2005/0172148	08-2005	Ying, Jeffrey	713/200
*	B	US-2003/0179113	09-2003	Apostolopoulos et al.	341/50
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	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.

<i>Index of Claims</i> 	Application/Control No. 12069656	Applicant(s)/Patent Under Reexamination O'SULLIVAN, SEAN
	Examiner KEVIN FLYNN	Art Unit 3628

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

☐ Claims renumbered in the same order as presented by applicant				☐ CPA		☐ T.D.		☐ R.1.47	
CLAIM		DATE							
Final	Original	07/01/2009	12/17/2009						
	1	✓	✓						
	2	✓	-						
	3	✓	-						
	4	✓	-						
	5	✓	-						
	6	✓	-						
	7	✓	-						
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	32		✓						
	33		✓						
	34		✓						

Search Notes 	Application/Control No. 12069656	Applicant(s)/Patent Under Reexamination O'SULLIVAN, SEAN
	Examiner KEVIN FLYNN	Art Unit 3628

SEARCHED			
Class	Subclass	Date	Examiner

SEARCH NOTES		
Search Notes	Date	Examiner
Searched EAST	7/1/09	KHF
Searched EAST	12/17/09	KHF

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner

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EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	94	poll\$3 same GPS same range	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/19 15:32
S1	326	(carpool or "car pool")	US-PGPUB; USPAT; USOCR	OR	ON	2009/06/29 11:30
S2	61	"705".clas. and (carpool or "car pool")	US-PGPUB; USPAT; USOCR	OR	ON	2009/06/29 11:30
S3	1	("20040158483").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/06/29 18:56
S4	22	("20030014302" "20040049424" "4360875" "0477463" "0489445" "0491055" "0491699" "5168451" "5168452" "5272638" "5371678" "5550482" "5604676" "5739774" "6339745" "6636145" "6697730" "6754634").PN.	US-PGPUB; USPAT; USOCR	OR	ON	2009/07/01 17:10
S5	1	"20080195428" and software	US-PGPUB; USPAT; USOCR	OR	ON	2009/07/01 19:29
S6	108	(carpool or "car pool" or (ride near2 shar\$3) or rideshar\$3) and node	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/16 15:22
S7	1	("20070027825").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/12/16 16:51
S8	1	("20040158483").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/12/16 18:07
S9	1	"20040158483" and gps	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/16 21:19
S10	4704	("near" near2 field) and bus	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/17 10:05

S11	219	"705".clas. and ("near" near2 field) and (bus)	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/17 10:12
S12	141	"705".clas. and ("near" near2 field) and (bus) and public	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/17 10:12
S13	356	("near" near2 field) same bus	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/17 10:12
S14	98	((("near" near2 field) same bus) and public	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/17 10:12
S15	1	("6919804").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/12/17 10:13
S16	18	("3997866" "4356387" "4528679" "4847485" "5068537" "5138638" "5149921" "5305390" "5313060" "5485347" "5541414" "5866887" "5920057" "5973732" "6388573").PN. OR ("6919804").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/17 10:13
S17	1	("7143049").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/12/17 10:19
S18	4	("5418525" "5541583" "5914671" "6700493").PN. OR ("7143049").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/17 10:19
S19	250	bus same exit same range	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/17 10:31
S20	0	(bus same exit same "out of range")	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/17 10:31
S21	18	(bus same exit same (out near2 range))	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/17 10:32
S22	45	(vehicle same exit same (out near2 range))	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/17 10:32
S23	0	fare same exit same (out near2 range)	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/17 10:37

S24	31	fare same exit same range	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/17 10:37
S25	135	GPS same range same exit	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/17 10:45
S26	0	GPS same range same exit same fare	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/17 10:45
S27	3	(GPS same range same exit\$3) and fare	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/17 10:45
S28	32	GPS same range same exit same vehicle	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/17 10:47
S29	0	("2070027825").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/12/17 12:29
S30	1	("20070027825").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/12/17 12:29
S31	9	GPS same bus same passenger same range	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/18 13:05
S32	129	GPS same passenger same range	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/18 13:24
S33	11	(GPS same passenger same range) same (exit or leave or end)	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/18 13:24
S34	0	(GPS same passenger same range) same fare	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/18 13:25
S35	4	(GPS same passenger same range) and fare	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/18 13:25
S36	179	(GPS and passenger and range) and fare	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/18 13:25
S37	145	(GPS and passenger and range) and fare and bus	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/18 13:25
S38	97	GPS same fare	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/18 13:28

S39	520	GPS same distance same relationship	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/18 13:31
S40	72	GPS same distance same relationship same vehicle	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/18 13:31
S41	1	GPS same fare same journey	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/18 13:32
S42	64	GPS same distance same passenger same vehicle	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/18 13:33
S43	478	GPS same position same together same range	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/18 13:41
S44	58	GPS same position same (together near5 range)	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/18 13:41
S45	0	GPS same position same "on board"	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/18 13:44
S46	0	GPS same "on board"	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/18 13:45
S47	18	"on board"	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/18 13:45
S48	33812	"onboard"	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/18 13:45
S49	2306	gps same "onboard"	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/18 13:45
S50	1046	gps same "onboard" same position	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/18 13:45
S51	1046	gps same onboard same position	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/18 13:45
S52	474	gps same onboard same position same determin \$3	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/18 13:45
S53	11	gps same onboard same position same passenger	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/18 13:45

S54	130	gps same onboard same position same range	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/18 13:46
S55	161	gps same (range near2 object)	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/18 13:46
S56	25	gps same (range near5 between near5 objects)	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/18 13:47
S57	2	(passenger near5 range near5 vehicle) same fare	US-PGPUB; USPAT; USOCR	OR	ON	2009/12/18 13:55

12/19/2009 4:07:30 PM

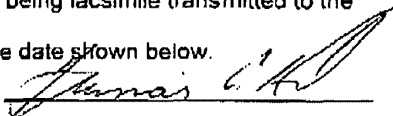
C:\Documents and Settings\kflynn\My Documents\EAST\Workspaces\12069656.wsp

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SEP 30 2009

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SEPTEMBER 30, 2009 

Date

Francis C. Hand

Art Unit 3628

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Examiner: Kevin H. Flynn
Applicant: Sean O'Sullivan
Serial No: 12/069,656
Filed: February 12, 2008
Title: Shared Transport System and Service Network
Customer No.: 27192

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

AMENDMENT

Sir:

In response to the Office Action dated July 6, 2009, please amend the application
as follows:

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SEP 30 2009

In the Claims:

1. (currently amended) A method of sharing ~~transportation~~ transportation employing a ground transportation network comprising the steps of

providing an electronic registry in said network of capacity containing an indication of the spare transport capacity and location of a plurality of transport vehicles;

establishing a network of nodes representing a plurality of pick-up points and a plurality of drop-off points;

providing an electronic registry in said network of demand containing an indication of the demand for transportation needs of a plurality of transport users individuals; and

~~providing a central processing capability to effect~~ effecting a match in a match engine (701) in said network of said transport capacity of at least one transport vehicle in said electronic registry of capacity with said transport demand of at least one transport user individual in said electronic registry of demand for transport between at least two of said nodes.

2. to 10 (canceled)

11.(currently amended) A ground transportation network comprising

an electronic registry of capacity containing an indication of the spare transport capacity and location of a plurality of transport vehicles;

a network of nodes representing a plurality of pick-up points and a plurality of drop-off points;

an electronic registry of demand containing an indication of the demand for transportation needs of a plurality of transport users ~~individuals~~; and

~~a central processing capability~~ a matching engine to effect a match of said transport capacity of at least one transport vehicle in said electronic registry of capacity with said transport demand of at least one transport user ~~individual~~ in said electronic registry of demand; and

means for abstracting a geographic representation of a transport vehicle position relative to said nodes by calculating places where a journey of a transport vehicle intersects said nodes and representing said journey in the format of a set of intersected nodes.

12. to 16. (canceled)

17. (new) A ground transportation network as set forth in claim 11 further comprising means for gathering data concerning traffic between said nodes and wherein said central processing capability is adapted to continually gather data concerning traffic between said nodes and to use said data to inform a transport user desirous of traveling from one of said nodes to another of said nodes of a manner of doing so using available transport capacity.

18. (new) A method as set forth in claim 1 further comprising the steps of:

abstracting a geographic representation of a transport vehicle journey to selected nodes (803-806) of said network by calculating places where a transport vehicle journey intersects nodes of said network and representing said journey in the format of a set of nodes, and

continually gathering data concerning traffic between said selected nodes (803-806) and using said data to inform a transport user desirous of traveling from one of said nodes to another of said nodes of a manner of doing so using available transport capacity.

19. (new) A method as set forth in claim 1 wherein the step of establishing said network of nodes (803-806) is determined from an existing database (712) of stops for bus networks.
20. (new) A method as set forth in claim 1 wherein the step of establishing said network of nodes (803-806) is determined by creating an in-vehicle system (17-18).
21. (new) A method as set forth in claim 18 wherein said geographic representation is received from a GPS unit.
22. (new) A method as set forth in claim 1 further comprising the step of developing a stochastic model from measuring a volume of journeys between a plurality of said nodes in which a volume of spare transport capacity is continually monitored by wireless communication with location-aware transport vehicles.
23. (new) A method as set forth in claim 1 further comprising the step of gathering data to display (1481-1487) real time transport capacity between selected nodes of said plurality of nodes.
24. (new) A method as set forth in claim 1 further comprising the step of logically representing a journey of a driver on a route with intermediate nodes with activity at each node and a variation of timing as expected for that time of day.
25. (new) A method as set forth in claim 1 further comprising the steps of providing a transport user device for identifying a transport user, providing a transport

provider device for identifying a transport provider and performing a continuous coordinated proximity monitoring (1001-1006) to verify the identity of a transport user and a transport provider vehicle.

26. (new) A method as set forth in claim 25 further comprising the steps of polling (1005) each of said devices to determine their positions, calculating differences between the determined position and determining that a journey has ended in response to said differences being outside of an acceptable range.
27. (new) A method as set forth in claim 25 further comprising the steps of having said devices communicate (1004) 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.
28. (new) A method as set forth in claim 1 further comprising the steps determining a vehicle status according to access control rules, said status indicating authentication of a vehicle (1209), to allow restricted or favorably charged access to road or parking resources depending on rules for each type of use.
29. (new) A method as set forth in claim 1 further comprising the step of generating transport user displays (1401-1410) of real time transport information according to the stored capacity and to real time vehicle monitoring.
30. (new) A method as set forth in claim 29 wherein said display is in the form of a departure board (1481-1488).
31. (new) A method as set forth in claim 1 further comprising the step of employing a vehicle as a traffic probe to report on throughput and delays in traffic.

32. (new) 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;

and

performing a continuous coordinated proximity monitoring (1001-1006) to verify the identity of a transport user and a transport provider vehicle.

33. (new) A method as set forth in claim 32 further comprising the steps of polling each of said devices to determine their positions, calculating differences between the determined position and determining that a journey has ended in response to said differences being outside of an acceptable range.

34. (new) A method as set forth in claim 32 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.

Remarks

Claims 1, 11, and 17 to 34 are in this application.

The claims have been amended in order to more particularly conform with 35 USC 112, the requirements of 35 USC 101 and the test of *In re Bilski*, 545 F.3d 943, 88 USPQ2d 1385 (Fed. Cir. 2008). Reference characters have been used in the claims to coordinate with the drawings for ease of reading and will be deleted upon allowance of the application.

Reconsideration of the rejection of the claims as being unpatentable over Lecouturier in view of Camer is requested.

Lecouturier at [0134] states "Using "fuzzy logic" and semi-random search, a software program eliminates by steps any lack of concordance between descriptions of potential routes to be taken by drivers and potential routes for a trip wanted by passengers, matching passengers and drivers at any moment by tracking positions and destinations of all en-route participating vehicles. The program tracks vehicles as they originate their commutes by receiving from vehicles in transit their GPS positions. When a call is received for a ride, the system analyzes all drivers in progress on routes segments, identified in the passenger pickup zone. It then alerts the nearest driver for the pick-up, based on final destination and vacant seats on board."

Further, Lecouturier in describing the schematic of Fig. 1 states:

[0082] An affiliated Driver 102 telephones to the Drivers' Routes Data Function 103 minutes before departing for a commute trip and provides a personal code. Data Function 103 identifies the known affiliated driver's phone number and, upon recognizing the

personal code, *retrieves from Commute Routes Database 101 all alternate routes susceptible to take driver from his known departing position to his known destination.* (emphasis added).

[0085] Affiliated passenger 110 telephones minutes before leaving home to Passengers on Demand Routes Data Function 111 and provides a personal code. Passengers Data function 111 (i) recognizes the phone number and personal code of passenger, (ii) *retrieves passenger's alternate commute routes from Database 101*, (iii) forwards alternate commute routes retrieved from Database 101 to Ride Matching Process 112, (iv) registers with Seat Tabulating and Balancing Process 116 the passenger's return trip home trip home by its corresponding home drop-off zone coded segments. (emphasis added)

[0086] Routes Matching Process 112 forwards all driver's alternate commute return routes by coded segments to Seat Tabulating and Balancing Process 116; *compares all alternate routes received from Passengers Data Function 111 with all alternate routes received from Drivers Data Function 103* and isolates a common destination on all alternate commute routes ... (emphasis added)

Claim 1, as amended, requires, inter alia, the step of establishing a network of nodes representing a plurality of pick-up points and a plurality of drop-off points. Neither

Lecouturier nor Camer describes or teaches such a step. For this reason alone, a rejection of claim 1 as being as being unpatentable over Lecouturier in view of Camer is not warranted pursuant of the provisions of 35 USC 103.

Apparatus claim 11 has been amended to require "a network of nodes representing a plurality of pick-up points and a plurality of drop-off points" and "means for abstracting a geographic representation of a transport vehicle position relative to said nodes by calculating places where a journey of a transport vehicle intersects said nodes and representing said journey in the format of a set of intersected nodes." Neither Lecouturier nor Camer describes or teaches such a network structure. Accordingly, a rejection of claim 11 as being as being unpatentable over Lecouturier in view of Camer is not warranted pursuant of the provisions of 35 USC 103.

Claim 17 depends from claim 11 and is believed to be allowable for similar reasons.

Claims 18 to 31 depend from claim 1 and are believed to be allowable for similar reasons.

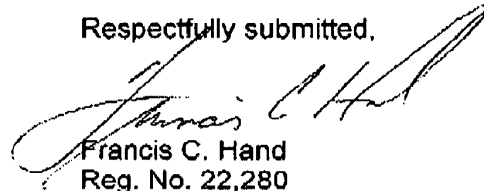
New claim 32 contains recitations as in dependent claim 25 and requires "providing a transport user device for identifying a transport user; providing a transport provider device for identifying a transport provider; and performing a continuous coordinated proximity monitoring to verify the identity of a transport user and a transport provider vehicle." Neither Lecouturier nor Camer describes or teaches that a driver or a passenger is provided with a device which is used to monitor the proximity of the two devices.

Claims 33 and 34 depend from claim 32.

The remaining references of record have been reviewed and none is believed to be pertinent to the claimed subject matter taken alone or in combination.

The application is believed to be in condition for allowance and such is respectfully requested.

Respectfully submitted,



Francis C. Hand
Reg. No. 22,280

CARELLA, BYRNE BAIN, GILFILLAN,
CECCHI, STEWART & OLSTEIN
5 Becker Farm Road
Roseland, NJ 07068
Phone: 973-994-1700

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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875					Application or Docket Number 12/069,656		Filing Date 02/12/2008		☐ To be Mailed	
APPLICATION AS FILED – PART I										
(Column 1)			(Column 2)		SMALL ENTITY ☒ OR		OTHER THAN SMALL ENTITY			
FOR	NUMBER FILED	NUMBER EXTRA	RATE (\$)	FEE (\$)	OR	RATE (\$)	FEE (\$)			
☒ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	155		N/A				
☐ SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A			N/A				
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A				
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X \$ =		OR	X \$ =				
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X \$ =			X \$ =				
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))			If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$250 (\$125 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))			TOTAL			TOTAL				
			155							
* If the difference in column 1 is less than zero, enter "0" in column 2.										
APPLICATION AS AMENDED – PART II										
(Column 1)			(Column 2)		(Column 3)		SMALL ENTITY OR		OTHER THAN SMALL ENTITY	
AMENDMENT	09/30/2009	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	OR	RATE (\$)	ADDITIONAL FEE (\$)	
	Total (37 CFR 1.16(i))	* 20	Minus	** 20	= 0	X \$26 =	0	OR	X \$ =	
	Independent (37 CFR 1.16(h))	* 2	Minus	*** 3	= 0	X \$110 =	0	OR	X \$ =	
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))									
	TOTAL ADD'L FEE					0	OR	TOTAL ADD'L FEE		
(Column 1)			(Column 2)		(Column 3)		SMALL ENTITY OR		OTHER THAN SMALL ENTITY	
AMENDMENT	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	OR	RATE (\$)	ADDITIONAL FEE (\$)		
	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))									
	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 number found in the appropriate box in column 1.										

Legal Instrument Examiner:
/TAMMY MCBETH BROWN/

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.**

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/069,656	02/12/2008	Sean O'Sullivan		7373

7590 07/06/2009
Francis C. Hand Esq.,
c/o Carella, Byrne, Bain, Gilfillan, Cecchi,
Stewart & Olstein
5 Becker Farm Road
Roseland, NJ 07068

EXAMINER

FLYNN, KEVIN H

ART UNIT	PAPER NUMBER
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3628

MAIL DATE	DELIVERY MODE
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07/06/2009

PAPER

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.

Office Action Summary	Application No. 12/069,656	Applicant(s) O'SULLIVAN, SEAN
	Examiner KEVIN FLYNN	Art Unit 3628

-- 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 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, 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 12 February 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ 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

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 February 2008 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).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

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).
- a) ☐ All b) ☐ Some * c) ☐ None of:
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) | 4) ☐ Interview Summary (PTO-413) |
| 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) ☐ Information Disclosure Statement(s) (PTO/SB/08) | 5) ☐ Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) ☐ Other: _____ |

DETAILED ACTION

Status of Claims

1. This action is in reply to the application filed on 12 February 2008.
2. Claims 1-16 are currently pending and have been examined.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 1-10 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

A claimed process is eligible for patent protection under 35 U.S.C. § 101 if:

"(1) it is tied to a particular machine or apparatus, or (2) it transforms a particular article into a different state or thing. See Benson, 409 U.S. at 70 ('Transformation and reduction of an article 'to a different state or thing' is the clue to the patentability of a process claim that does not include particular machines. '); Diehr, 450 U.S. at 192 (holding that use of mathematical formula in process 'transforming or reducing an article to a different state or thing' constitutes patent-eligible subject matter); see also Flook, 437 U.S. at 589 n.9 ('An argument can be made [that the Supreme] Court has only recognized a process as within the statutory definition when it either was tied to a particular apparatus or operated to change materials to a 'different state or thing' '); Cochrane v. Deener, 94 U.S. 780, 788 (1876) ('A process is...an act, or a series of acts, performed upon the subject-matter to be transformed and reduced to a different state or thing.').⁷ A claimed process involving a fundamental principle that uses a particular machine or apparatus would not pre-empt uses of the principle that do not also use the specified machine or apparatus in the manner claimed. And a claimed process that transforms a particular article to a specified different state or thing by applying a fundamental principle would not pre-empt the use of the principle to transform any other article, to transform the same article but in a manner not covered by the claim, or to do anything other than transform the specified article." (*In re Bilski*, 88 USPQ2d 1385, 1391 (Fed. Cir. 2008))

Also noted in *Bilski* is the statement, "Process claim that recites fundamental principle, and that otherwise fails 'machine-or-transformation' test for whether such claim is drawn to patentable subject matter under 35 U.S.C. §101, is not rendered patent eligible by mere field-of-use limitations; another corollary to machine-or-transformation test is that recitation of specific machine or particular transformation of specific article does not transform unpatentable principle into patentable process if recited machine or transformation constitutes mere 'insignificant post-solution activity.'" (*In re Bilski*, 88 USPQ2d 1385, 1385 (Fed. Cir. 2008)) Examples of insignificant post-solution activity include data gathering and outputting. Furthermore, the machine or transformation must impose meaningful limits on the scope of the method claims in order to pass the machine-or-transformation test. Please refer to the USPTO's "Guidance for Examining Process Claims in view of *In re Bilski*" memorandum dated January 7, 2009, http://www.uspto.gov/web/offices/pac/dapp/opla/documents/bilski_guidance_memo.pdf.

It is also noted that the mere recitation of a machine in the preamble in a manner such that the machine fails to patentably limit the scope of the claim does not make the claim statutory under 35 U.S.C. § 101, as seen in the Board of Patent Appeals Informative Opinion *Ex parte Langemyr et al.* (Appeal 2008-1495), <http://www.uspto.gov/web/offices/dcom/bpai/its/fd081495.pdf>.

Claims 1-10 are not tied to a particular machine or apparatus nor do they transform a particular article into a different state or thing, thereby failing the machine-or-transformation test; therefore, claims 1-10 are non-statutory under § 101.

Appropriate correction is required.

5. Claims 11-16 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claims 11-16 are directed to a "network", however the body of the claim recites "electronic registries" and "a central processing capability", neither of which are defined as hardware in the specification, and many aspects of the invention are defined as software. Functional descriptive material such as a computer program must be structurally and functionally interrelated with a medium to allow its intended uses to be realized. Accordingly, claims directed to software *per se* are not statutory subject matter. *In re Warmerdam*, 33 F.3d

1354, 1361, 31 USPQ2d 1754, 1760 (Fed. Cir. 1994). See MPEP § 2106.01 for further guidance and discussion on computer-related nonstatutory subject matter.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
7. Claims 6-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
8. Claims 6, 7, 8, 10 recite the limitation ""the matched individual"; claim 10 recites "said matched transport vehicle". There is insufficient antecedent basis for these limitations in the claims.
9. Claim 9 is rejected as indefinite. The limitation(s) "another matched transport vehicle" is indefinite because there is no original "matched transport vehicle" so it is unclear how there can be "another". For the purpose of this examination, the limitation shall be interpreted as any additional transport vehicle.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 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 of this title, 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 negated by the manner in which the invention was made.
11. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:
 1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.

Art Unit: 3628

3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

12. Claims 1-3, 5-7, 10-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lecouturier (US 2004/0158483 A1) in view of Camer (US 6,675,150 B1).

Claim 1 and 11:

Lecouturier, as shown, discloses the following limitation(s):

- *providing an electronic registry of demand containing an indication of the demand for transportation needs of a plurality of individuals* (Lecouturier ¶ 0134); and
- *providing a central processing capability to effect a match of said transport capacity of at least one transport vehicle in said electronic registry of capacity with said transport demand of at least one individual in said electronic registry of demand* (Lecouturier ¶ 0134).

Regarding the limitation:

- *providing an electronic registry of capacity containing an indication of the spare transport capacity and location of a plurality of transport vehicles;*

Lecouturier, in at least ¶ 0134, discloses maintaining an indication of location of transport vehicles, but does not specifically disclose the capacity of the vehicle. However, Camer, in at least col. 4, lines 54-56, discloses including the capacity of the transporting vehicle. It would have been obvious to one of ordinary skill in the art at the time of the invention to include vehicle capacity as taught by Camer in the system of Lecouturier, since the claimed invention is merely a combination of old elements, and in the combination each element merely would have performed the same function as it did separately, and one of ordinary skill in the art would have recognized that the results of the combination were predictable.

Claim 2:

Lecouturier/Camer, as shown above, discloses the limitations of claim 1. In addition, Lecouturier also discloses the following limitation(s):

- *wherein said indication of transport demand includes start and destination locations (Lecouturier ¶ 0130).*

Claim 3:

Lecouturier/Camer, as shown above, discloses the limitations of claim 1. In addition, Camer also discloses the following limitation(s):

- *wherein said indication of transport demand includes at least one of needed capacity of seats, baby seats and wheelchair access (Camer col. 4, lines 36-38).*

It would have been obvious to one of ordinary skill in the art at the time of the invention to include special needs as taught by Camer in the system of Lecouturier, since the claimed invention is merely a combination of old elements, and in the combination each element merely would have performed the same function as it did separately, and one of ordinary skill in the art would have recognized that the results of the combination were predictable.

Claim 5:

Lecouturier/Camer, as shown above, discloses the limitations of claim 1. In addition, Lecouturier also discloses the following limitation(s):

- *providing automated communication between a matched transport vehicle and individual (Lecouturier ¶ 0134).*

Claim 6:

Lecouturier/Camer, as shown above, discloses the limitations of claim 1. In addition, Lecouturier also discloses the following limitation(s):

- *directing a matched transport vehicle to a geographic location of the matched individual (Lecouturier ¶ 0134).*

Claim 7:

Lecouturier/Camer, as shown above, discloses the limitations of claim 1. In addition, Lecouturier also discloses the following limitation(s):

- *providing identifying characteristics of a matched transport vehicle to the matched individual and identifying characteristics of a matched individual to the matched transport vehicle (Lecouturier ¶ 0126; ¶ 0130).*

Claim 10:

Lecouturier/Camer, as shown above, discloses the limitations of claim 1. In addition, Lecouturier also discloses the following limitation(s):

- *determining the distance between said matched transport vehicle and said matched individual (Lecouturier ¶ 0086, ¶ 0136).*

Claim 12:

Lecouturier/Camer, as shown above, discloses the limitations of claim 11. In addition, Lecouturier also discloses the following limitation(s):

- *a plurality of wireless data communicators, each said communicator being disposed in a respective transport vehicle for delivering information to said electronic registry of capacity indicative of the spare transport capacity and location of said respective transport vehicle (Lecouturier ¶ 0134).*

Claim 13:

Lecouturier/Camer, as shown above, discloses the limitations of claim 11. In addition, Lecouturier also discloses the following limitation(s):

- *a plurality of means for delivering information to said electronic registry of demand indicative of the transport demands of a plurality of individuals (Lecouturier ¶ 0134).*

Claim 14:

Lecouturier/Camer, as shown above, discloses the limitations of claim 11. In addition, Lecouturier also discloses the following limitation(s):

- *a network operations center for effecting at least one of bringing service irregularities to the attention of operations personnel, alerting operations personnel to a missed pick-up, providing automated escalation of response of a transport vehicle, continuously tracking a transportation vehicle and booking a request for service (Lecouturier ¶ 0134).*

Claim 15:

Lecouturier/Camer, as shown above, discloses the limitations of claim 11. In addition, Lecouturier also discloses the following limitation(s):

- *secondary registry of capacity containing an indication of the spare transport capacity and location of a plurality of transport vehicles in at least one of a public and private transportation network and said central processing capability further effects a match of said transport capacity of at least one transport vehicle in said secondary registry of capacity with said transport demand of said at least one individual in said electronic registry of demand (Lecouturier ¶ 0134).*

13. Claims 4, 8, 9, 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lecouturier/Camer in view of Murray et al. (US 2004/0049424 A1)

Claim 4:

Lecouturier/Camer, as shown above, discloses the limitations of claim 1. Regarding the limitation:

- *wherein said indication of transport demand includes requirements for a transport provider to be of at least one of a predetermined level of experience, gender, or membership in a predetermined community (Murray et al. Fig. 17 "Will only travel with other women").*

Lecouturier, in at least ¶¶ 0125-0126 discloses a transport provider providing information, but does not specifically disclose demand requirements based on the driver profile. However, Murray, in at least ¶

0139 and Fig. 17, discloses using a experience and gender as travel requirements. It would have been obvious to one of ordinary skill in the art at the time of the invention to include travel requirements as taught by Murray in the system of Lecouturier, since the claimed invention is merely a combination of old elements, and in the combination each element merely would have performed the same function as it did separately, and one of ordinary skill in the art would have recognized that the results of the combination were predictable.

Claim 8:

Lecouturier/Camer, as shown above, discloses the limitations of claim 1. Regarding the limitation:

- *tracking the pick-up and delivery of the matched individual by the matched transport vehicle* (Lecouturier ¶ 0137).

Lecouturier, in at least ¶ 0137, discloses monitoring the route of a vehicle regarding passenger pick-up, but does not specifically disclose tracking the pickup and delivery of the individual. However, Murray, in at least ¶ 0055 discloses tracking a passenger during a trip. It would have been obvious to one of ordinary skill in the art at the time of the invention to include tracking as taught by Murray in the system of Lecouturier, since the claimed invention is merely a combination of old elements, and in the combination each element merely would have performed the same function as it did separately, and one of ordinary skill in the art would have recognized that the results of the combination were predictable.

Claim 9:

Lecouturier/Camer, as shown above, discloses the limitations of claim 1. Regarding the limitation:

- *automatically re-allocating and rescheduling a missed pick-up of a matched individual to another matched transport vehicle in said registry of capacity.*

Lecouturier, in at least ¶ 0137 discloses monitoring a passenger pickup, but does not specifically disclose rescheduling a missed pickup to another vehicle. However, Murray, in at least ¶ 0107, discloses rescheduling a pickup with another transport vehicle for a missed pick-up. It would have been obvious to

combine the method of providing transportation with the technique of including alternate transportation in case the original transportation plan "falls through" (Murray ¶ 0107).

Claim 16:

Lecouturier/Camer, as shown above, discloses the limitations of claim 1. Regarding the limitation:

- means for tracking usage of the network by transport vehicles and individuals.

Lecouturier, in at least ¶ 0130-0134, discloses passengers and vehicles using a network, but does not specifically disclose tracking usage of the network. However, Murray, in at least ¶¶ 0105-0112, discloses participants tracking the usage of the system. It would have been obvious to one of ordinary skill in the art at the time of the invention to include tracking as taught by Murray in the system of Lecouturier, since the claimed invention is merely a combination of old elements, and in the combination each element merely would have performed the same function as it did separately, and one of ordinary skill in the art would have recognized that the results of the combination were predictable.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Pearce et al. (2007/0027825 A1), Gantz et al. (US 2001/0056363 A1) Oesterling (US 7,062,376 B2), Clark et al. (US 2008/0167892 A1).

Any inquiry of a general nature or relating to the status of this application or concerning this communication or earlier communications from the Examiner should be directed to **Kevin H. Flynn** whose telephone number is **571.270.3108**. The Examiner can normally be reached on Monday-Friday, 9:30am-5:00pm. If attempts to reach the examiner by telephone are unsuccessful, the Examiner's supervisor, **John W. Hayes** can be reached at **571.272.6708**.

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://portal.uspto.gov/external/portal/pair> <<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).

Any response to this action should be mailed to:

Commissioner of Patents

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or faxed to **571-273-8300**.

Application/Control Number: 12/069,656
Art Unit: 3628

Page 12

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/Kevin H. Flynn/
Examiner, Art Unit 3628
1 July 2009

/JOHN W HAYES/
Supervisory Patent Examiner, Art Unit 3628

Notice of References Cited	Application/Control No. 12/069,656	Applicant(s)/Patent Under Reexamination O'SULLIVAN, SEAN	
	Examiner KEVIN FLYNN	Art Unit 3628	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-2004/0158483	08-2004	Lecouturier, Jacques M.	705/006
*	B	US-6,675,150	01-2004	Camer, Dorothy	705/8
*	C	US-2004/0049424	03-2004	Murray et al.	705/014
*	D	US-2008/0167892	07-2008	Clark et al.	705/1
*	E	US-7,062,376	06-2006	Oesterling, Christopher L.	701/207
*	F	US-2007/0027825	02-2007	Pearce et al.	705/417
*	G	US-2001/0056363	12-2001	Gantz et al.	705/9
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

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

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
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	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.

<i>Index of Claims</i> 	Application/Control No. 12069656	Applicant(s)/Patent Under Reexamination O'SULLIVAN, SEAN
	Examiner KEVIN FLYNN	Art Unit 3628

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

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47										
CLAIM		DATE								
Final	Original	07/01/2009								
	1	✓								
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	14	✓								
	15	✓								
	16	✓								

Search Notes 	Application/Control No. 12069656	Applicant(s)/Patent Under Reexamination O'SULLIVAN, SEAN
	Examiner KEVIN FLYNN	Art Unit 3628

SEARCHED			
Class	Subclass	Date	Examiner

SEARCH NOTES		
Search Notes	Date	Examiner
Searched EAST	7/1/09	KHF

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner

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EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	1	"20080195428" and software	US-PGPUB; USPAT; USOCR	OR	ON	2009/07/01 19:29
S1	326	(carpool or "car pool")	US-PGPUB; USPAT; USOCR	OR	ON	2009/06/29 11:30
S2	61	"705".clas. and (carpool or "car pool")	US-PGPUB; USPAT; USOCR	OR	ON	2009/06/29 11:30
S3	1	("20040158483").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/06/29 18:56
S4	22	("20030014302" "20040049424" "4360875" "0477463" "0489445" "0491055" "0491699" "5168451" "5168452" "5272638" "5371678" "5550482" "5604676" "5739774" "6339745" "6636145" "6697730" "6754634"). PN.	US-PGPUB; USPAT; USOCR	OR	ON	2009/07/01 17:10

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PLUS Search Results for S/N 12069656, Searched Mon Jun 29 12:30:09 EDT 2009
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1-173 P.007/011 F-315

12/069 652

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/US 08/01820

Box No. 1 Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of:
☒ the international application in the language in which it was filed.
☐ a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).
2. ☐ This opinion has been established taking into account the rectification of an obvious mistake authorized by or notified to this Authority under Rule 91 (Rule 43bis.1(a)).
3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, this opinion has been established on the basis of:
 - a. type of material
☐ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material
☐ on paper
☐ in electronic form
 - c. time of filing/furnishing
☐ contained in the international application as filed
☐ filed together with the international application in electronic form
☐ furnished subsequently to this Authority for the purposes of search
4. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
5. Additional comments:

Form PCT/ISA/237 (Box No. 1) (April 2007)

PAGE 1/5 * RCVD AT 10/29/2008 3:00:35 PM [Eastern Daylight Time] * SVR:USPTO-EFAXF-6/15 * DNIS:2738300 * CSID: * DURATION (mm:ss):02:56

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T-173 P.008/011 F-315

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/US 08/01820

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	4, 7	YES
	Claims	1-3, 5-8, 9-16	NO
Inventive step (IS)	Claims	NONE	YES
	Claims	1-16	NO
Industrial applicability (IA)	Claims	1-16	YES
	Claims	NONE	NO

2. Citations and explanations:

Claims 1-3, 5-8 and 9-16 lack novelty under PCT Article 33(2) as being anticipated by US 2004/0168483 A1 to LECOUTURIER.

In regard to claim 1, Lecouturier discloses a method of sharing transportation (para [0078]-[0080]), providing an electronic registry of capacity containing an indication of the spare transport capacity and location of a plurality of transport vehicles (para [0083], [0090]), providing an electronic registry of demand containing an indication of the demand for transportation needs of a plurality of individuals (para [0079]-[0080], [0085], [0129]-[0131]), and providing a central processing capability to effect a match of said transport capacity of at least one transport vehicle in said electronic registry of capacity with said transport demand of at least one individual in said electronic registry of demand (para [0086]).

In regard to claim 2, Lecouturier discloses indication of transport demand includes start and destination locations (para [0085]-[0086] [0111]).

In regard to claim 3, Lecouturier discloses indication of transport demand includes at least one of needed capacity of seats, baby seats and wheelchair access (para [0090], [0108], [0139]).

In regard to claim 5, Lecouturier discloses the step of providing automated communication between a matched transport vehicle and individual (para [0131]-[0137]).

In regard to claim 6, Lecouturier discloses the step of directing a matched transport vehicle to a geographic location of the matched individual (para [0089], [0131], [0135]-[0137]).

In regard to claim 8, Lecouturier discloses the step of tracking the pickup and delivery of the matched individual by the matched transport vehicle (para [0129]-[0139]).

In regard to claim 9, Lecouturier discloses the step of automatically reallocating and rescheduling a missed pick-up of a matched individual to another matched transport vehicle in said registry of capacity (para [0085], [0090], [0104]-[0114], [0139]).

In regard to claim 10, Lecouturier discloses the step of automatically determining the distance between said matched transport vehicle and said matched individual (para [0114], [0118]-[0119]).

In regard to claim 11, Lecouturier discloses a ground transportation network (para [0078]-[0080]), an electronic registry of capacity containing an indication of the spare transport capacity and location of a plurality of transport vehicles (para [0083], [0090]), an electronic registry of demand containing an indication of the demand for transportation needs of a plurality of individuals (para [0079]-[0080], [0085], [0129]-[0131]), and a central processing capability to effect a match of said transport capacity of at least one transport vehicle in said electronic registry of capacity with said transport demand of at least one individual in said electronic registry of demand (para [0086]).

In regard to claim 12, Lecouturier discloses a plurality of wireless data communicators, each said communicator being disposed in a respective transport vehicle for delivering information to said electronic registry of capacity indicative of the spare transport capacity and location of said respective transport vehicle (para [0023], [0088]-[0090], [0104]-[0108]).

In regard to claim 13, Lecouturier discloses a plurality of means for delivering information to said electronic registry of demand indicative of the transport demands of a plurality of individuals (para [0085]-[0086]).

In regard to claim 14, Lecouturier discloses a network operations center for effecting at least one of bringing service irregularities to the attention of operations personnel, alerting operations personnel to a missed pick-up, providing automated escalation of response of a transport vehicle, continuously tracking a transportation vehicle and booking a request for service (para [0126], [0134]-[0139]).

[continued supplemental box]

Form PCT/ISA/237 (Box No. V) (April 2007)

NOTES TO FORM PCT/ISA/220

These Notes are intended to give the basic instructions concerning the filing of amendments under Article 19. The Notes are based on the requirements of the Patent Cooperation Treaty, the Regulations and the Administrative Instructions under that Treaty. In case of discrepancy between these Notes and those requirements, the latter are applicable. For more detailed information, see also the *PCT Applicant's Guide*, a publication of WIPO.

In these Notes, "Article," "Rule" and "Section" refer to the provisions of the PCT, the PCT Regulations and the PCT Administrative Instructions, respectively.

INSTRUCTIONS CONCERNING AMENDMENTS UNDER ARTICLE 19

The applicant has, after having received the international search report and the written opinion of the International Searching Authority, one opportunity to amend the claims of the international application. It should however be emphasized that, since all parts of the international application (claims, description and drawings) may be amended during the international preliminary examination procedure, there is usually no need to file amendments of the claims under Article 19 except where, e.g. the applicant wants the latter to be published for the purposes of provisional protection or has another reason for amending the claims before international publication. Furthermore, it should be emphasized that provisional protection is available in some States only (see *PCT Applicant's Guide*, Volume I/A, Annexes B1 and B2).

The attention of the applicant is drawn to the fact that amendments to the claims under Article 19 are not allowed where the International Searching Authority has declared, under Article 17(2), that no international search report would be established (see *PCT Applicant's Guide*, Volume I/A, paragraph 296).

What parts of the international application may be amended ?

Under Article 19, only the claims may be amended.

During the international phase, the claims may also be amended (or further amended) under Article 34 before the International Preliminary Examining Authority. The description and drawings may only be amended under Article 34 before the International Preliminary Examining Authority.

Upon entry into the national phase, all parts of the international application may be amended under Article 28 or, where applicable, Article 41.

When ? Within 2 months from the date of transmittal of the international search report or 16 months from the priority date, whichever time limit expires later. It should be noted, however, that the amendments will be considered as having been received on time if they are received by the International Bureau after the expiration of the applicable time limit but before the completion of the technical preparations for international publication (Rule 46.1).

Where not to file the amendments ?

The amendments may only be filed with the International Bureau and not with the receiving Office or the International Searching Authority (Rule 46.2).

Where a demand for international preliminary examination has been/is filed, see below.

How ? Either by cancelling one or more entire claims, by adding one or more new claims or by amending the text of one or more of the claims as filed.

A replacement sheet must be submitted for each sheet of the claims which, on account of an amendment or amendments, differs from the sheet originally filed.

All the claims appearing on a replacement sheet must be numbered in Arabic numerals. Where a claim is cancelled, no renumbering of the other claims is required. In all cases where claims are renumbered, they must be renumbered consecutively (Section 205(b)).

The amendments must be made in the language in which the international application is to be published.

What documents must/may accompany the amendments ?

Letter (Section 205(b)):

The amendments must be submitted with a letter.

The letter will not be published with the international application and the amended claims. It should not be confused with the "Statement under Article 19(1)" (see below, under "Statement under Article 19(1)").

The letter must be in English or French, at the choice of the applicant. However, if the language of the international application is English, the letter must be in English; if the language of the international application is French, the letter must be in French.

Oct-29-08 09:00pm From-

T-173 P.010/011 F-315

NOTES TO FORM PCT/ISA/220 (continued)

The letter must indicate the differences between the claims as filed and the claims as amended. It must, in particular, indicate, in connection with each claim appearing in the international application (it being understood that identical indications concerning several claims may be grouped), whether

- (i) the claim is unchanged;
- (ii) the claim is cancelled;
- (iii) the claim is new;
- (iv) the claim replaces one or more claims as filed;
- (v) the claim is the result of the division of a claim as filed.

The following examples illustrate the manner in which amendments must be explained in the accompanying letter:

1. [Where originally there were 48 claims and after amendment of some claims there are 51]:
"Claims 1 to 29, 31, 32, 34, 35, 37 to 48 replaced by amended claims bearing the same numbers; claims 30, 33 and 36 unchanged; new claims 49 to 51 added."
2. [Where originally there were 15 claims and after amendment of all claims there are 11]:
"Claims 1 to 15 replaced by amended claims 1 to 11."
3. [Where originally there were 14 claims and the amendments consist in cancelling some claims and in adding new claims]:
"Claims 1 to 6 and 14 unchanged; claims 7 to 13 cancelled; new claims 15, 16 and 17 added." or
"Claims 7 to 13 cancelled; new claims 15, 16 and 17 added; all other claims unchanged."
4. [Where various kinds of amendments are made]:
"Claims 1-10 unchanged; claims 11 to 13, 18 and 19 cancelled; claims 14, 15 and 16 replaced by amended claim 14; claim 17 subdivided into amended claims 15, 16 and 17; new claims 20 and 21 added."

"Statement under Article 19(1)" (Rule 46.4)

The amendments may be accompanied by a statement explaining the amendments and indicating any impact that such amendments might have on the description and the drawings (which cannot be amended under Article 19(1)).

The statement will be published with the international application and the amended claims.

It must be in the language in which the International application is to be published.

It must be brief, not exceeding 500 words if in English or if translated into English.

It should not be confused with and does not replace the letter indicating the differences between the claims as filed and as amended. It must be filed on a separate sheet and must be identified as such by a heading, preferably by using the words "Statement under Article 19(1)."

It may not contain any disparaging comments on the international search report or the relevance of citations contained in that report. Reference to citations, relevant to a given claim, contained in the international search report may be made only in connection with an amendment of that claim.

Consequence if a demand for international preliminary examination has already been filed

If, at the time of filing any amendments and any accompanying statement, under Article 19, a demand for international preliminary examination has already been submitted, the applicant must preferably, at the time of filing the amendments (and any statement) with the International Bureau, also file with the International Preliminary Examining Authority a copy of such amendments (and of any statement) and, where required, a translation of such amendments for the procedure before that Authority (see Rules 55.3(a) and 62.2, first sentence). For further information, see the Notes to the demand form (PCT/IPEA/401).

If a demand for international preliminary examination is made, the written opinion of the International Searching Authority will, except in certain cases where the International Preliminary Examining Authority did not act as International Searching Authority and where it has notified the International Bureau under Rule 66.1bis(b), be considered to be a written opinion of the International Preliminary Examining Authority. If a demand is made, the applicant may submit to the International Preliminary Examining Authority a reply to the written opinion together, where appropriate, with amendments before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later (Rule 43bis.1(c)).

Consequence with regard to translation of the international application for entry into the national phase

The applicant's attention is drawn to the fact that, upon entry into the national phase, a translation of the claims as amended under Article 19 may have to be furnished to the designated/elected Offices, instead of, or in addition to, the translation of the claims as filed.

For further details on the requirements of each designated/elected Office, see the *PCT Applicant's Guide*, Volume II.

Oct-28-08 03:00pm From-

T-173 P.011/011 F-315

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/US 08/01820

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of:

[supplemental box V.2: Reasoned Statement]

In regard to claim 15, Lecouturier discloses secondary registry of capacity containing an indication of the spare transport capacity and location of a plurality of transport vehicles in at least one of a public and private transportation network (para [0126], [0134]-[0139]) and said central processing capability further effects a match of said transport capacity of at least one transport vehicle in said secondary registry of capacity with said transport demand of said at least one individual in said electronic registry of demand (para [0086]).

In regard to claim 16, Lecouturier discloses means for tracking usage of the network by transport vehicles and individuals (para [0080]-[0090]).

Claims 4 and 7 lack an inventive step under PCT Article 33(3) as being obvious over LECOUTURIER as detailed prior, in view of US 2004/0049424 A1 to MURRAY et al. (hereinafter Murray).

In regard to claim 4, while Lecouturier discloses the invention of Claim 1, Lecouturier does not expressly disclose indication of transport demand includes requirements for a transport provider to be of at least one of a predetermined level of experience, gender, or membership in a predetermined community.

However, Murray expressly discloses indication of transport demand includes requirements for a transport provider to be of at least one of a predetermined level of experience, gender, or membership in a predetermined community (para [0139]).

It would have been obvious to one skilled in the art to modify the transportation rideshare match effecting system and method set forth by Lecouturier with the transportation rideshare match effecting system and methods utilizing drivers and riders profiles in order to more efficiently match drivers and riders participating in a ridesharing arrangement by aligning persons interests, preferences, and specifications (Lecouturier, para [0003]-[0004], [0047], Murray para [0012]-[0013], [0084]-[0087], [0136]-[0141]).

In regard to claim 7, while Lecouturier discloses the invention substantially as claimed, Lecouturier does not expressly disclose the step of providing identifying characteristics of a matched transport vehicle to the matched individual and identifying characteristics of a matched individual to the matched transport vehicle.

However, Murray expressly discloses the step of providing identifying characteristics of a matched transport vehicle to the matched individual and identifying characteristics of a matched individual to the matched transport vehicle (para [0084]-[0087], [0136]-[0141]).

It would have been obvious to one skilled in the art to modify the transportation rideshare match effecting system and method set forth by Lecouturier with the transportation rideshare match effecting system and methods utilizing drivers and riders profiles in order to more efficiently match drivers and riders participating in a ridesharing arrangement by aligning persons interests, preferences, and specifications (Lecouturier, para [0003]-[0004], [0047], Murray para [0012]-[0013], [0084]-[0087], [0136]-[0141]).

Claims 1-16 have industrial applicability as defined by PCT Article 33(4) because the subject matter claimed can be made or used in industry.

Form PCT/ISA/237 (Supplemental Box) (April 2007)

PAGE 5/5 * RCVD AT 10/29/2008 3:00:35 PM [Eastern Daylight Time] * SVR:USPTO-EFXXF-6/15 * DNIS:2738300 * CSID: * DURATION (mm-ss):02:56

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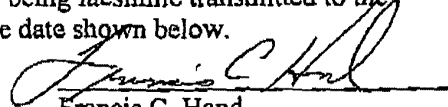
T-172 P.001/011 F-315

OCT 29 2008

CERTIFICATION OF FACSIMILE TRANSMISSION

I hereby certify that this paper is being facsimile transmitted to the
USPTO at (571) 273-8300 on the date shown below.

OCTOBER 29 2008
Date


Francis C. Hand

Art Unit

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Examiner:

Applicant: Sean O'Sullivan

Serial No: 12/069,656

Filed: February 12, 2008

Title: Shared Transport System and Service Network

Customer No.:27192

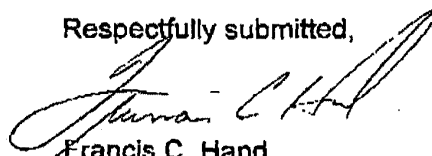
Commissioner for Patents
P.O. Box 1450
Alexandria, VA. 22313-1450

**SUBMISSION OF INTERNATIONAL SEARCH REPORT
AND FORM PTO/SB/08A**

Sir:

Attached herewith is a copy of an International Search Report for PCT
Application PCT/US08/01820 that claims the benefit of the filing date of this US
application and a form PTO SB/08A listing the cited references of the
International Search Report.

Respectfully submitted,


Francis C. Hand
Reg. No. 22,280
Phone: 973-994-1700
Fax: 973-994-1744

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OCT 29 2008

PTO/SB/09a (09-08)

Approved for use through 10/31/2008. 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.

Substitute for form 1448/PTO

INFORMATION DISCLOSURE
STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 1

Complete if Known

Application Number	12/069,656
Filing Date	February 12, 2008
First Named Inventor	
Art Unit	
Examiner Name	
Attorney Docket Number	514810.2

U. S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	Document Number Number-Kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		US- 7,080,019	07-18-2006	Hurzeler	
		US- 7,119,716	10-10-2006	Horstemeyer	
		US- 2004/0049424	03-11-2004	Murray	
		US- 2004/0158483	08-12-2004	Lecouturier	
		US- 2006/0259353	11-16-2006	Gutman	
		US- 2007/0052586	03-08-2007	Horstemeyer	
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FOREIGN PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	Foreign Patent Document Country Code ³ -Number ⁴ -Kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear

Examiner Signature	Date Considered
--------------------	-----------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹ Applicant's unique citation designation number (optional). ² See Kind Codes of USPTO Patent Documents at www.uspto.gov or MPEP 801.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁶ Applicant is to place a check mark here if English language translation is attached.

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 2 hours 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, 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 (1-800-786-9199) and select option 2.

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T-172 P.003/011 F-315

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

PCT

NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL SEARCH REPORT AND
THE WRITTEN OPINION OF THE INTERNATIONAL
SEARCHING AUTHORITY, OR THE DECLARATION

(PCT Rule 44.1)

To: FRANCIS C. HAND CARELLA, BYRNE, BAIN ET AL 5 BECKER FARM ROAD ROSELAND, NJ 07068-1739		Date of mailing (day/month/year) 15 AUG 2008
Applicant's or agent's file reference 514810.2	FOR FURTHER ACTION See paragraphs 1 and 4 below	
International application No. PCT/US 08/01820	International filing date (day/month/year) 12 February 2008 (12.02.2008)	
Applicant O'SULLIVAN, SEAN		

1. ☒ The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.
Filing of amendments and statement under Article 19:
 The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46):
When? The time limit for filing such amendments is normally two months from the date of transmittal of the international search report.
Where? Directly to the International Bureau of WIPO, 34 chemin des Colombettes
 1211 Geneva 20, Switzerland. Facsimile No.: +41 22 740 14 35
For more detailed instructions, see the notes on the accompanying sheet.
2. ☐ The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.
3. ☐ With regard to the protest against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:
 - ☐ the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.
 - ☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.
4. **Reminders**
 Shortly after the expiration of 18 months from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in Rules 90bis.1 and 90bis.3, respectively, before the completion of the technical preparations for international publication.
 The applicant may submit comments on an informal basis on the written opinion of the International Searching Authority to the International Bureau. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established. These comments would also be made available to the public but not before the expiration of 30 months from the priority date.
 Within 19 months from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase until 30 months from the priority date (in some Offices even later); otherwise, the applicant must, within 20 months from the priority date, perform the prescribed acts for entry into the national phase before those designated Offices.
 In respect of other designated Offices, the time limit of 30 months (or later) will apply even if no demand is filed within 19 months.
 See the Annex to Form PCT/IB/301 and, for details about the applicable time limits, Office by Office, see the *PCT Applicant's Guide*, Volume II, National Chapters and the WIPO Internet site.

Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	Authorized officer: Lee W. Young PCT Helpdesk: 571-272-4300 PCT DSP: 571-272-7774
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Form PCT/ISA/220 (January 2004)

(See notes on accompanying sheet)

PAGE 37 * RCVD AT 10/29/2008 2:53:27 PM [Eastern Daylight Time] * SVR:USPTO-EFXXRF-4/4 * DNIS:2738300 * CSID: * DURATION (mm:ss):06:06

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T-172 P.004/011 F-315

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 614810.2	FOR FURTHER ACTION	see Form PCT/ISA/220 as well as, where applicable, item 5 below.
International application No. PCT/US 08/01820	International filing date (day/month/year) 12 February 2008 (12.02.2008)	(Earliest) Priority Date (day/month/year) 12 February 2007 (12.02.2007)
Applicant O'SULLIVAN, SEAN		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 2 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the language, the international search was carried out on the basis of:

- ☒ the international application in the language in which it was filed.
☐ a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(h)).

b. ☐ This international search report has been established taking into account the rectification of an obvious mistake authorized by or notified to this Authority under Rule 91 (Rule 43.6bis(a)).

c. ☐ With regard to any nucleotide and/or amino acid sequence disclosed in the international application, see Box No. I.

2. ☐ Certain claims were found unsearchable (see Box No. II).

3. ☐ Unity of invention is lacking (see Box No. III).

4. With regard to the title,

- ☒ the text is approved as submitted by the applicant.
☐ the text has been established by this Authority to read as follows:

5. With regard to the abstract,

- ☒ the text is approved as submitted by the applicant.
☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the drawings,

- a. the figure of the drawings to be published with the abstract is Figure No. 1 _____
☒ as suggested by the applicant.
☐ as selected by this Authority, because the applicant failed to suggest a figure.
☐ as selected by this Authority, because this figure better characterizes the invention.
- b. ☐ none of the figures is to be published with the abstract.

Form PCT/ISA/210 (first sheet) (April 2007)

PAGE 4/7 * RCVD AT 10/29/2008 2:53:27 PM [Eastern Daylight Time] * SVR:USPTO-EFXRF-4/4 * DNIS:2738300 * CSID: * DURATION (mm-ss):06-06

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T-172 P.005/011 F-315

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 08/01820

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - G06Q 10/00 (2008.04)

USPC - 705/6

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
USPC: 705/6Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
USPC: 180/271; 700/1, 90; 705/1, 6, 7, 8, 13Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
Electronic Databases Searched: USPTO WEST (PGPUB,USPAT,USOCR,EPAB,JPAB); GOOGLE Patents; DIALOG PRO
Search Terms Used: matching carpool/rideshare vehicles/provider + Individual/customer/passenger/occupant/rider/driver profiles, spare/empty/unused transport/seat capacity, global positioning (GPS), wireless connectivity, etc.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2004/0158483 A1 (LECOULTURIER) 12 August 2004 (12.08.2004)	1-3, 5-8, 8-16
Y	Abstract, Para [0002]-[0146]	4, 7
Y	US 2004/0049424 A1 (MURRAY et al.) 11 March 2004 (11.03.2004)	4, 7
	Abstract, Para [0004]-[0027], [0046]-[0147]	
A	US 7,080,019 B1 (HURZELER) 18 July 2006 (18.07.2006)	1-16
	Entire Document	
A	US 2006/0259353 A1 (GUTMANN) 16 November 2006 (16.11.2006)	1-16
	Entire Document	
A, P	US 2007/0052586 A1 (HORSTEMEYER) 08 March 2007 (08.03.2007)	1-16
	Entire Document	

☐ Further documents are listed in the continuation of Box C.

* Special categories of cited documents:

- "A" document defining the general state of the art which is not considered to be of particular relevance

- "E" earlier application or patent but published on or after the international filing date

- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

- "O" document referring to an oral disclosure, use, exhibition or other means

- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

- "X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

- "Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

- "&" document member of the same patent family

Date of the actual completion of the international search

04 August 2008 (04.08.2008)

Date of mailing of the international search report

15 AUG 2008

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US, Commissioner for Patents
P.O. Box 1450, Alexandria, Virginia 22313-1450
Facsimile No. 571-273-3201

Authorized officer:

Les W. Young

PCT Helpdesk: 671-272-4300
PCT DSP: 671-272-7774

Form PCT/ISA/210 (second sheet) (April 2007)

PAGE 5/7 * RCVD AT 10/29/2008 2:53:27 PM [Eastern Daylight Time] * SVR:USPTO-EFXRF-4/4 * DNS:2738300 * CSID: * DURATION (mm:ss):06:06

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T-172 P.006/011 F-315

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

To:
FRANCIS C. HAND
CARELLA, BYRNE, BAIN ET AL
5 BECKER FARM ROAD
ROSELAND, NJ 07068-1739Date of mailing
(day/month/year) **15 AUG 2008**Applicant's or agent's file reference
514810.2

FOR FURTHER ACTION

See paragraph 2 below

International application No.

PCT/US 08/01820

International filing date (day/month/year)

12 February 2008 (12.02.2008)

Priority date (day/month/year)

12 February 2007 (12.02.2007)

International Patent Classification (IPC) or both national classification and IPC

IPC(8) - G06Q 10/00 (2008.04)

USPC - 705/6

Applicant O'SULLIVAN, SEAN

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/US
Mail Stop PCT, Attn: ISA/US
Commissioner for Patents
P.O. Box 1450, Alexandria, Virginia 22313-1450
Facsimile No. 571-273-3201

Date of completion of this opinion

04 August 2008 (04.08.2008)

Authorized officer

Leo W. Young

PCT Helpdesk: 671-272-4300
PCT OSP: 671-272-7774

Form PCT/ISA/237 (cover sheet) (April 2007)

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WRITTEN OPINION OF THE
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International application No.

PCT/US 03/01820

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
12/069,656	02/12/2008	Sean O'Sullivan	

CONFIRMATION NO. 7373

PUBLICATION NOTICE



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Francis C. Hand Esq.,
c/o Carella, Byrne, Bain, Gilfillan, Cecchi,
Stewart & Olstein
5 Becker Farm Road
Roseland, NJ 07068

Title:Shared transport system and service network

Publication No.US-2008-0195428-A1

Publication Date:08/14/2008

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APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	TOT CLAIMS	IND CLAIMS
12/069,656	02/12/2008	3652	515		16	2

CONFIRMATION NO. 7373

Francis C. Hand Esq.,
c/o Carella, Byrne, Bain, Gilfillan, Cecchi,
Stewart & Olstein
5 Becker Farm Road
Roseland, NJ 07068

FILING RECEIPT



Date Mailed: 03/07/2008

Receipt is acknowledged of this non-provisional 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 APPLICANT, 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 write to the Office of Initial Patent Examination's Filing Receipt Corrections. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections 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**

Applicant(s)

Sean O'Sullivan, Kinsale, IRELAND;

Power of Attorney:

Francis Hand--22280	Alan Grant--33389
John Gilfillan III--22746	G. Troublefield--39050
Elliot Olstein--24025	
William Squire--25378	
Raymond Lillie--31778	

Domestic Priority data as claimed by applicant

This appln claims benefit of 60/900,808 02/12/2007

Foreign Applications

If Required, Foreign Filing License Granted: 03/04/2008

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 12/069,656**

Projected Publication Date: 08/14/2008

Non-Publication Request: No

Early Publication Request: No

**** SMALL ENTITY ****

Title

Shared transport system and service network

Preliminary Class

414

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12/069,656	02/12/2008	Sean O'Sullivan	

CONFIRMATION NO. 7373

Francis C. Hand Esq.,
c/o Carella, Byrne, Bain, Gilfillan, Cecchi,
Stewart & Olstein
5 Becker Farm Road
Roseland, NJ07068

Date Mailed. 03/06/2008

NOTICE OF NEW OR REVISED PROJECTED PUBLICATION DATE

The above-identified application has a new or revised projected publication date. The current projected publication date for this application is 08/14/2008. If this is a new projected publication date (there was no previous projected publication date), the application has been cleared by Licensing & Review or a secrecy order has been rescinded and the application is now in the publication queue.

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BOX PATENT APPLICATION
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Application Transmittal Letter

Dear Sir:

Transmitted herewith for filing is the patent application of:

SEAN O'SULLIVAN

entitled: SHARED TRANSPORT SYSTEM AND SERVICE NETWORK

Enclosed with the application are:

1. Specification (60 sheets);
2. Claims (3 sheets);
3. Abstract (1 sheet);
4. Drawings (32 sheets);
5. Declarations of Sean O'Sullivan (executed)
6. Postage paid, return receipt postcard; and
7. Our check number in the amount of \$515 (small entity)

The fee has been calculated as follows:

	<u>Number of Claims Filed</u>			<u>Extra Claims</u>	<u>Rate</u>	<u>Fee</u>
Basic Fee					\$ 155	\$155
Search Fee					\$ 255	\$255
Examination Fee					\$ 105	\$105
Total Claims	16	-	20 =	00	\$ 50	\$
Indep. Claims	2	-	3 =	3	\$ 105	\$
TOTAL:						\$515 (small entity)

The Commissioner is authorized to charge payment of any additional filing fees required under 37 CFR 1.16 associated with this communication or credit any overpayment to Deposit Account No. 03-0678. A duplicate copy of this paper is enclosed.

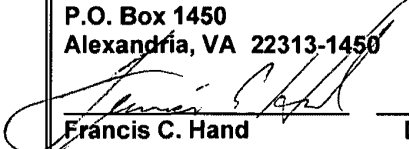
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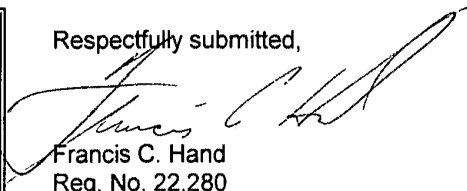
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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450**


Francis C. Hand

2-12-2008
Date

Respectfully submitted,


Francis C. Hand
Reg. No. 22,280
CARELLA, BYRNE, BAIN, GILFILLAN,
CECCHI, STEWART & OLSTEIN
5 Becker Farm Road
Roseland, NJ 07068
Tel. No.: (973) 994-1700

338606

SHARED TRANSPORT SYSTEM AND SERVICE NETWORK

This application claims priority of Provisional Patent Application 60/900,808 filed February 12, 2007.

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 convenient; 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 (CO₂ 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 simultaneous 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, CO₂ 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 allow 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 transport 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 underutilized 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 Fig 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 Portarlinton 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 of sharing transportation comprising the steps of
providing an electronic registry of capacity containing an indication of the spare transport capacity and location of a plurality of transport vehicles;
providing an electronic registry of demand containing an indication of the demand for transportation needs of a plurality of individuals; and
providing a central processing capability to effect a match of said transport capacity of at least one transport vehicle in said electronic registry of capacity with said transport demand of at least one individual in said electronic registry of demand.
2. A method as set forth in claim 1 wherein said indication of transport demand includes start and destination locations.
3. A method as set forth in claim 1 wherein said indication of transport demand includes at least one of needed capacity of seats, baby seats and wheelchair access.
4. A method as set forth in claim 1 wherein said indication of transport demand includes requirements for a transport provider to be of at least one of a predetermined level of experience, gender, or membership in a predetermined community.
5. A method as set forth in claim 1 further comprising the step of providing automated communication between a matched transport vehicle and individual.
6. A method as set forth in claim 1 further comprising the step of directing a matched transport vehicle to a geographic location of the matched individual.

7. A method as set forth in claim 1 further comprising the step of providing identifying characteristics of a matched transport vehicle to the matched individual and identifying characteristics of a matched individual to the matched transport vehicle.
8. A method as set forth in claim 1 further comprising the step of tracking the pick-up and delivery of the matched individual by the matched transport vehicle.
9. A method as set forth in claim 1 further comprising the step of automatically re-allocating and rescheduling a missed pick-up of a matched individual to another matched transport vehicle in said registry of capacity.
10. A method as set forth in claim 1 further comprising the step of automatically determining the distance between said matched transport vehicle and said matched individual.
11. A ground transportation network comprising
 - an electronic registry of capacity containing an indication of the spare transport capacity and location of a plurality of transport vehicles;
 - an electronic registry of demand containing an indication of the demand for transportation needs of a plurality of individuals; and
 - a central processing capability to effect a match of said transport capacity of at least one transport vehicle in said electronic registry of capacity with said transport demand of at least one individual in said electronic registry of demand.
12. A ground transportation network as set forth in claim 11 further comprising a plurality of wireless data communicators, each said communicator being disposed in a respective transport vehicle for delivering information to said

electronic registry of capacity indicative of the spare transport capacity and location of said respective transport vehicle.

13. A ground transportation network as set forth in claim 11 further comprising a plurality of means for delivering information to said electronic registry of demand indicative of the transport demands of a plurality of individuals.
14. A ground transportation network as set forth in claim 11 further comprising a network operations center for effecting at least one of bringing service irregularities to the attention of operations personnel, alerting operations personnel to a missed pick-up, providing automated escalation of response of a transport vehicle, continuously tracking a transportation vehicle and booking a request for service.
15. A ground transportation network as set forth in claim 11 further comprising secondary registry of capacity containing an indication of the spare transport capacity and location of a plurality of transport vehicles in at least one of a public and private transportation network and said central processing capability further effects a match of said transport capacity of at least one transport vehicle in said secondary registry of capacity with said transport demand of said at least one individual in said electronic registry of demand.
16. A ground transportation network as set forth in claim 11 further comprising means for tracking usage of the network by transport vehicles and individuals.

Abstract of the Disclosure

The network system 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 provides an electronic registry of capacity containing an indication of the spare transport capacity and location of a plurality of transport vehicles, an electronic registry of demand containing an indication of the demand for transportation needs of a plurality of individuals and a central processing capability to effect a match of the transport capacity of at least one transport vehicle with the transport demand of at least one individual.

#338116

Figure 1. Shared Transport Network System

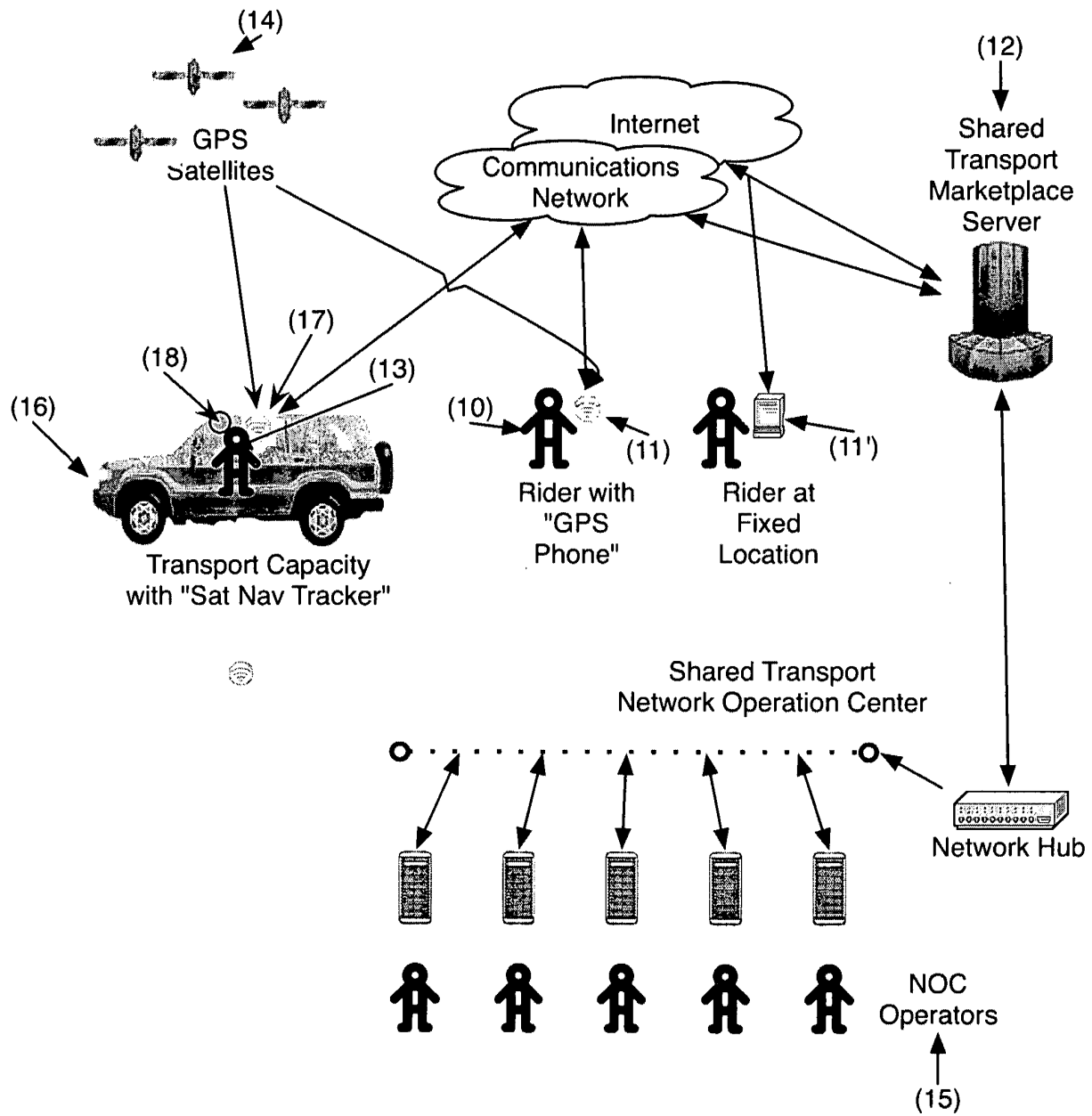
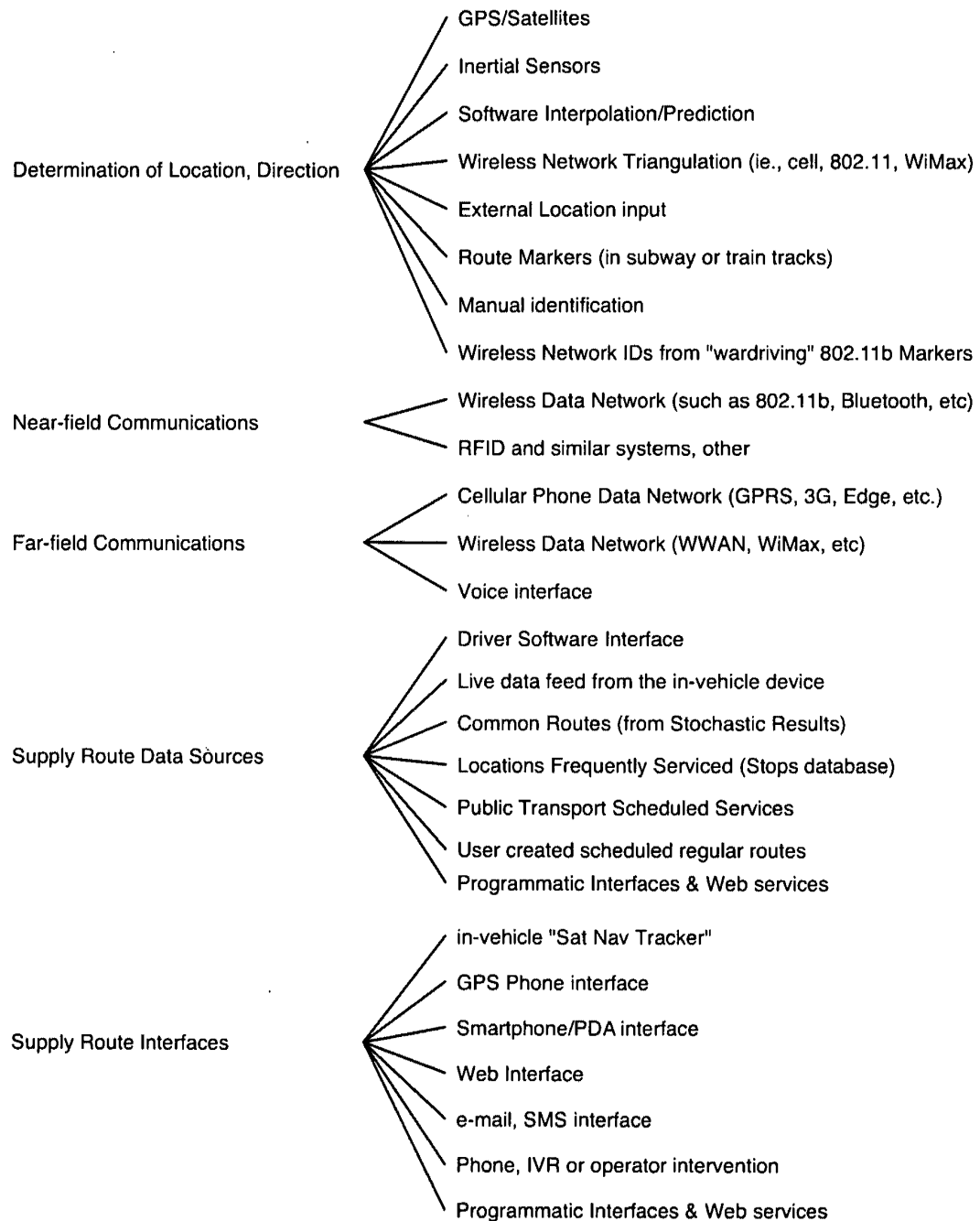
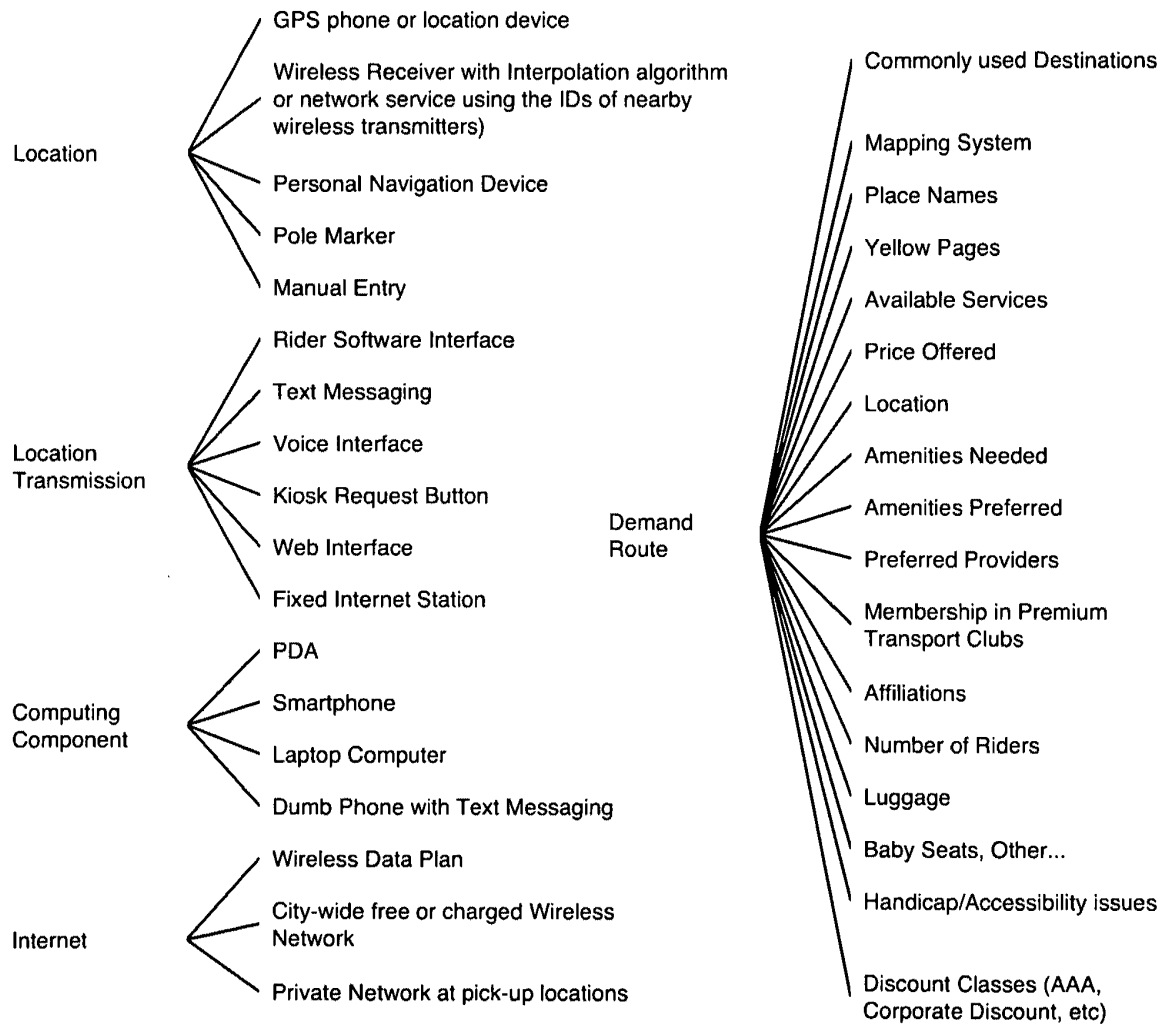


Figure 2. Transport Capacity Computing and Communications Components



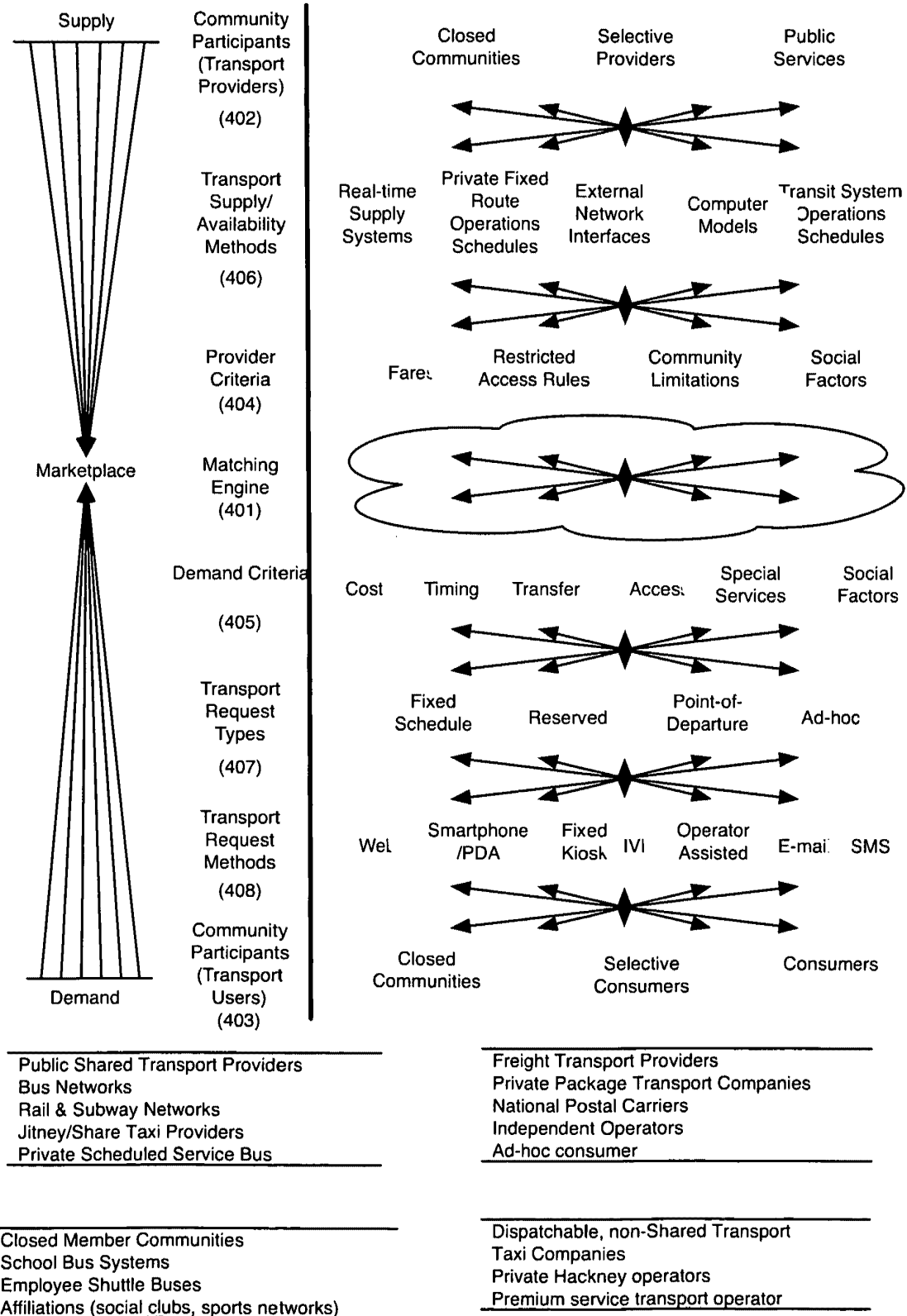
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Figure 3. Rider Technology Components and Information Elements

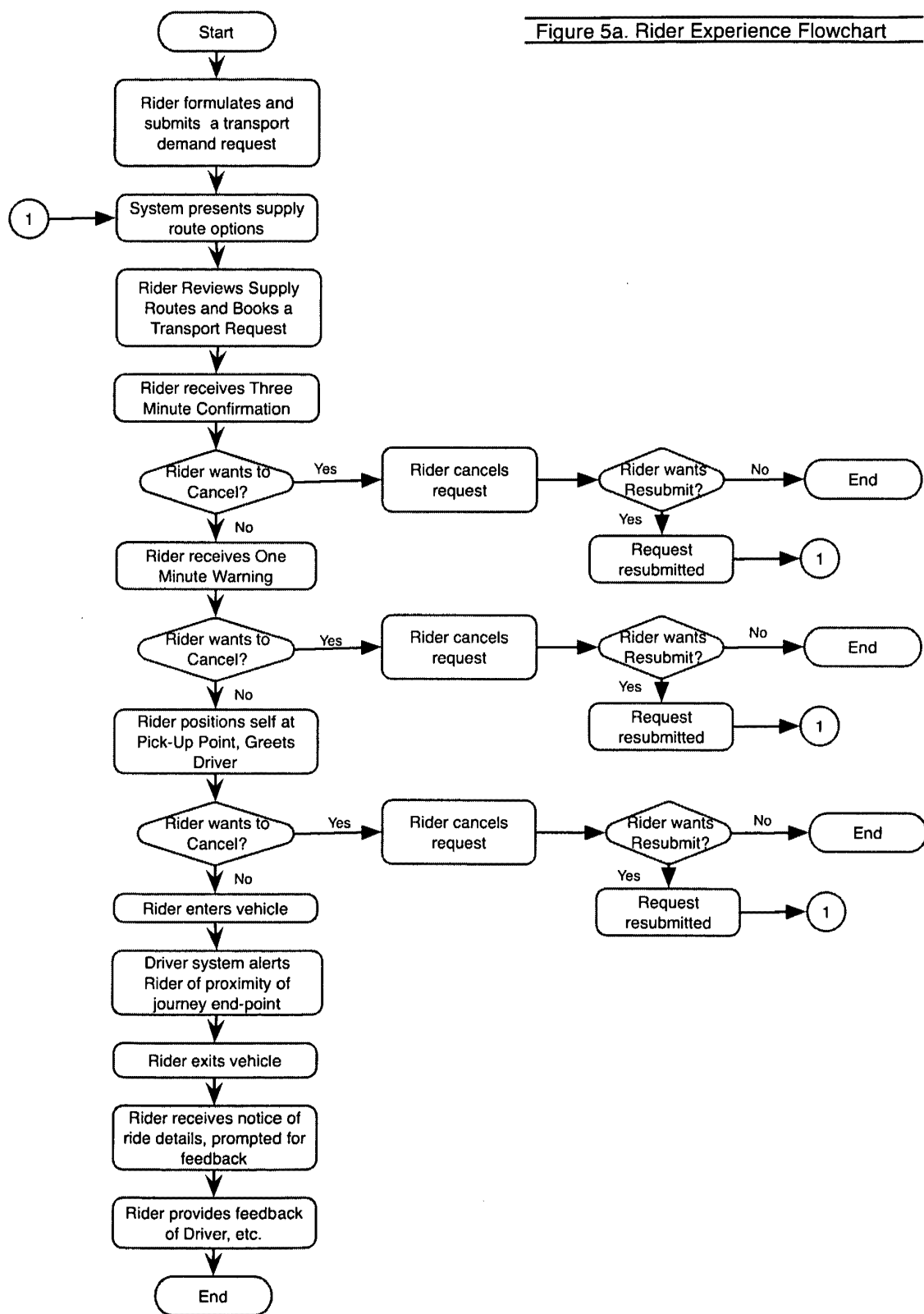


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Figure 4. Shared Transport Marketplace



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Figure 5b. Rider Experience, Functional Options Data and Action Details

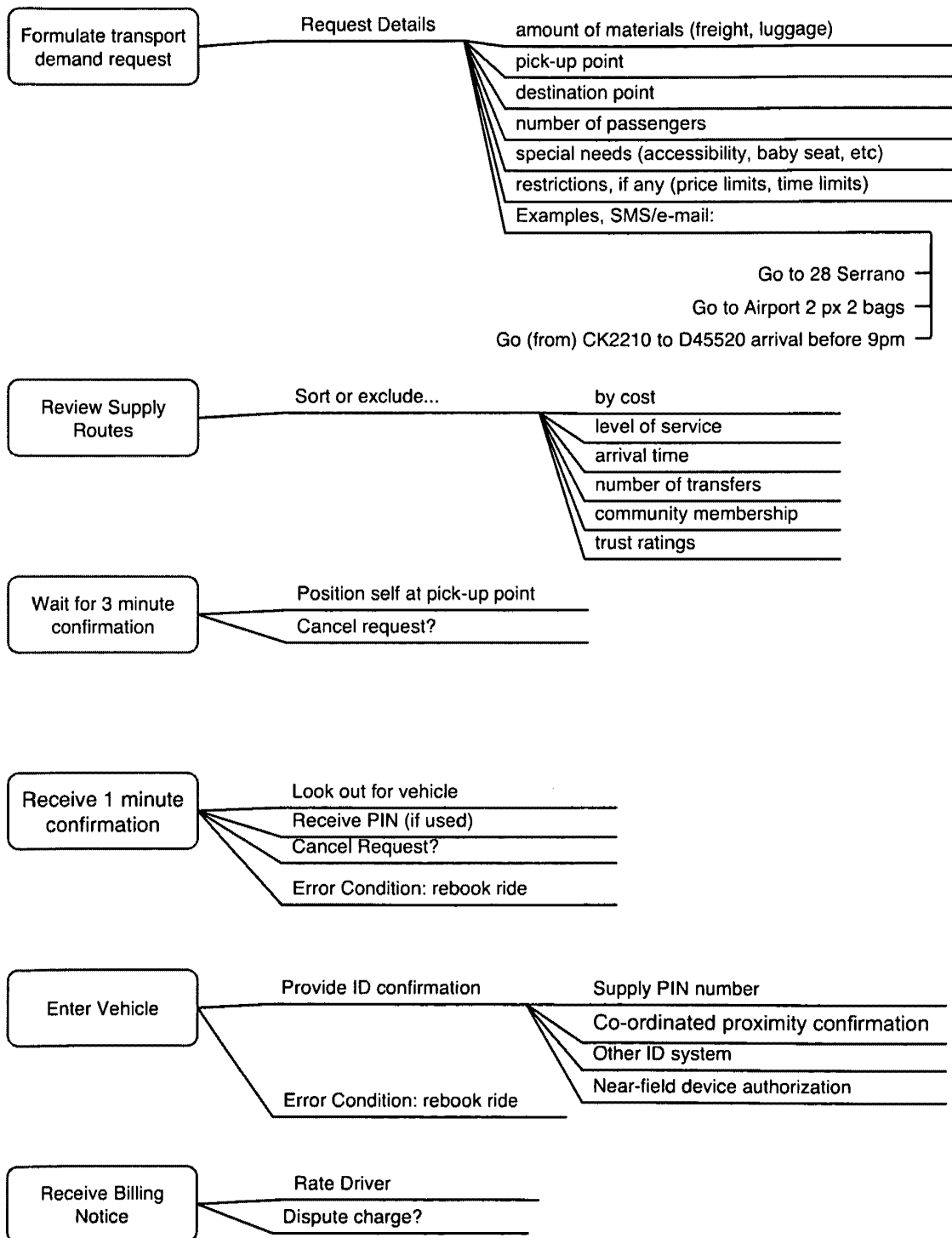


Figure 6a. Driver Experience Flowchart

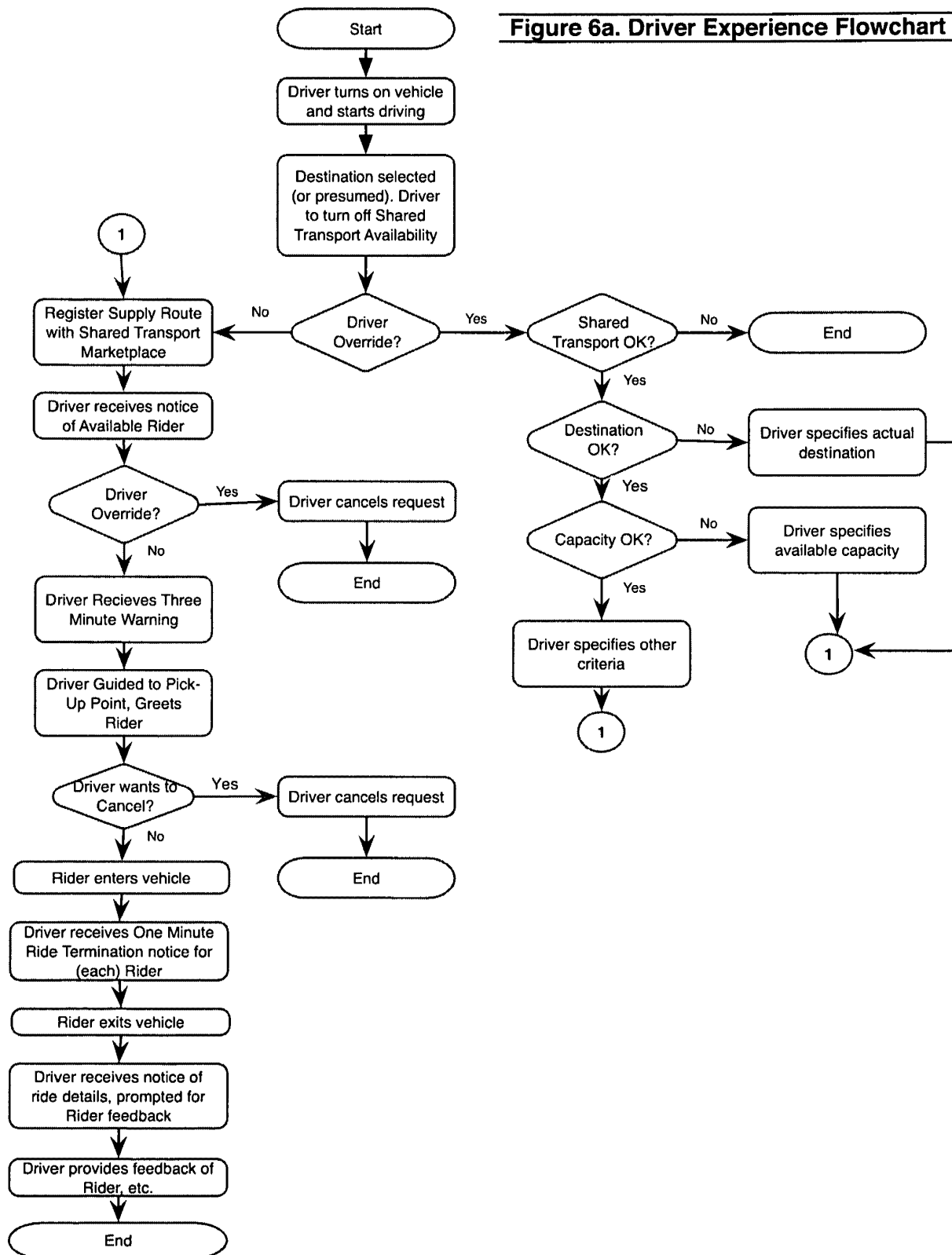
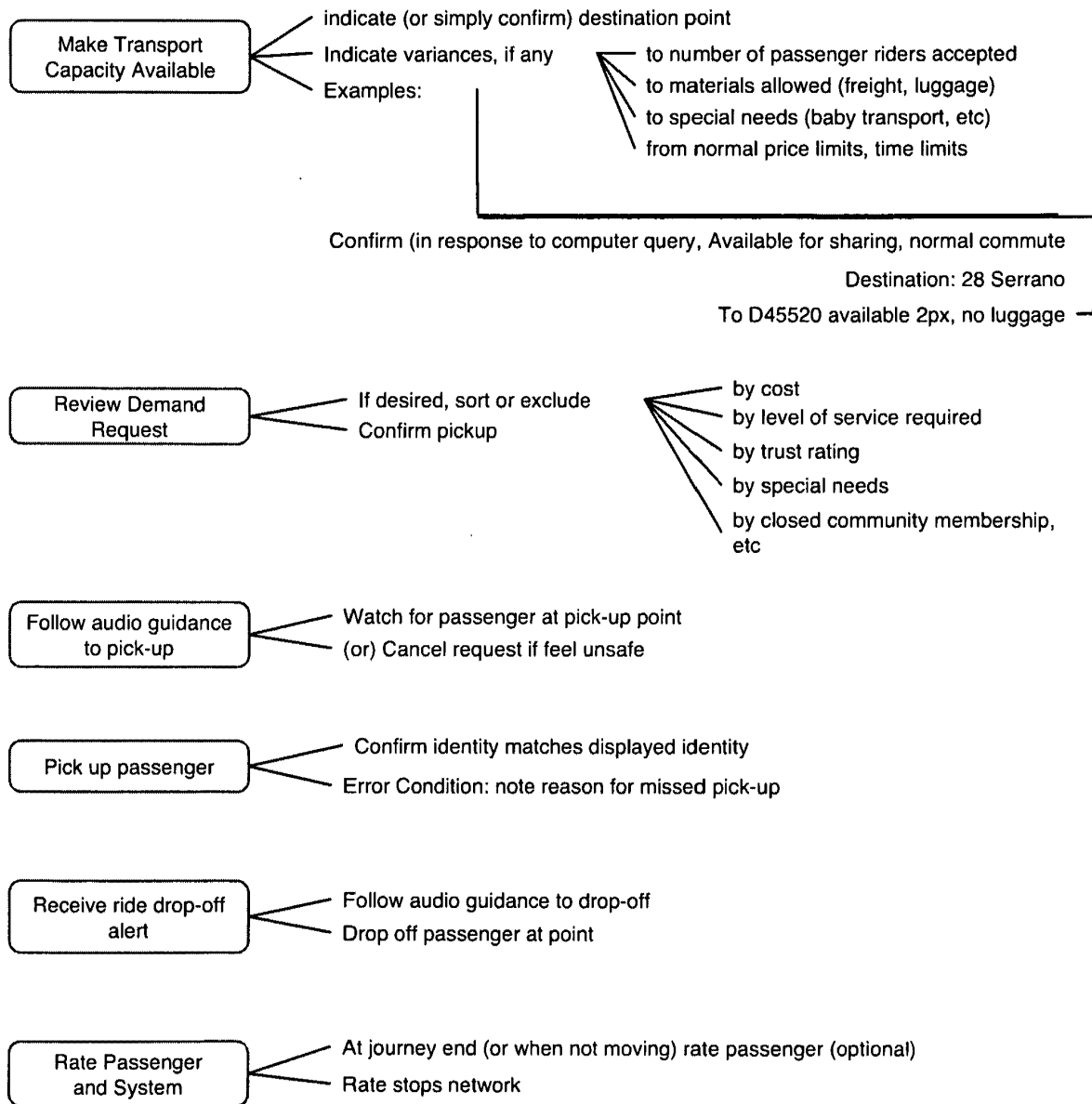
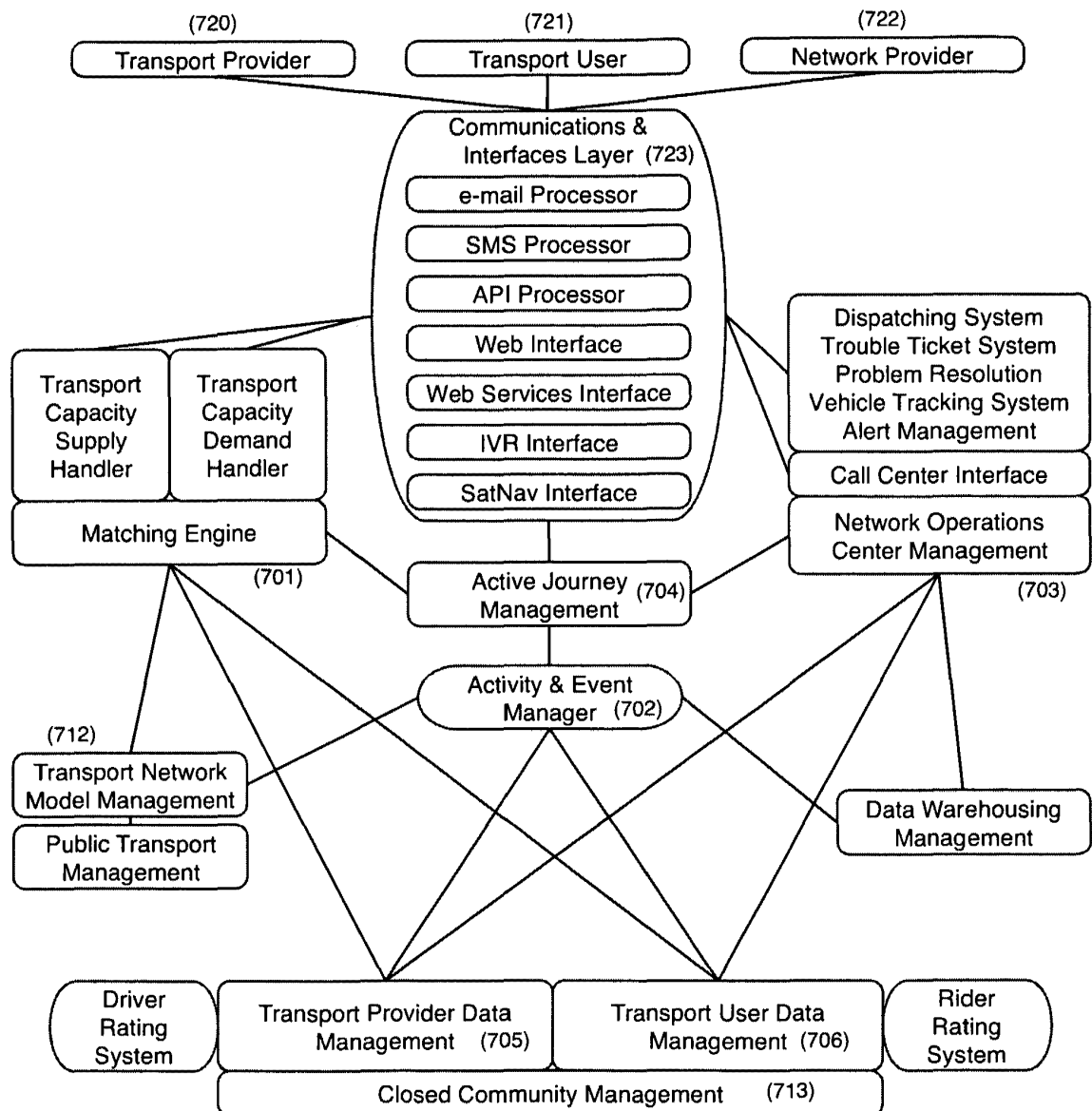


Figure 6b. Driver Experience - Functional Options



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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 (710)

- Stops
- 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

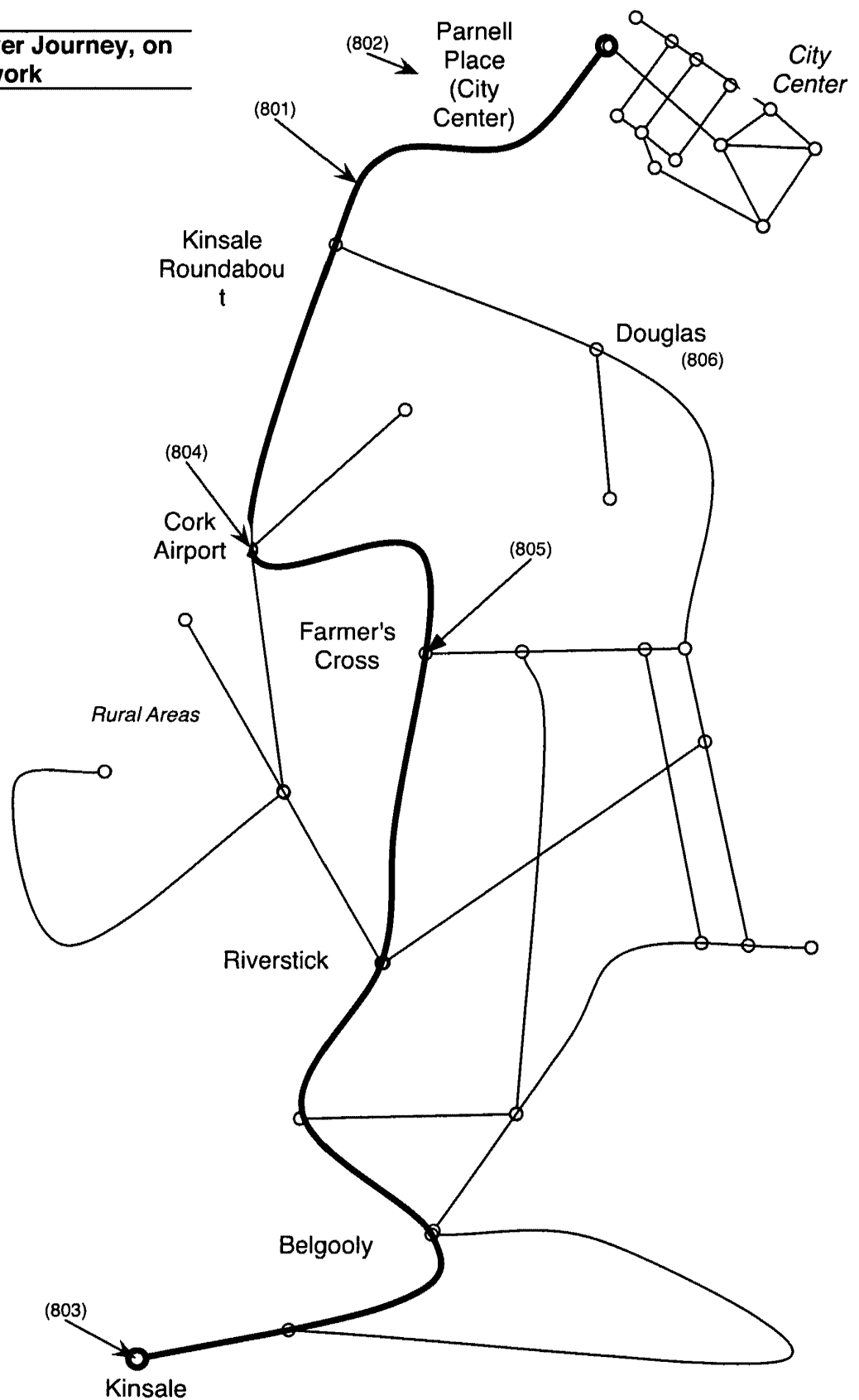
Transport Management Stochastic Analyzer (711)

- Geography Manager
- Public Transport Model
- Visualization Models

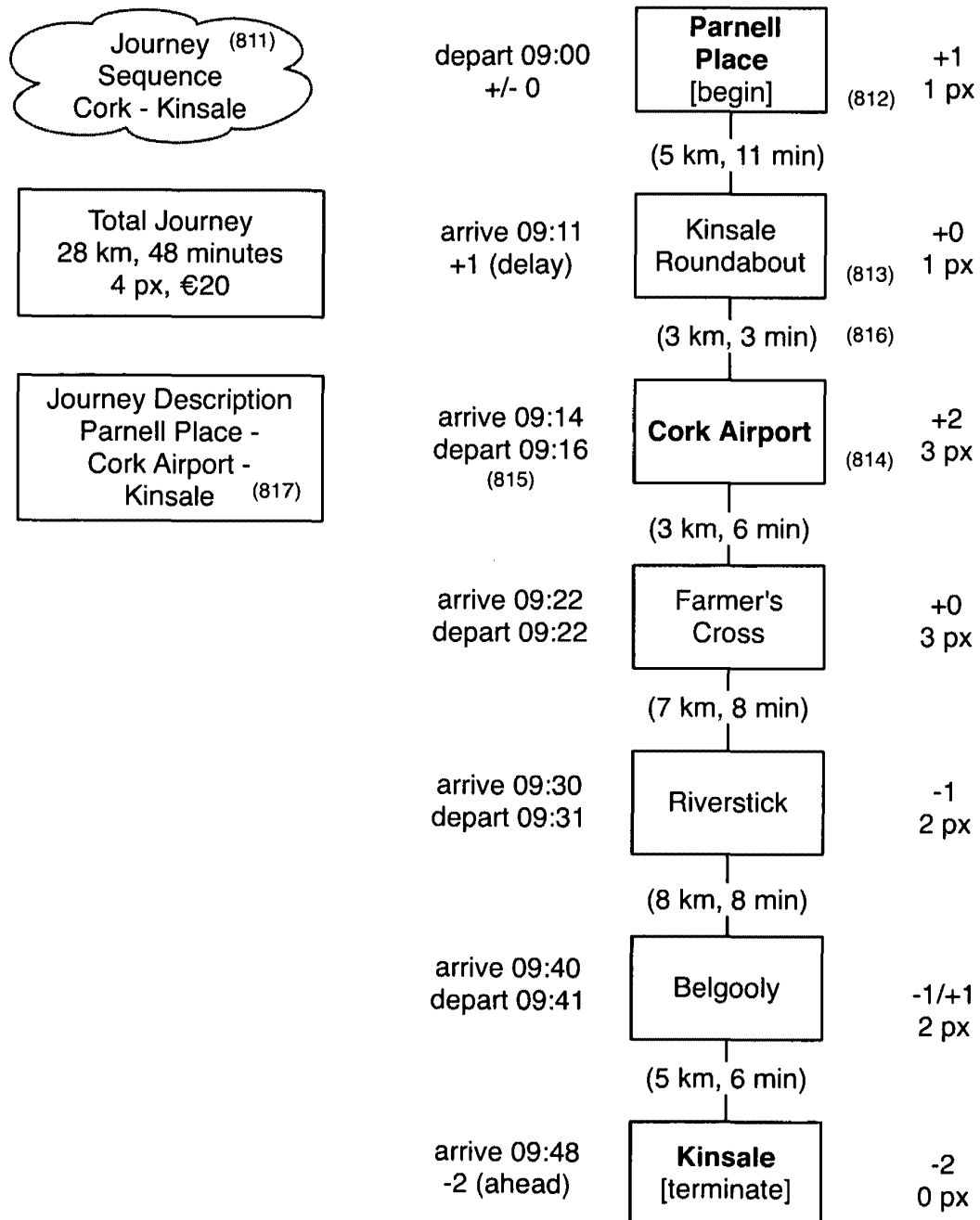
Fig 7. Shared Transport Marketplace Server & Subsystems

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Fig 8a. Driver Journey, on Street Network



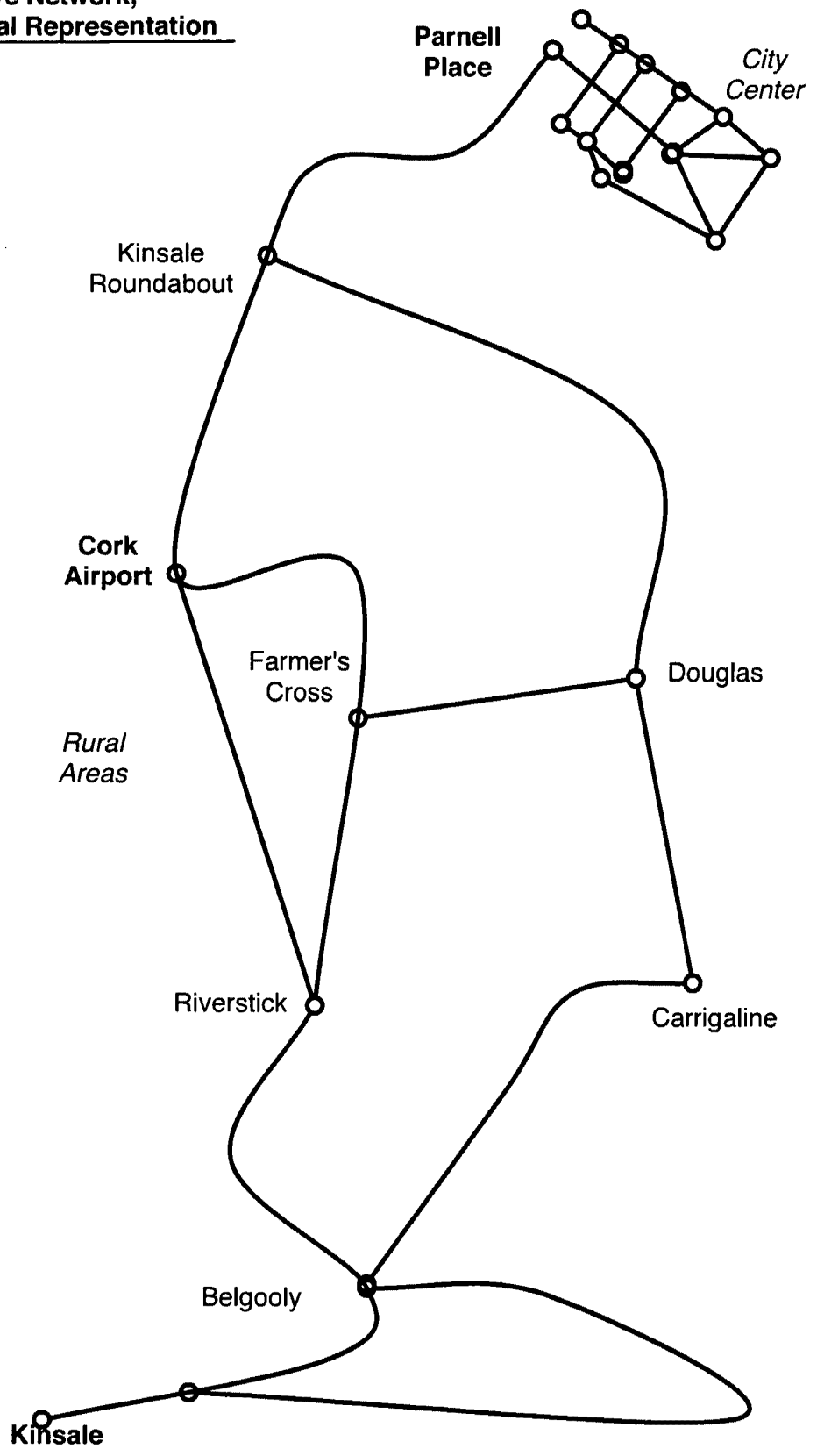
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Fig 8b. Driver Journey Logical Characterization

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**Fig 9a. Active Network,
Geographical Representation**



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Figure 9b. Active Transport Network, Logical Presentation

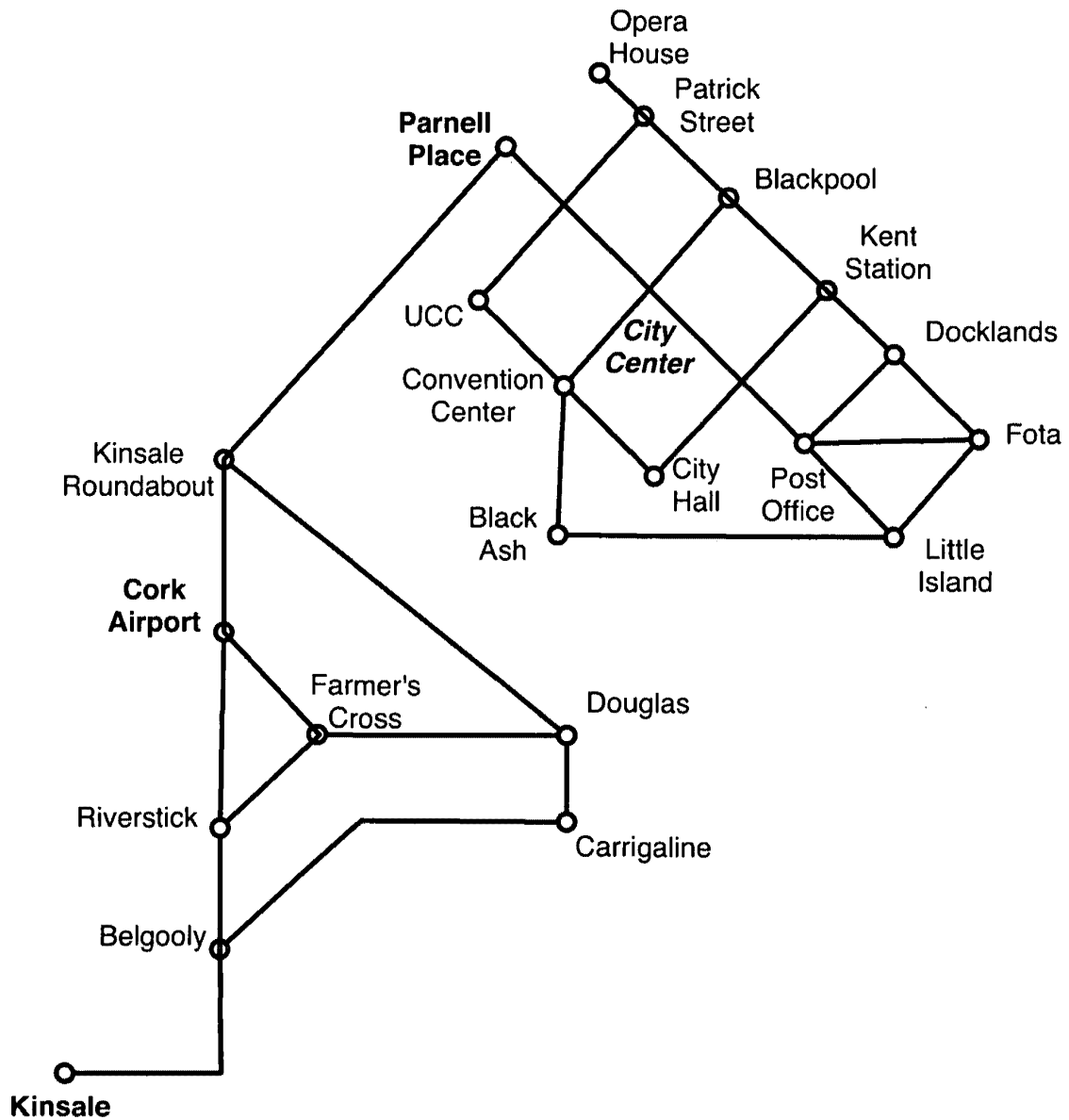
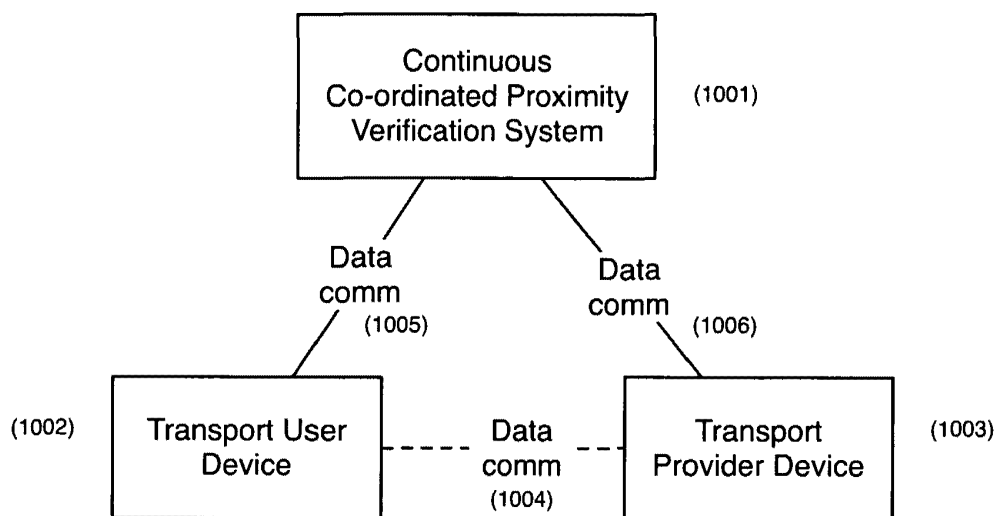


Figure 10a. Elements and communication channels for Continuous Co-ordinated Proximity by independent verification of position



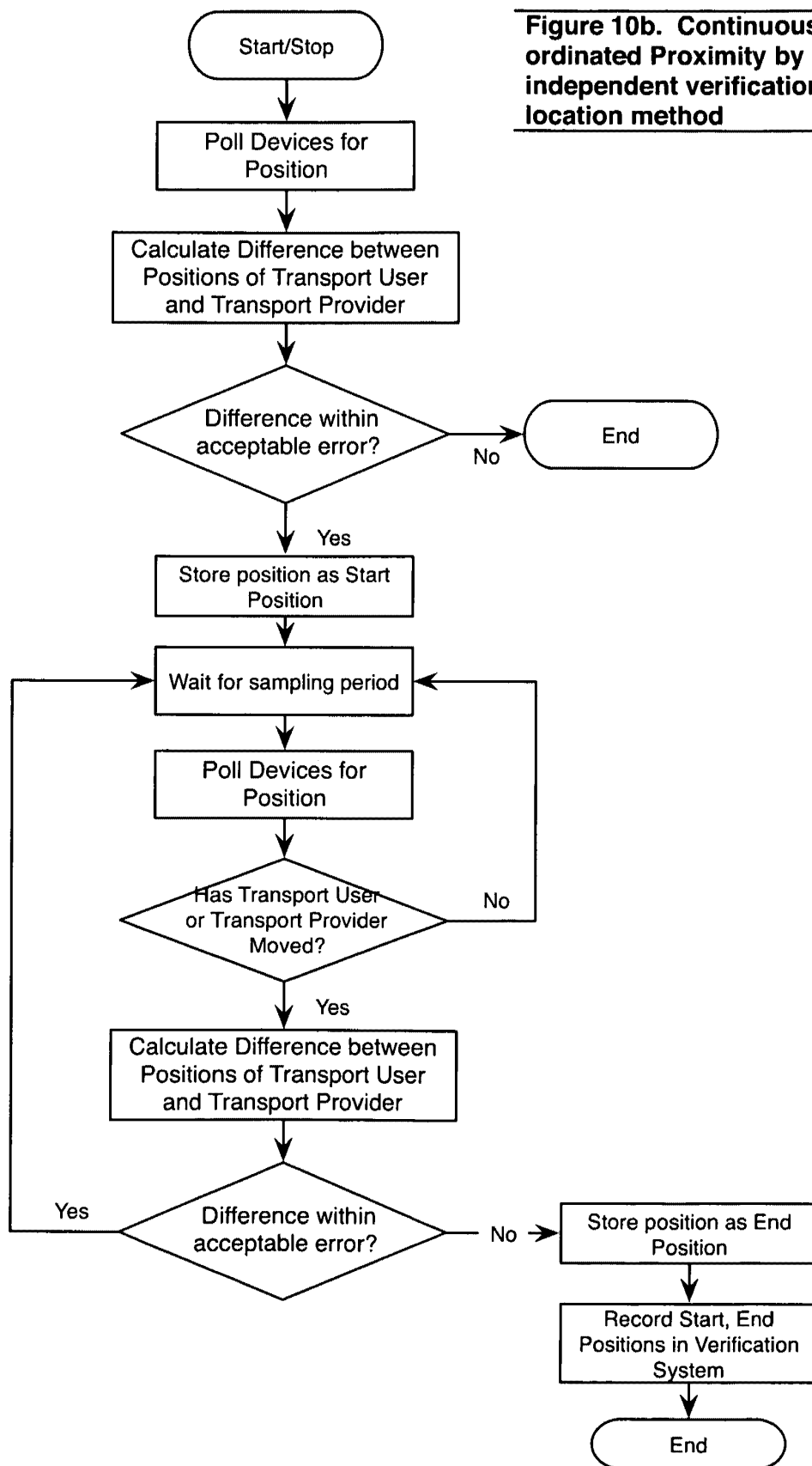
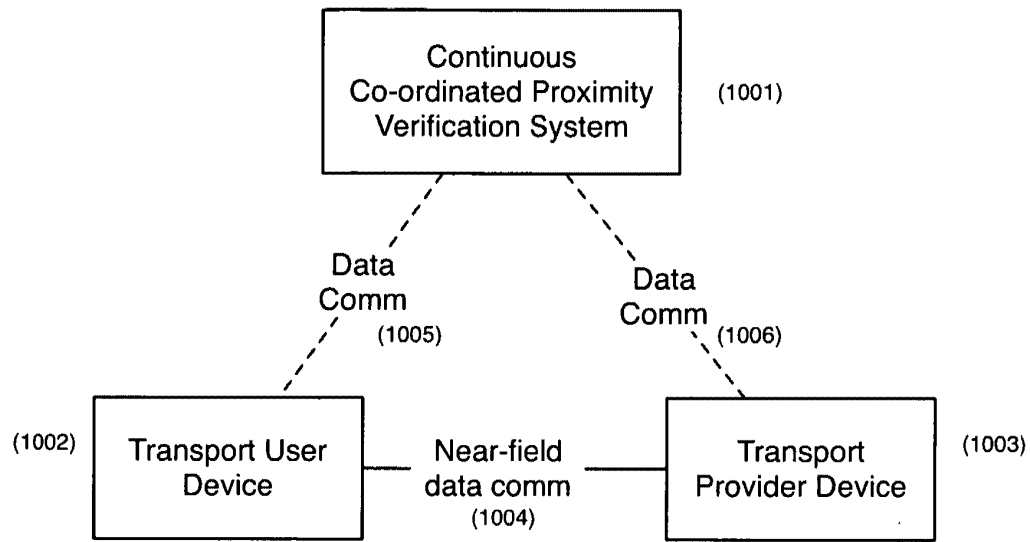


Figure 10b. Continuous Coordinated Proximity by using independent verification of location method

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Figure 11a. Elements and data communications links in Continuous Co-ordinated Proximity by verification of near-field communications link method



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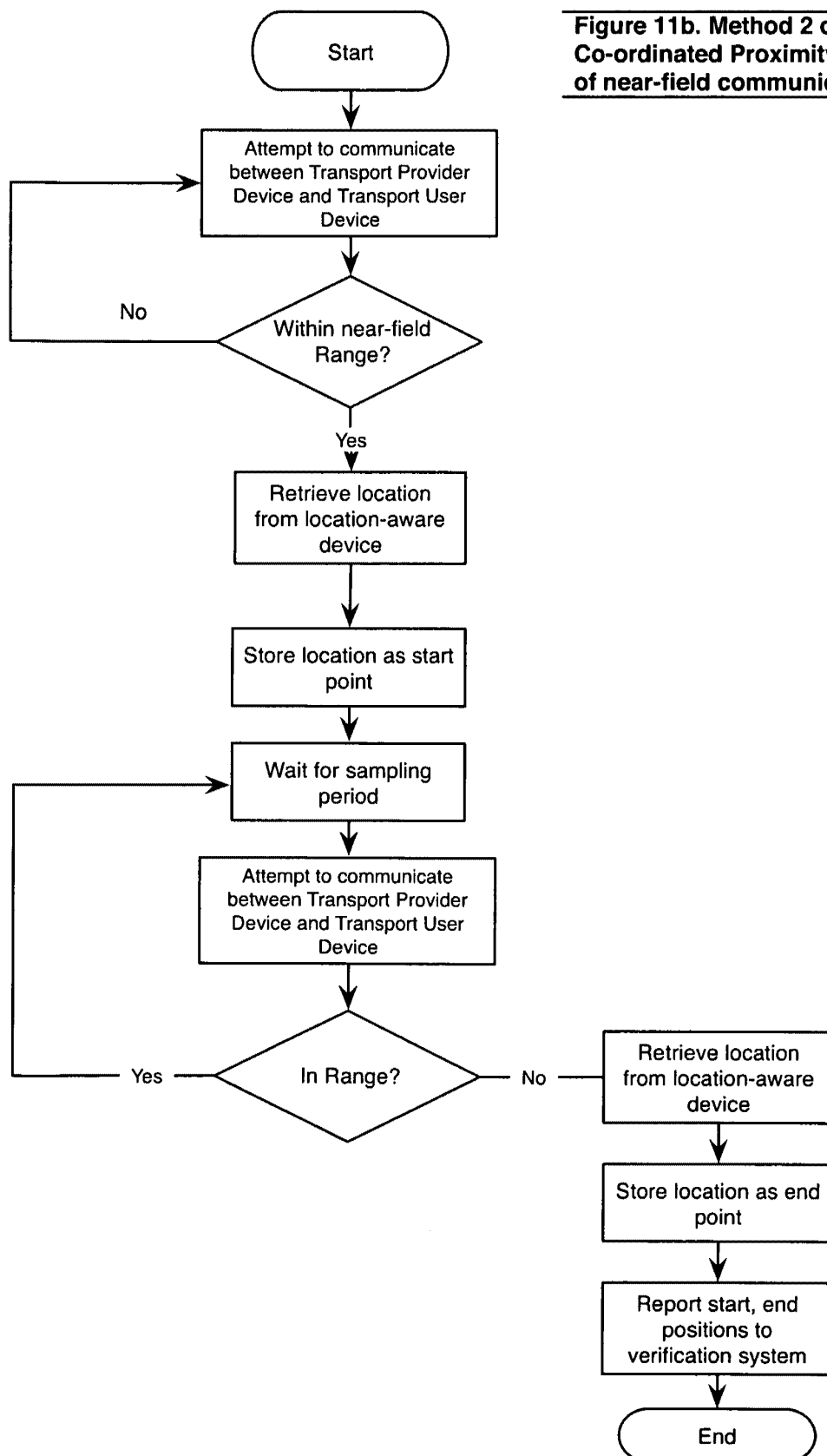


Figure 11b. Method 2 of Continuous Co-ordinated Proximity via verification of near-field communications link

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Fig 12a. Access Control System

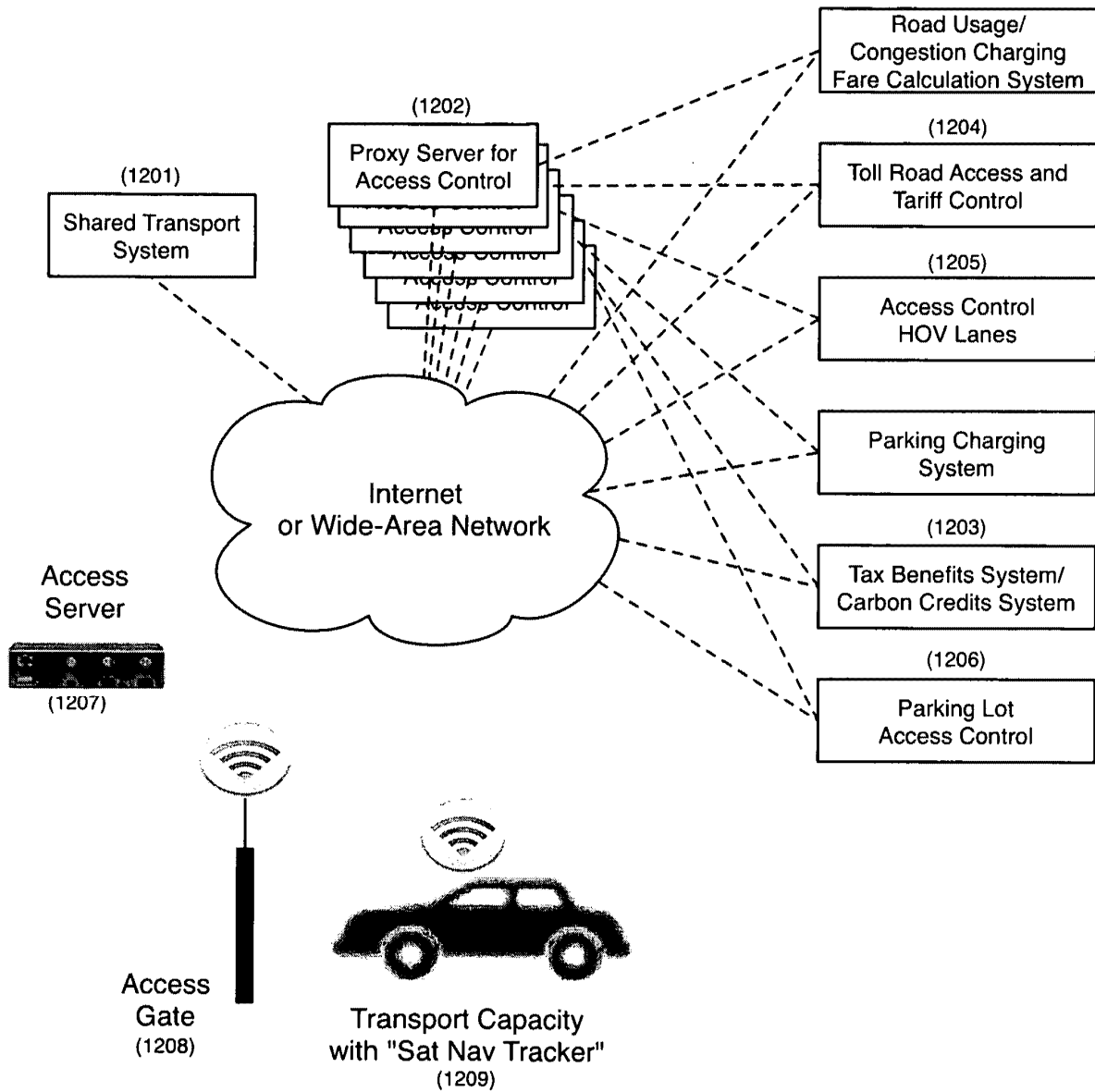


Fig 12b. Access Control System, Server Push Method, Server-side Logic

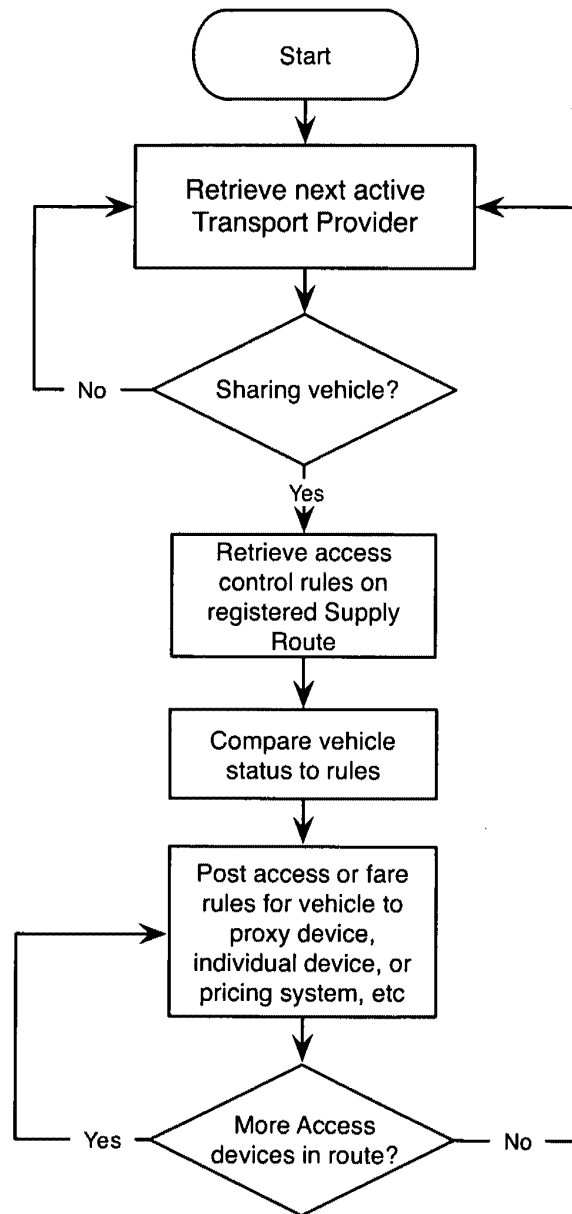


**Fig 12c. Access Control System,
Server Push Method, Client-side Logic**

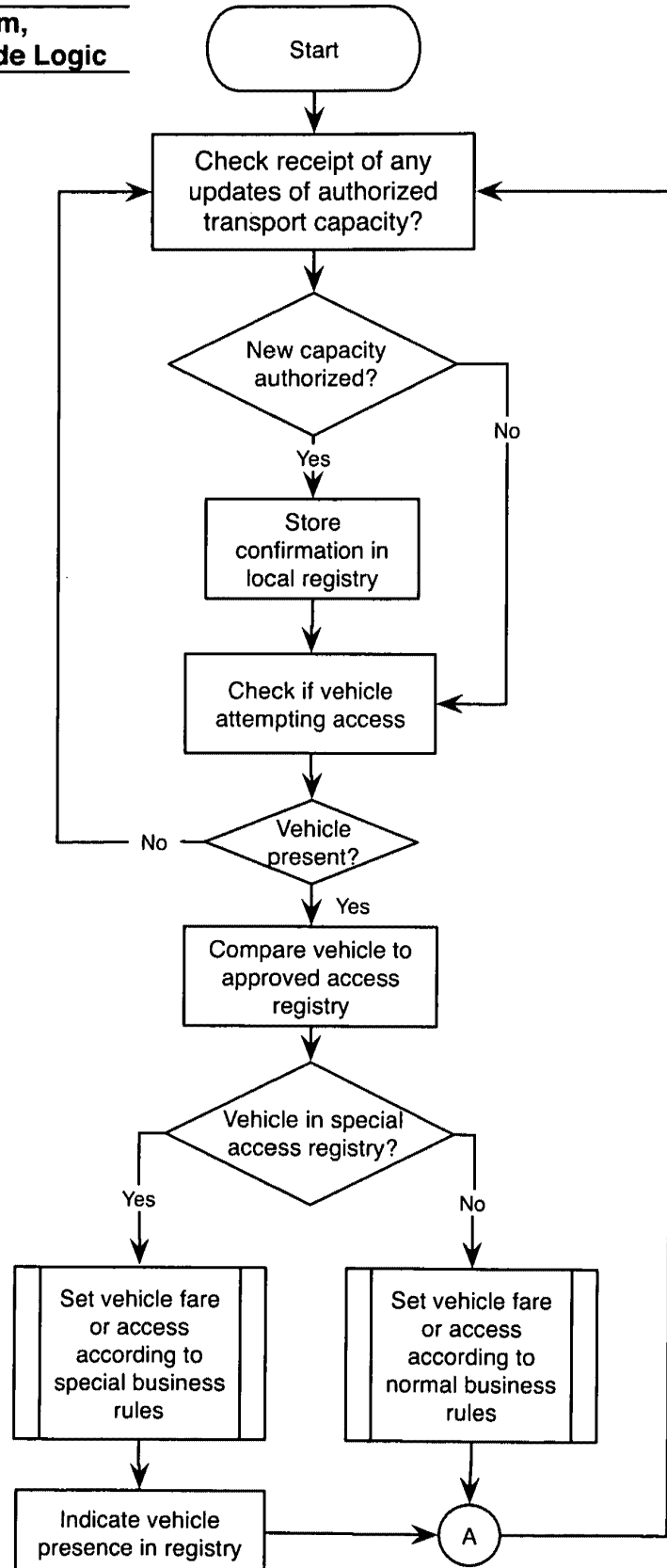


Fig 12d. Access Control System, Client Pull Method, Central Server-Side Logic

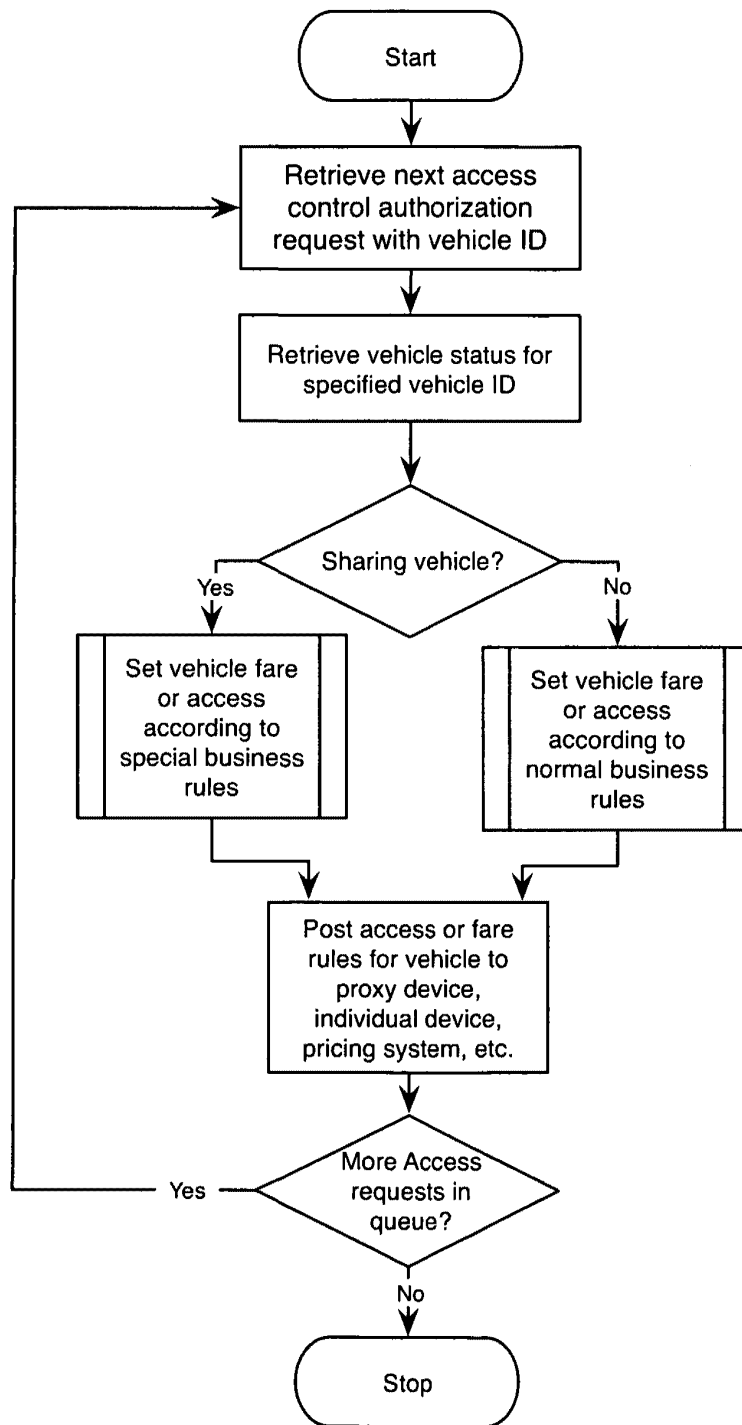


Fig 12e. Access Control System, Client Pull Method, Client-side Logic

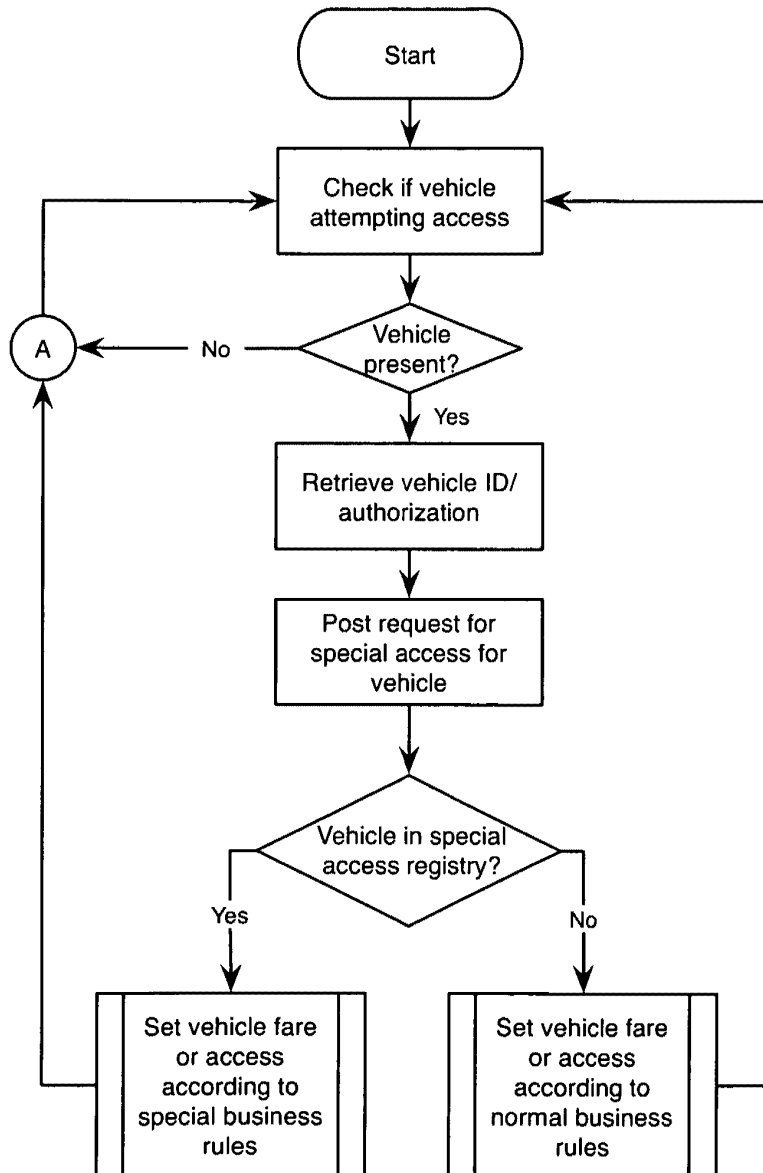


Fig 13. Transport Community Proxy Message Service

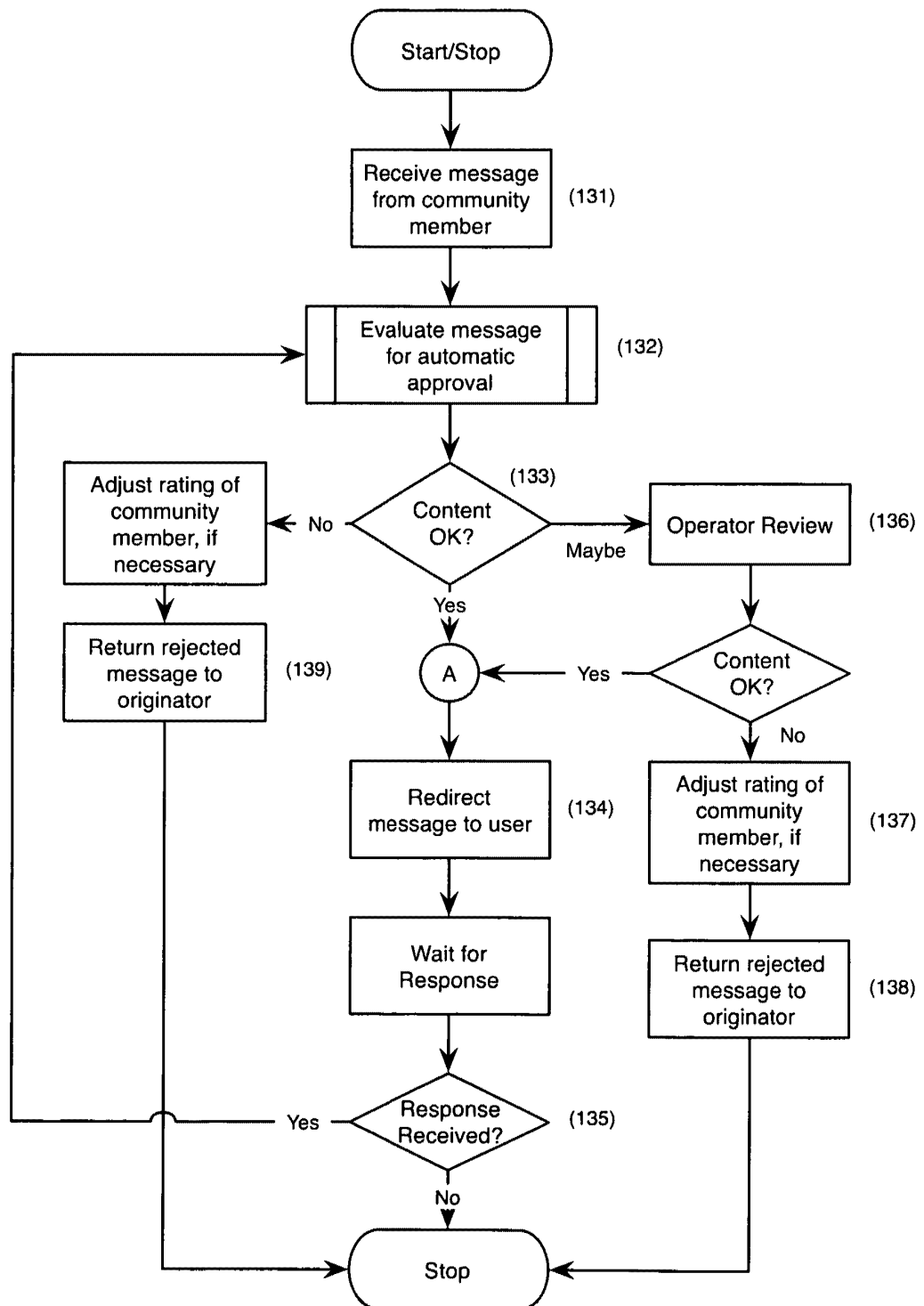
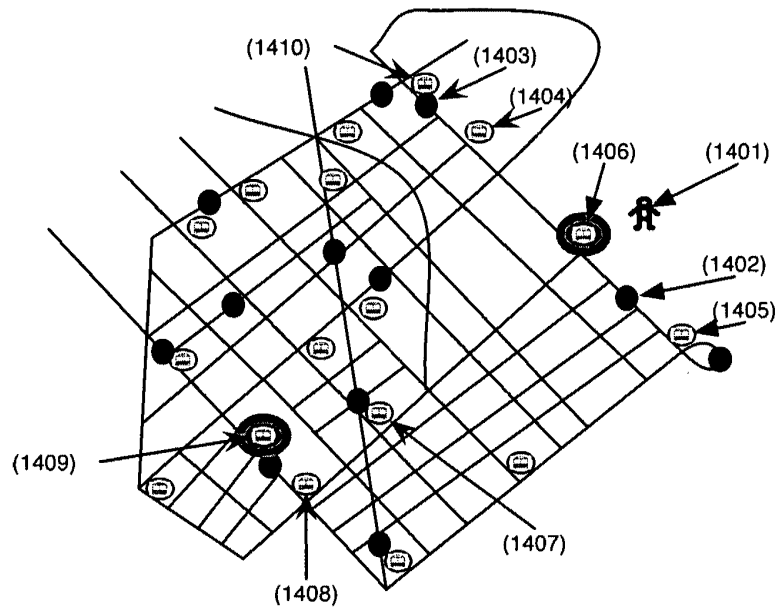


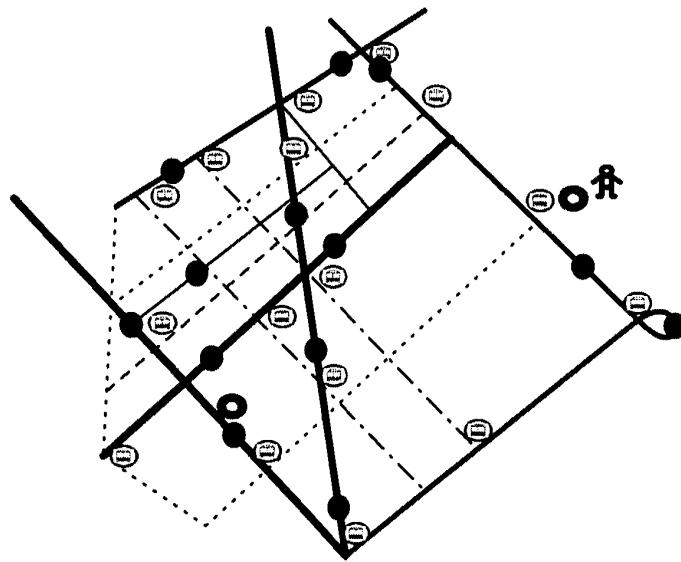
Figure 14a. Full Street, Active Capacity and Node Representation

-  Pick-up/Destination Location
-  Start/Destination Points
-  Active Transport Capacity
-  Transport User



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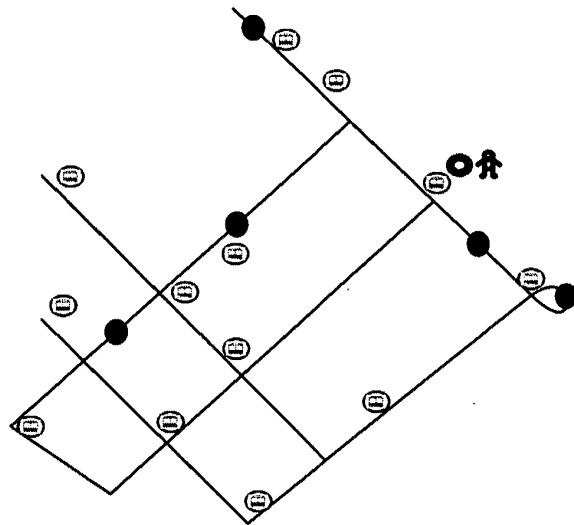
Figure 14b. Network, Active Street and Capacity Representation



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**Figure 14c. Network, Active Zero Transfer
Street and Capacity Representation from
Specific Start Point**

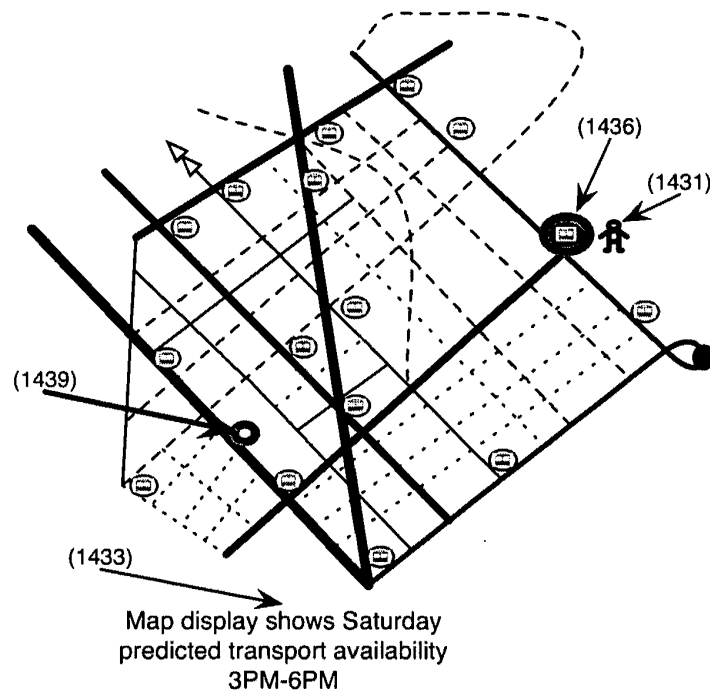


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Figure 14d. Stochastic Network, Time of Day Capacity Representation

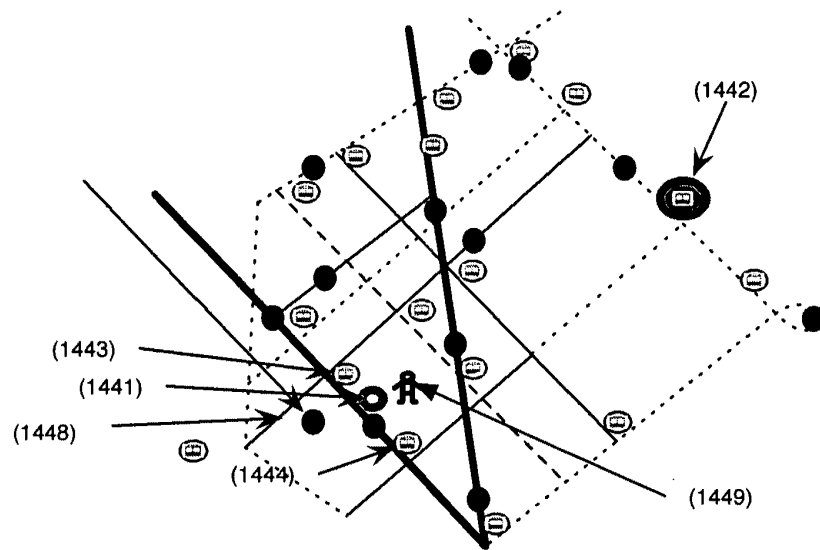
-  Pick-up/Destination Location
-  Start/Destination Points
-  Active Transport Capacity
-  Transport User
-  Infrequent Service (15+ min wait)
-  Infrequent Service (10 min wait)
-  Frequent Service (5 min wait)
-  Frequent Service (2 min wait)



+

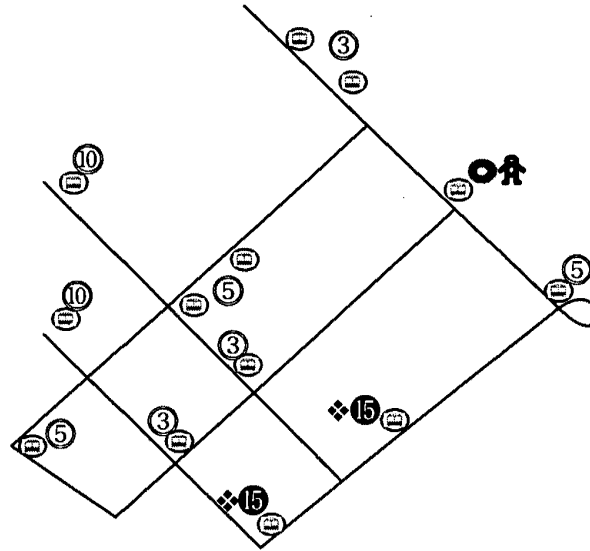
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Figure 14e. Stochastic Network, Active Street and Capacity Representation, Specific Departure Point, Outbound



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Figure 14f. Network, Wait time and Transfer Representation



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Figure 14g. Stochastic Network, Tabular Representation of Time of Day Capacity

Start Point: 2142 14th Ave; (1471)
 Destination: 200 Broadway, Troy (1472)
 (1475)

Time of Day	Departure Location	Availability
5:00am-6:30am	13 th St	15 minutes
	15 th St	no service
6:30am-7:30am	13 th St	5 minutes
	15 th St	10 minutes
7:30am-8:30am	13 th St	5 minutes
	15 th St	5 minutes
(1473) 8:30am-10:00am (1474)	13 th St	5 minutes
	15 th St	5 minutes
10:00am-4:30pm	13 th St	10 minutes
	15 th St	15 minutes
4:30pm-7:30pm	13 th St	5 minutes
	15 th St	5 minutes
7:30pm-10:30pm	13 th St	5 minutes
	15 th St	15 minutes
10:30pm-2:30am	13 th St	15 minutes
	15 th St	1 hour
2:30am-5:00am	13 th St	no service
	15 th St	no service

+

Figure 14h. Combination Real-time & Stochastic Network Departure Board for Shared Transport Network

Start Point: 2142 14th Ave

Destination (via points)	Departure Location	Departure (estimated)
Troy City Center	13 th St	ⓐ minutes
Rensselaer (State St, Watervliet)	15 th St	ⓑ minutes
Cohoes (Green Island, Watervliet)	13 th St	(every ⓐ minutes)
Albany Street	13 th St	(every ⓑ minutes)
Broadway	15 th St	(every ⓐ minutes)

(1481) (1483) (1485)

(1482) (1488)

(1486) (1487)

+

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**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

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 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

DECLARATION AND POWER OF ATTORNEY

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

SHARED TRANSPORT SYSTEM AND SERVICE NETWORK

the specification of which is attached hereto.

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

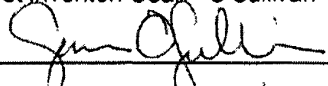
I acknowledge the duty to disclose information which is material to the patentability of this application in accordance with Title 37, Code of Federal Regulations, Section 1.56(a).

I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith: Francis C. Hand, Reg. No. 22,280; John N. Bain (Reg. No. 18,651); John G. Gilfillan, III (Reg. No. 22,746); Elliot M. Olstein (Reg. No. 24,025); Raymond J. Lillie (Reg. No. 31,778); William Squire (Reg. No. 25,378); Alan J. Grant (Reg. No. 33,389); and G. Glennon Troublefield (Reg. No. 39,050).

Address correspondence and telephone calls to Francis C. Hand, Esq., c/o Carella, Byrne, Bain, Gilfillan, Cecchi, Stewart & Olstein, 5 Becker Farm Road, Roseland, NJ 07068 - (973) 994-1700.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full name of sole or first inventor: Sean O'Sullivan

Inventor's signature: 

Date: 12 February 2008

Residence: Ireland, Kinsale, County, Cork

Citizenship: USA

Post Office Address: Cliff House, Compass Hill
Kinsale, Co. Cork
IRELAND

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02 FC:2111	255.00 OP
03 FC:2311	105.00 OP

PTO-1556
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SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A
TOTAL CLAIMS (37 CFR 1.16(i))	16 minus 20 =	0
INDEPENDENT CLAIMS (37 CFR 1.16(h))	2 minus 3 =	0
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RATE (\$)	FEE (\$)
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N/A	\$255
N/A	\$105
X \$25 =	
X \$105 =	
\$130	
\$185	
TOTAL	515.00

RATE (\$)	FEE (\$)
N/A	\$310
N/A	\$510
N/A	\$210
X \$50 =	
X \$210 =	
\$260	
\$370	
TOTAL	

MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))

* If the difference in column 1 is less than zero, enter "0" in column 2.

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Independent (37 CFR 1.16(h))	*	Minus ***	=
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FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))			

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X \$25 =	
X \$105 =	
\$185	
TOTAL ADD'L FEE	

RATE (\$)	ADDITIONAL FEE (\$)
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X \$210 =	
\$370	
TOTAL ADD'L FEE	

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Application Size Fee (37 CFR 1.16(s))			
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))			

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TOTAL ADD'L FEE	

RATE (\$)	ADDITIONAL FEE (\$)
X \$50 =	
X \$210 =	
\$370	
TOTAL ADD'L FEE	

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