PTO/AIA/82B(07-12)
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POWER OF ATTORNEY BY APPLICANT

I hereby revoke all previous powers of attorney given in the application identified in the attached transmittal letter.

■ I hereby appoint 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 equivalent):

87084

OR

☐ I hereby appoint Practitioner(s) named below 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 equivalent):

Name	Registration Number	Name	Registration Number

Please recognize or change the correspondence address for the application identified in the attached transmittal letter 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:

■ Inventor or Joint Inventor

☐ Legal Representative of a Deceased or Legally Incapacitated Inventor

☐ Assignee or Person to Whom the Inventor is Under an Obligation to Assign

☐ 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)

SIGNATURE of Applicant for Patent

Signature	Edward H. Nortrup	Date	
Name		Telephone	
Title and Company			

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. Submit multiple forms for more than one signature, see below *.

■ *Total of 1 forms are submitted.

This collection of information is required by 37 CFR 1.31, 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.

Privacy Act Statement

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

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

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

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DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

Title of Invention	A METHOD AND SYSTEM FOR PROVIDING TRAVEL TIME INFORMATION

As the below named inventor, I hereby declare that:

This declaration is directed to:

☐ The attached application, or

☒ United States application or PCT international application number 14/289,370 filed on May 28, 2014.

The above-identified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

WARNING:

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.

LEGAL NAME OF INVENTOR

Inventor: Edward H. Nortrup Date (Optional) :

Signature: /Edward H. Nortrup/

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1 minute to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
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9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Patent Application Fee Transmittal					
Application Number:					
Filing Date:					
Title of Invention:	A METHOD AND SYSTEM FOR PROVIDING TRAVEL TIME INFORMATION				
First Named Inventor/Applicant Name:	Edward H. Nortrup				
Filer:	John A. Monocello/Jennifer Sammartin				
Attorney Docket Number:	IPHO-0001-U02-C06-C01				
Filed as Small Entity					
Filing Fees for Utility under 35 USC 111(a)					
Description		**Fee Code**	**Quantity**	**Amount**	**Sub-Total in USD($)**
Basic Filing:					
Utility filing Fee (Electronic filing)		4011	1	70	70
Utility Search Fee		2111	1	300	300
Utility Examination Fee		2311	1	360	360
Pages:					
Claims:					
Claims in excess of 20		2202	11	40	440
Miscellaneous-Filing:					
Petition:					

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
			Total in USD ($)	1170

Electronic Acknowledgement Receipt	
EFS ID:	24385763
Application Number:	14971658
International Application Number:	
Confirmation Number:	7270
Title of Invention:	A METHOD AND SYSTEM FOR PROVIDING TRAVEL TIME INFORMATION
First Named Inventor/Applicant Name:	Edward H. Nortrup
Customer Number:	87084
Filer:	John A. Monocello/Jennifer Sammartin
Filer Authorized By:	John A. Monocello
Attorney Docket Number:	IPHO-0001-U02-C06-C01
Receipt Date:	16-DEC-2015
Filing Date:	
Time Stamp:	17:39:37
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	$1170
RAM confirmation Number	4999
Deposit Account	503912
Authorized User	SAMMARTIN, JENNIFER
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees) Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)	

Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Application Data Sheet	IPHO-0001-U02-C01-C06-C01_ADS.pdf	1819735 3377e51c9293af63a83e62bd6cccc22559decee9	no	7
Warnings:					
Information:					
2	Drawings-only black and white line drawings	IPHO-0001-U02-C01-C06-C01_Figures.pdf	121239 76c24efbf9ca8c61ddc47b83b534db46cd9f65ee	no	66
Warnings:					
Information:					
3		IPHO-0001-U02-C06-C01_Specification.pdf	272309 cc552abc5f0b193d9a51c012d7f049f3ee8e3968	yes	83

Multipart Description/PDF files in .zip description

Document Description	Start	End
Specification	1	77
Claims	78	82
Abstract	83	83

Warnings:					
Information:					
4	Power of Attorney	IPHO-0001-U02-C01-C06_POA.pdf	144336 b0a4b1512ec48594fcb53770692d282fc2ec308d	no	2
Warnings:					
Information:					
5	Oath or Declaration filed	IPHO-0001-U02-C01-C06_Declaration.pdf	173736 4553a3654d5a62a7bd661bb70a6b3f5512575b28	no	2
Warnings:					
Information:					
6	Fee Worksheet (SB06)	fee-info.pdf	36769 d3549d43a9457304197c20180d3d5b517f2c4f0b	no	2

Warnings:	
Information:	
Total Files Size (in bytes):	2568124

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

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

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

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

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	IPHO-0001-U02-C01-C06-C01
	Application Number	
Title of Invention	A METHOD AND SYSTEM FOR PROVIDING TRAVEL TIME INFORMATION	

The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76.
This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.

Secrecy Order 37 CFR 5.2

☐ Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)

Inventor Information:

Inventor 1 — Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Edward	H.	Nortrup	

Residence Information (Select One) ● US Residency Non US Residency Active US Military Service

City	Stoneham	State/Province	MA	Country of Residence	US

Mailing Address of Inventor:

Address 1	73 Robin Hood Road
Address 2	

City	Stoneham	State/Province	MA
Postal Code	01280	Country	US

All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the **Add** button. Add

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below.
For further information see 37 CFR 1.33(a).

☐ **An Address is being provided for the correspondence Information of this application.**

Customer Number	87084		
Email Address	jmonocello@gtclawgroup.com	Add Email	Remove Email
Email Address	jsammartin@gtclawgroup.com	Add Email	Remove Email
Email Address	gtcdocketing@cpaglobal.com		Remove Email

Application Information:

Title of the Invention	A METHOD AND SYSTEM FOR PROVIDING TRAVEL TIME INFORMATION		
Attorney Docket Number	IPHO-0001-U02-C01-C06-C01	Small Entity Status Claimed	☒
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	66	Suggested Figure for Publication (if any)	

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	IPHO-0001-U02-C01-C06-C01
	Application Number	
Title of Invention	A METHOD AND SYSTEM FOR PROVIDING TRAVEL TIME INFORMATION	

Filing By Reference :

Only complete this section when filing an application by reference under 35 U.S.C. 111(c) and 37 CFR 1.57(a). Do not complete this section if application papers including a specification and any drawings are being filed. Any domestic benefit or foreign priority information must be provided in the appropriate section(s) below (i.e., "Domestic Benefit/National Stage Information" and "Foreign Priority Information").

For the purposes of a filing date under 37 CFR 1.53(b), the description and any drawings of the present application are replaced by this reference to the previously filed application, subject to conditions and requirements of 37 CFR 1.57(a).

Application number of the previously filed application	Filing date (YYYY-MM-DD)	Intellectual Property Authority or Country

Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)

☐ **Request Not to Publish.** I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application **has not and will not** be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32).
Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer Number will be used for the Representative Information during processing.

Please Select One:	● Customer Number	US Patent Practitioner	○ Limited Recognition (37 CFR 11.9)
Customer Number	87084		

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, 365(c), or 386(c) or indicate National Stage entry from a PCT application. Providing this information in the application data sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.
When referring to the current application, please leave the application number blank.

Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
	Continuation of	14/289370	2014-05-28
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
14/289370	Continuation of	13/019869	2011-02-02

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	IPHO-0001-U02-C01-C06-C01
	Application Number	
Title of Invention	A METHOD AND SYSTEM FOR PROVIDING TRAVEL TIME INFORMATION	

Prior Application Status	Patented				Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
13/019869	Continuation of	12/391745	2009-02-24	7904240	2011-03-08
Prior Application Status	Patented				Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
12/391745	Continuation of	11/052547	2005-02-07	7522995	2009-04-21
Prior Application Status	Expired				Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)		
11/052547	Claims benefit of provisional	60/541990	2004-02-05		
Prior Application Status	Expired				Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)		
11/052547	Claims benefit of provisional	60/578494	2004-06-10		
Prior Application Status	Expired				Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)		
11/052547	Claims benefit of provisional	60/617857	2004-10-12		

Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the **Add** button. Add

Foreign Priority Information:

This section allows for the applicant to claim priority to a foreign application. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55. When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX)[i] the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(i)(1) and (2). Under the PDX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).

Remove

Application Number	Country[i]	Filing Date (YYYY-MM-DD)	Access Code[i] (if applicable)

Additional Foreign Priority Data may be generated within this form by selecting the **Add** button. Add

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	IPHO-0001-U02-C01-C06-C01
	Application Number	
Title of Invention	A METHOD AND SYSTEM FOR PROVIDING TRAVEL TIME INFORMATION	

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

☐ This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.
NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.

Authorization to Permit Access:

☐ Authorization to Permit Access to the Instant Application by the Participating Offices

If checked, the undersigned hereby grants the USPTO authority to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the World Intellectual Property Office (WIPO), and any other intellectual property offices in which a foreign application claiming priority to the instant patent application is filed access to the instant patent application. See 37 CFR 1.14(c) and (h). This box should not be checked if the applicant does not wish the EPO, JPO, KIPO, WIPO, or other intellectual property office in which a foreign application claiming priority to the instant patent application is filed to have access to the instant patent application.

In accordance with 37 CFR 1.14(h)(3), access will be provided to a copy of the instant patent application with respect to: 1) the instant patent application-as-filed; 2) any foreign application to which the instant patent application claims priority under 35 U.S.C. 119(a)-(d) if a copy of the foreign application that satisfies the certified copy requirement of 37 CFR 1.55 has been filed in the instant patent application; and 3) any U.S. application-as-filed from which benefit is sought in the instant patent application.

In accordance with 37 CFR 1.14(c), access may be provided to information concerning the date o f filing this Authorization.

Applicant Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	IPHO-0001-U02-C01-C06-C01
	Application Number	
Title of Invention	A METHOD AND SYSTEM FOR PROVIDING TRAVEL TIME INFORMATION	

Applicant 1 Remove

If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section.

Clear

● Assignee	Legal Representative under 35 U.S.C. 117	Joint Inventor
Person to whom the inventor is obligated to assign.	Person who shows sufficient proprietary interest	

If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:

Name of the Deceased or Legally Incapacitated Inventor :

If the Applicant is an Organization check here. ☐

Prefix	**Given Name**	Middle Name	**Family Name**	Suffix

Mailing Address Information For Applicant:

Address 1			
Address 2			
City		**State/Province**	
Country		Postal Code	
Phone Number		Fax Number	
Email Address			

Additional Applicant Data may be generated within this form by selecting the Add button. Add

Assignee Information including Non-Applicant Assignee Information:

Providing assignment information in this section does not subsitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

Assignee 1

Complete this section if assignee information, including non-applicant assignee information, is desired to be included on the patent application publication . An assignee-applicant identified in the "Applicant Information" section will appear on the patent application publication as an applicant. For an assignee-applicant, complete this section only if identification as an assignee is also desired on the patent application publication.

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	IPHO-0001-U02-C01-C06-C01
	Application Number	
Title of Invention	A METHOD AND SYSTEM FOR PROVIDING TRAVEL TIME INFORMATION	

If the Assignee or Non-Applicant Assignee is an Organization check here. ☒			
Organization Name			
Mailing Address Information For Assignee including Non-Applicant Assignee:			
Address 1			
Address 2			
City		**State/Province**	
Country i		Postal Code	
Phone Number		Fax Number	
Email Address			

Additional Assignee or Non-Applicant Assignee Data may be generated within this form by selecting the Add button. Add

Signature:

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

Signature	/John A. Monocello, III/			Date (YYYY-MM-DD)	2015-12-16
First Name	John A.	Last Name	Monocello, III	Registration Number	51022

Additional Signature may be generated within this form by selecting the Add button. Add

This collection of information is required by 37 CFR 1.76. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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

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

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2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

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6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

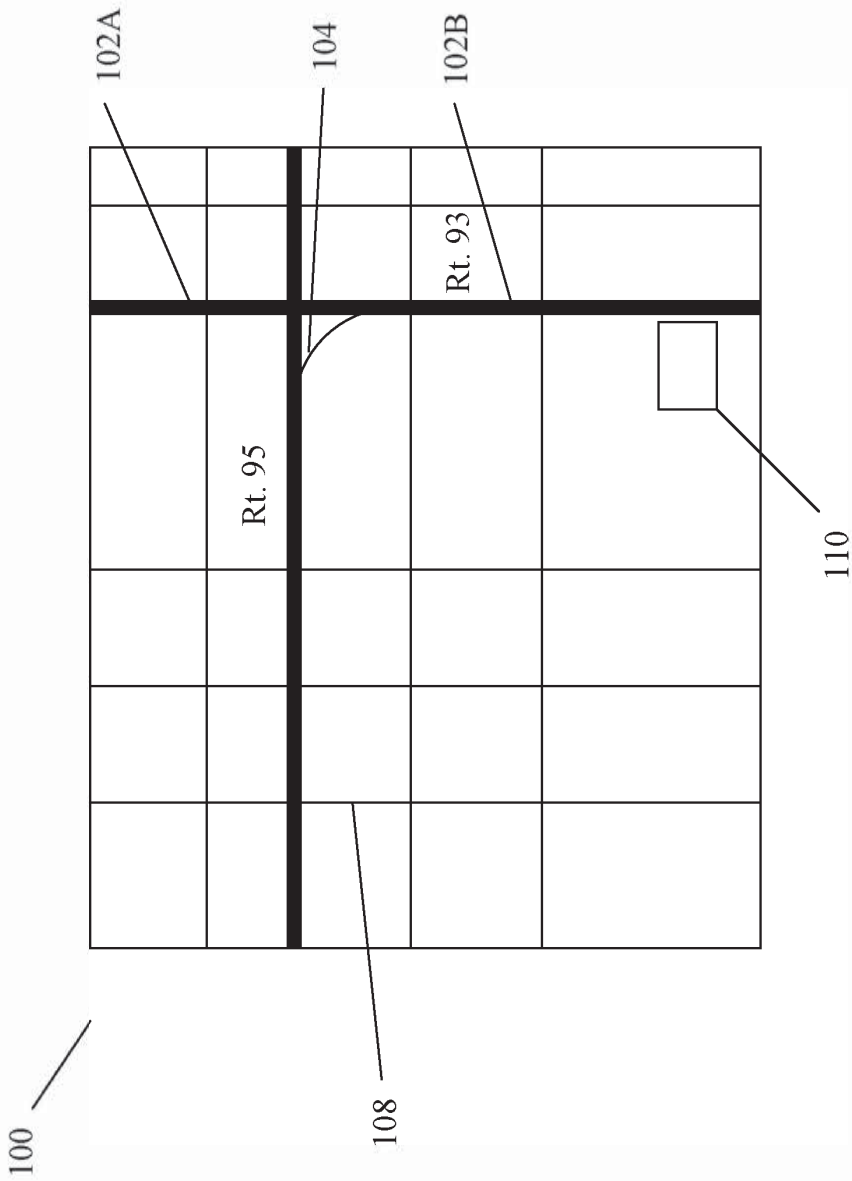


Fig. 1

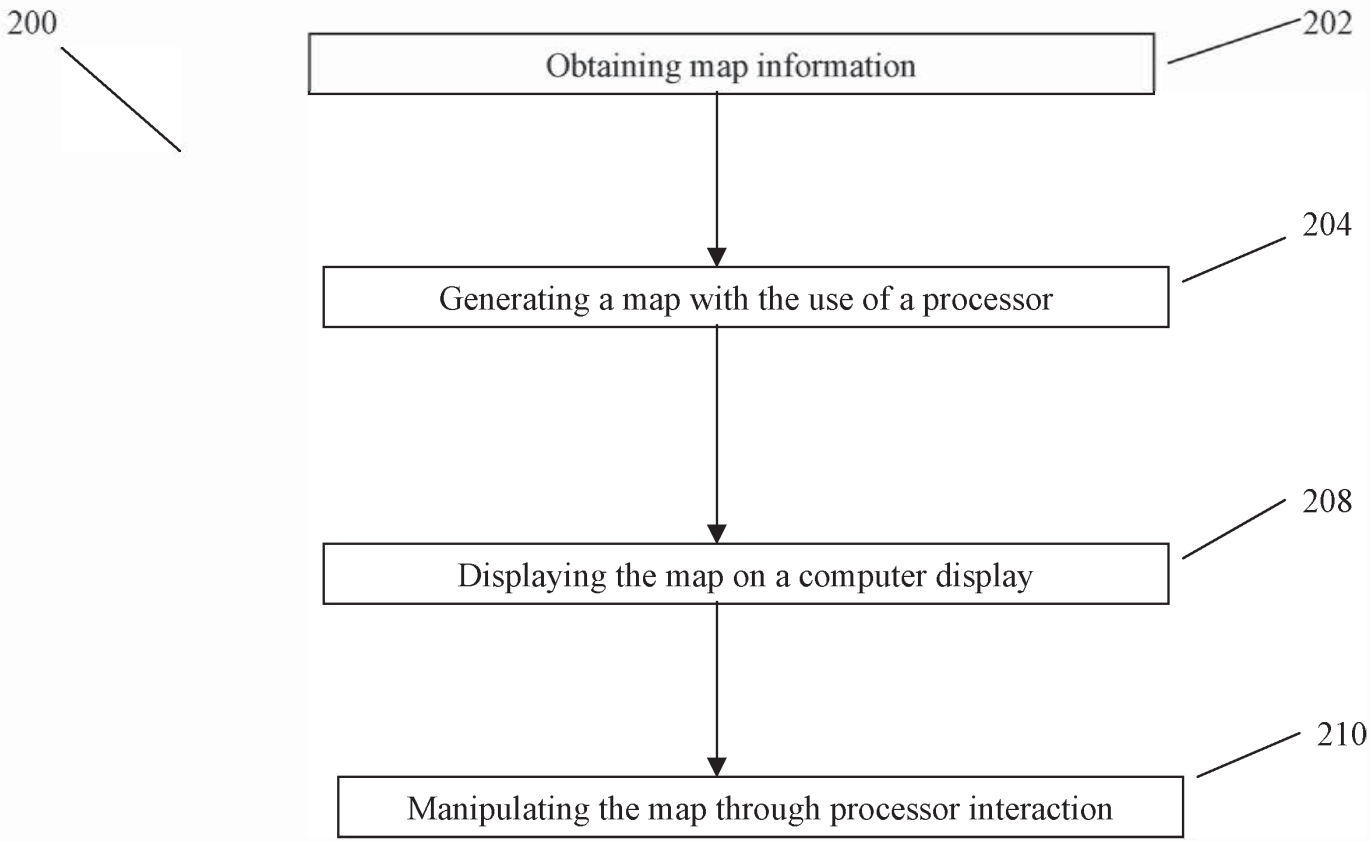

200
Obtaining map information
202
Generating a map with the use of a processor
204
Displaying the map on a computer display
208
Manipulating the map through processor interaction
210

Fig. 2

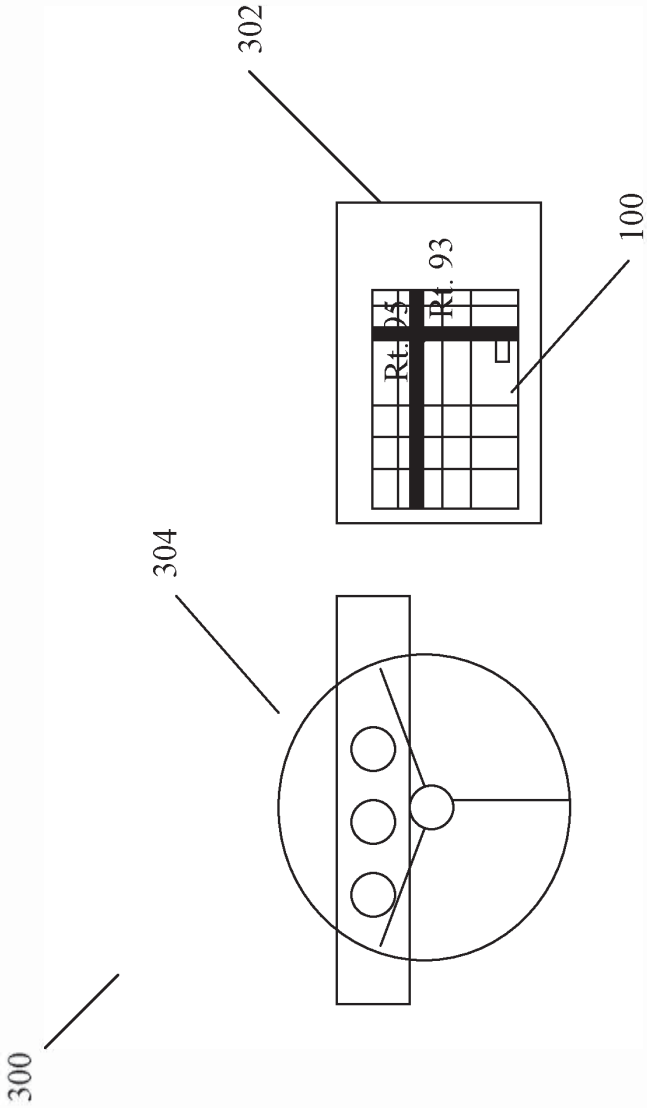


Fig. 3

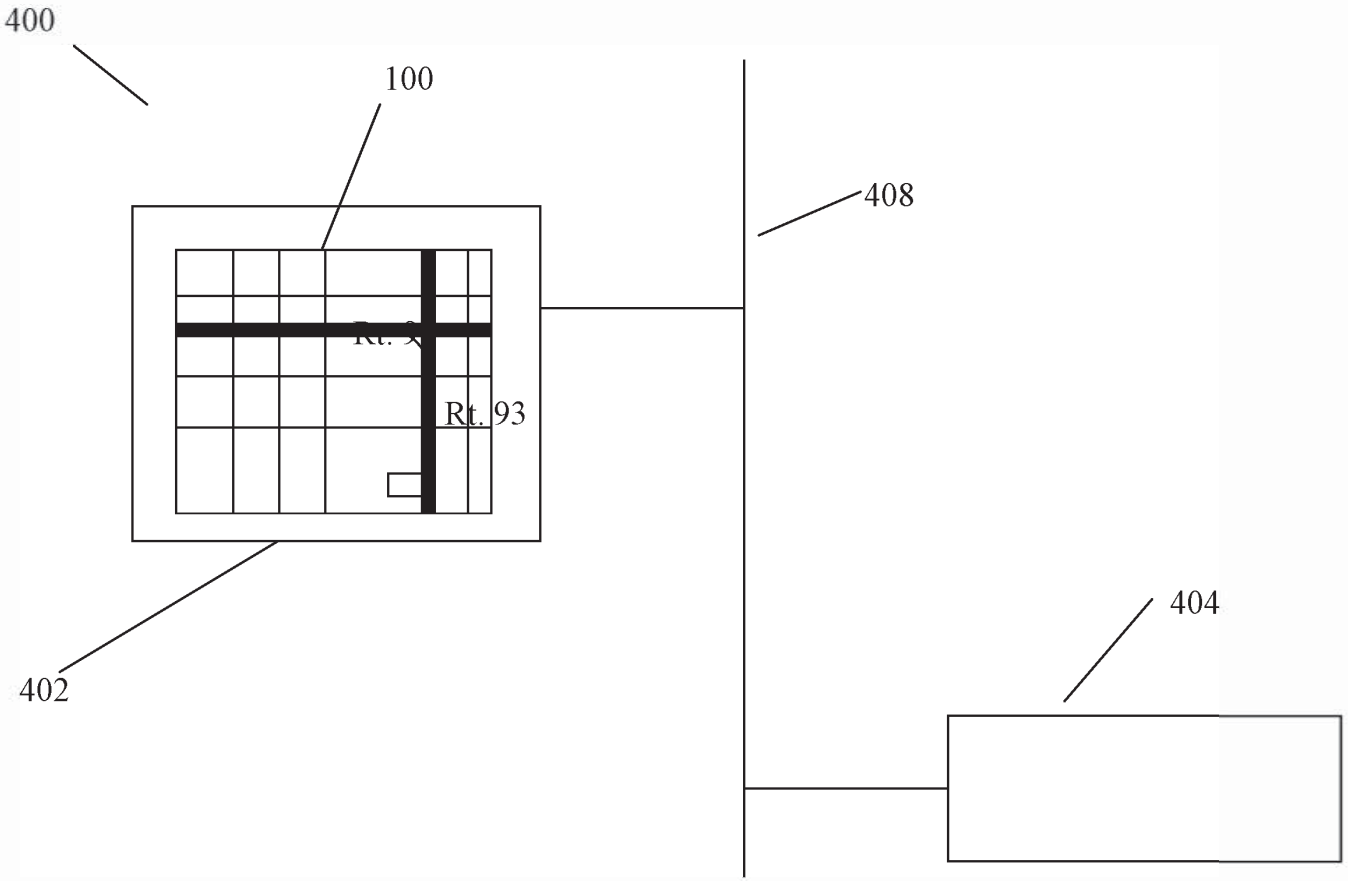


Fig. 4

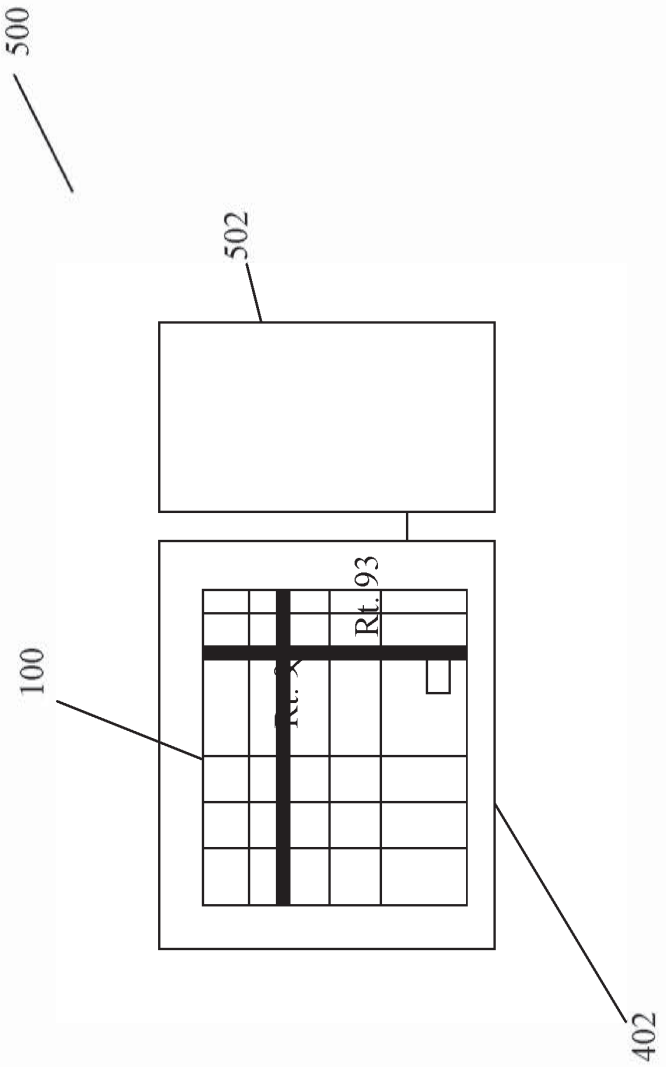


Fig. 5

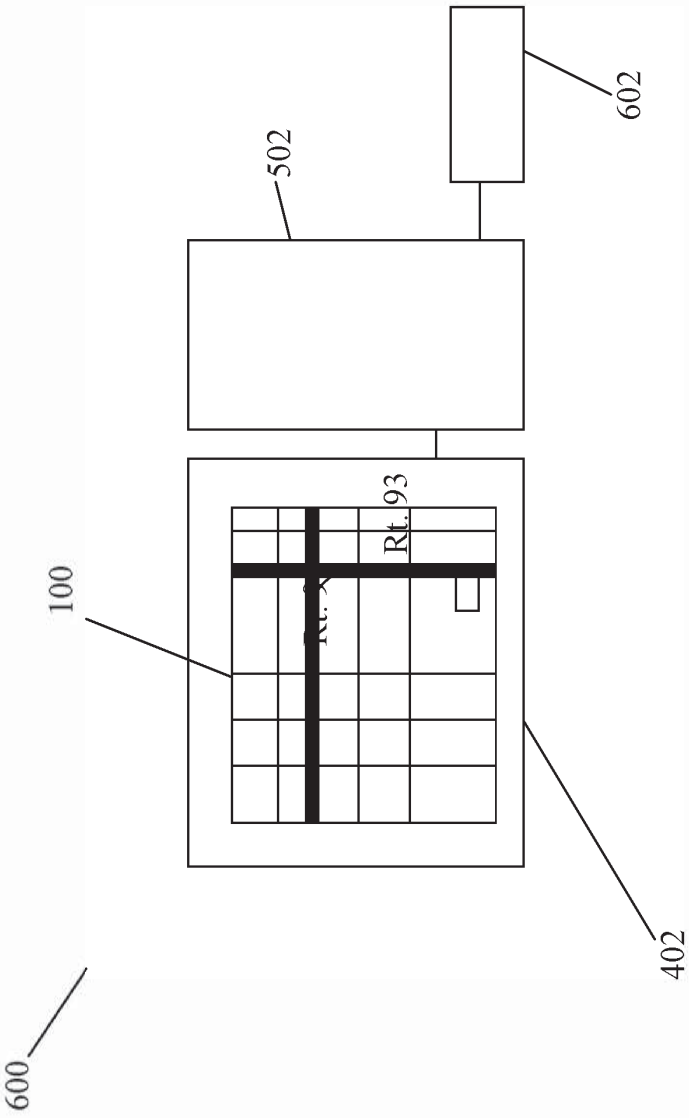


Fig. 6

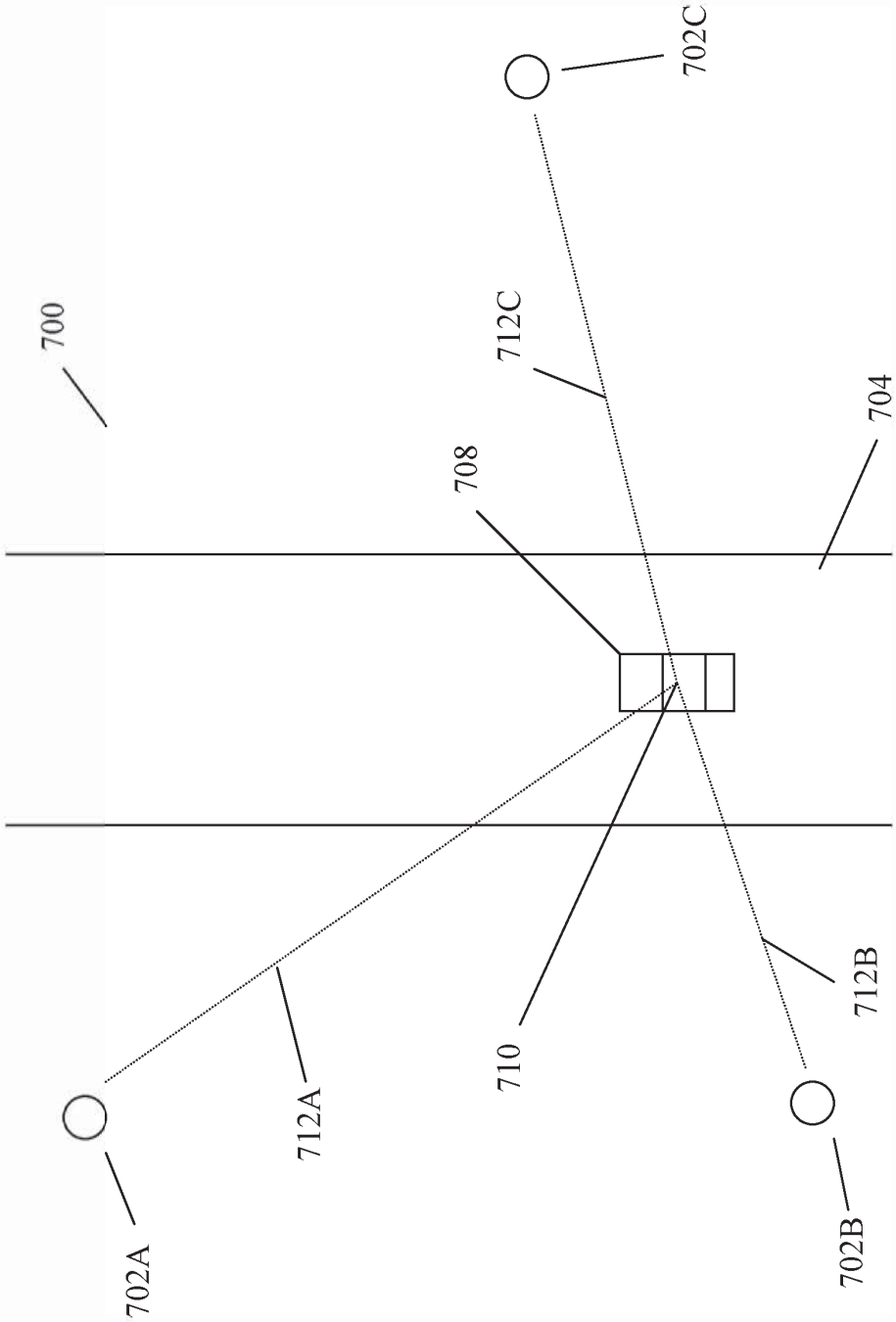


Fig. 7

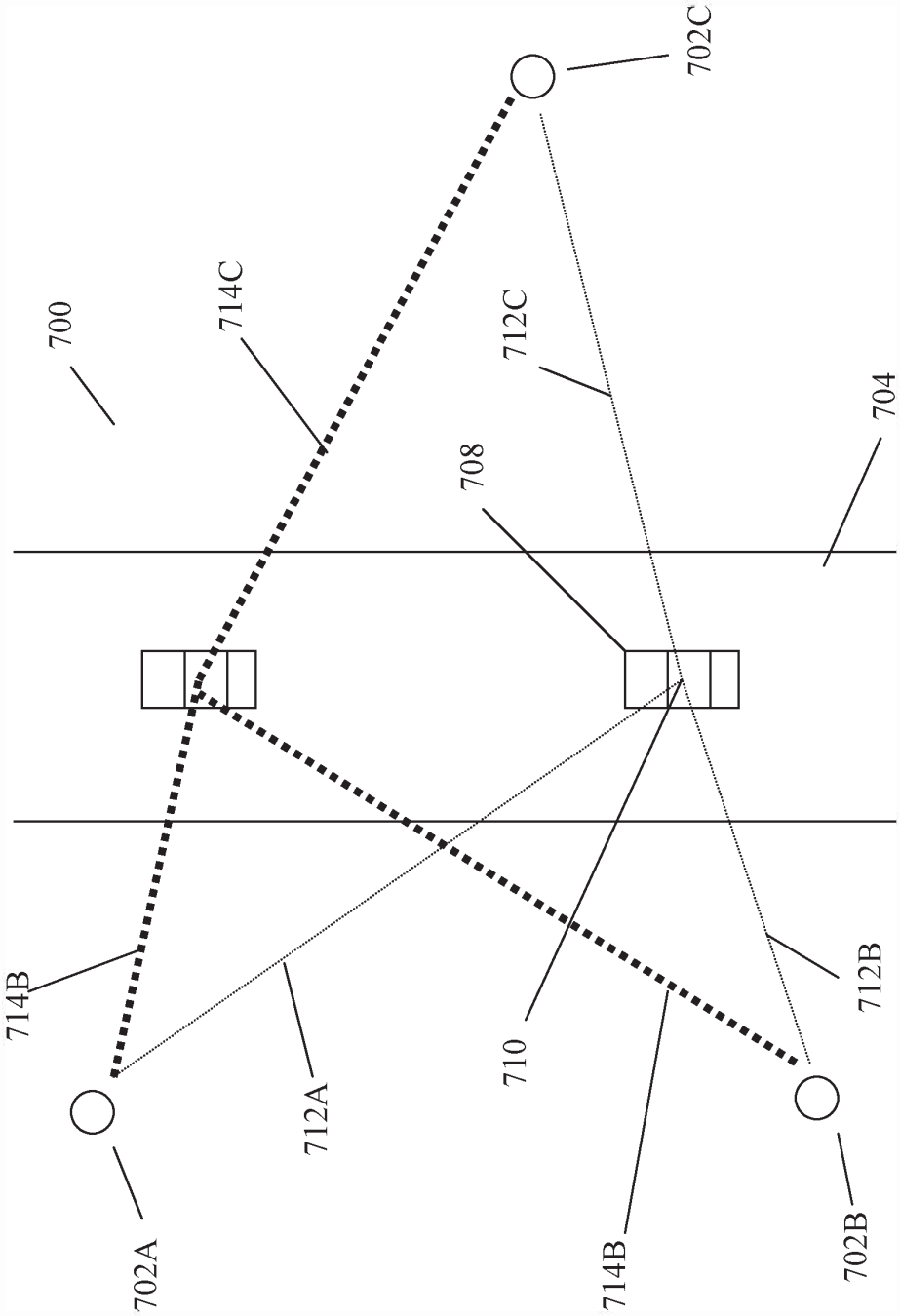


Fig. 7a

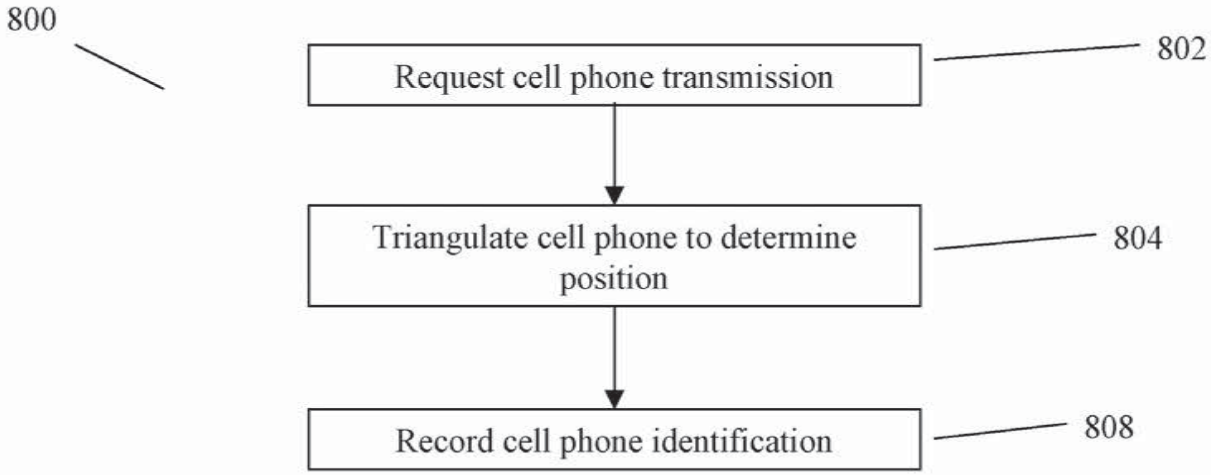

800
Request cell phone transmission
802
Triangulate cell phone to determine position
804
Record cell phone identification
808

Fig. 8

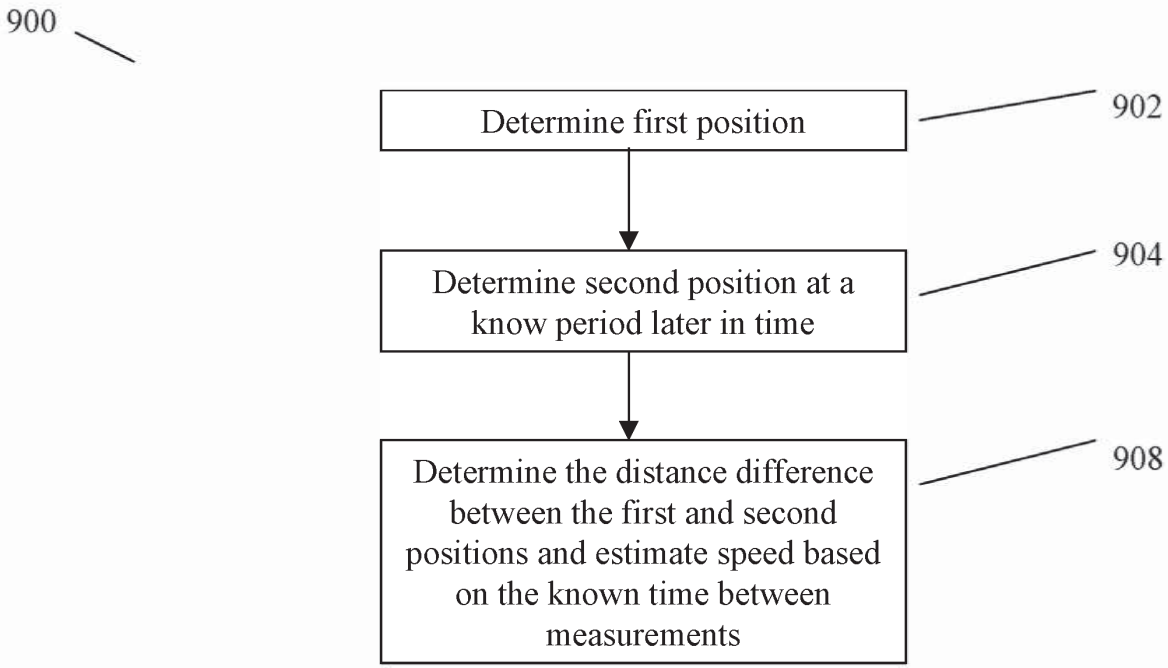

900
Determine first position
902
Determine second position at a know period later in time
904
Determine the distance difference between the first and second positions and estimate speed based on the known time between measurements
908

Fig. 9

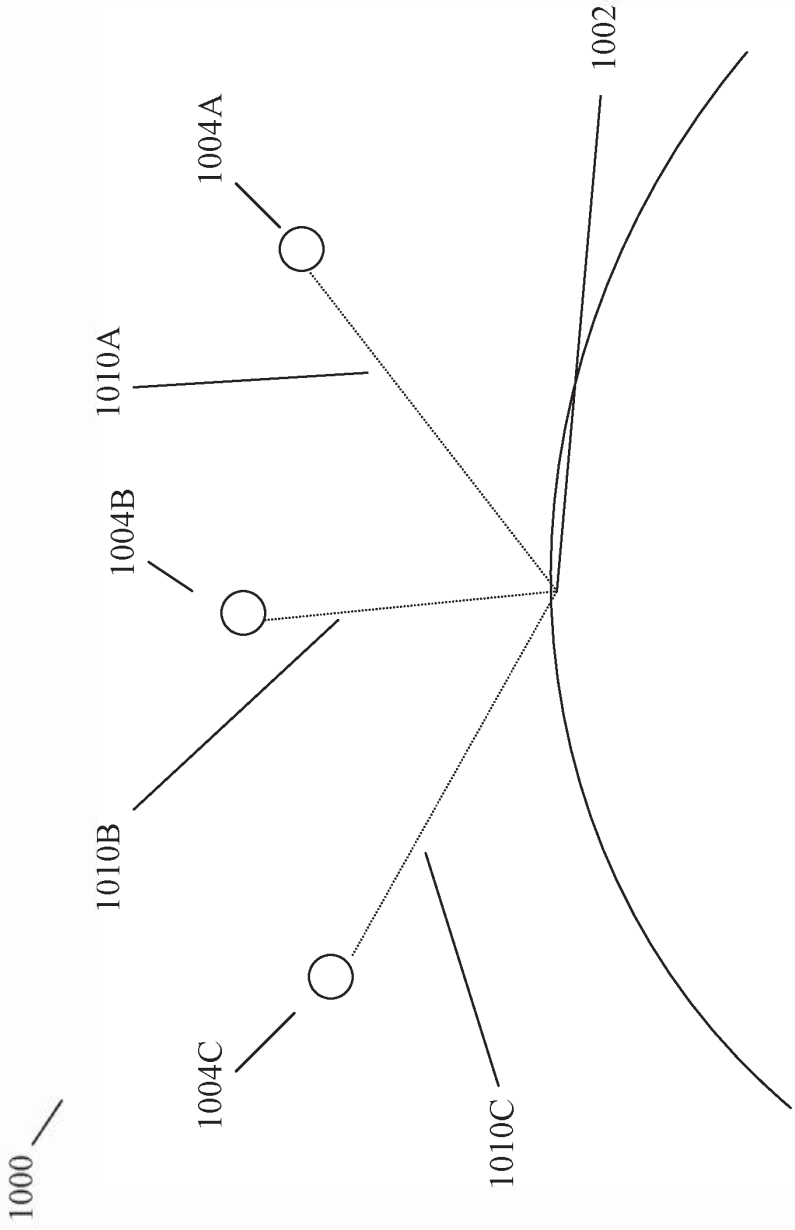


Fig. 10

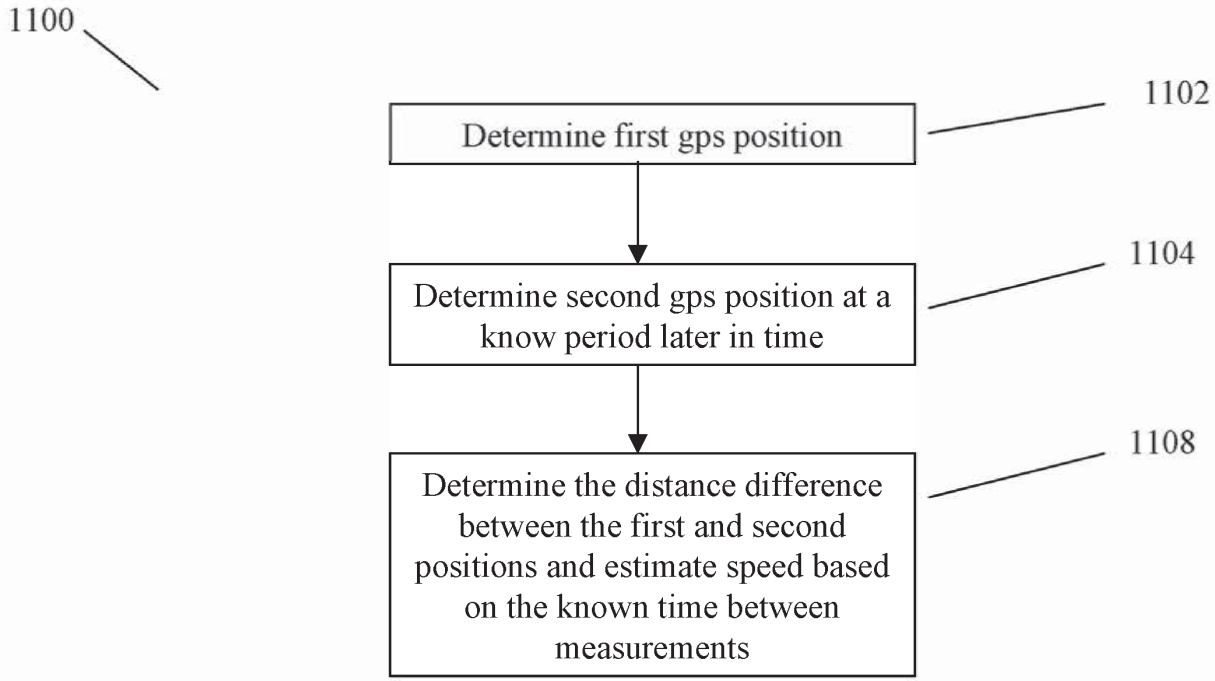

1100
Determine first gps position
1102
Determine second gps position at a know period later in time
1104
Determine the distance difference between the first and second positions and estimate speed based on the known time between measurements
1108

Fig. 11

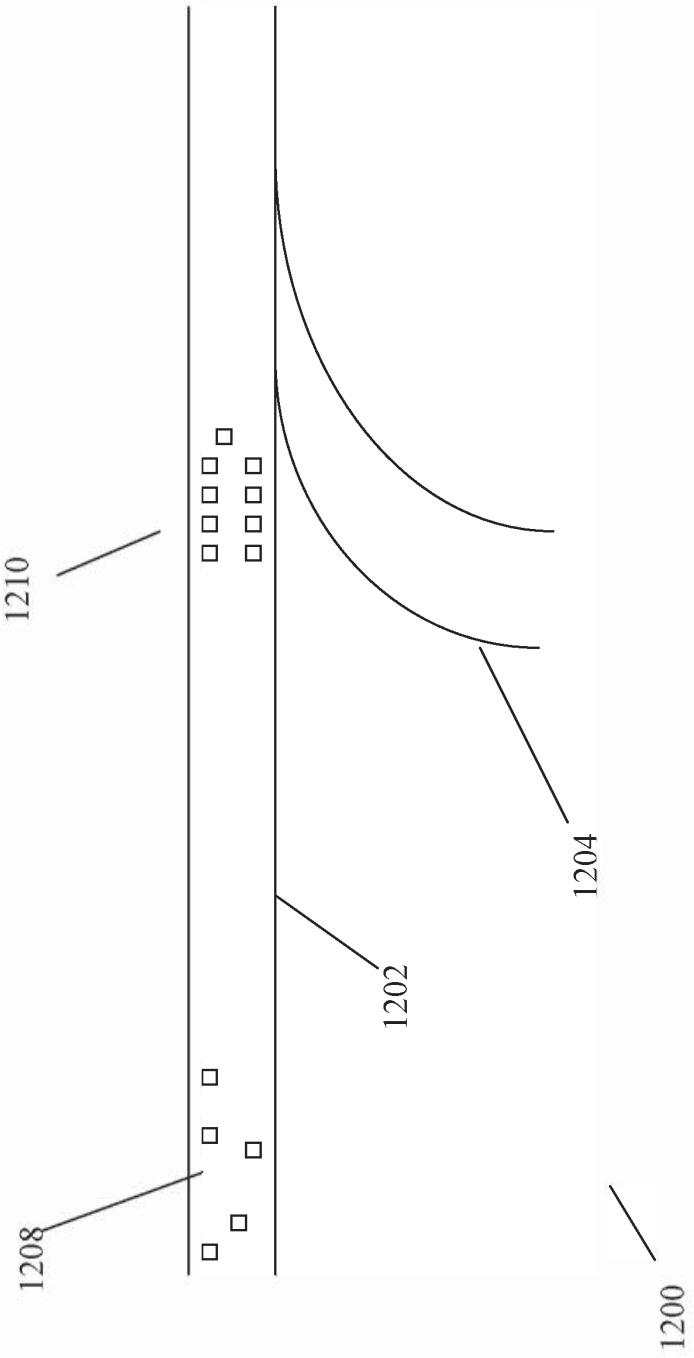


Fig. 12

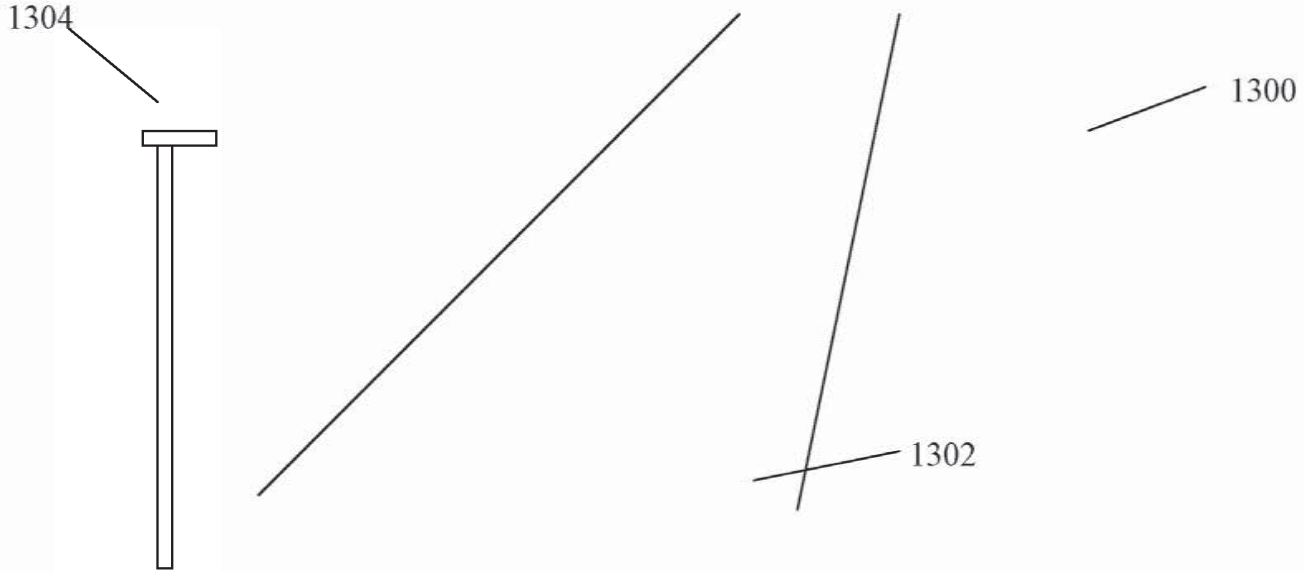


Fig. 13

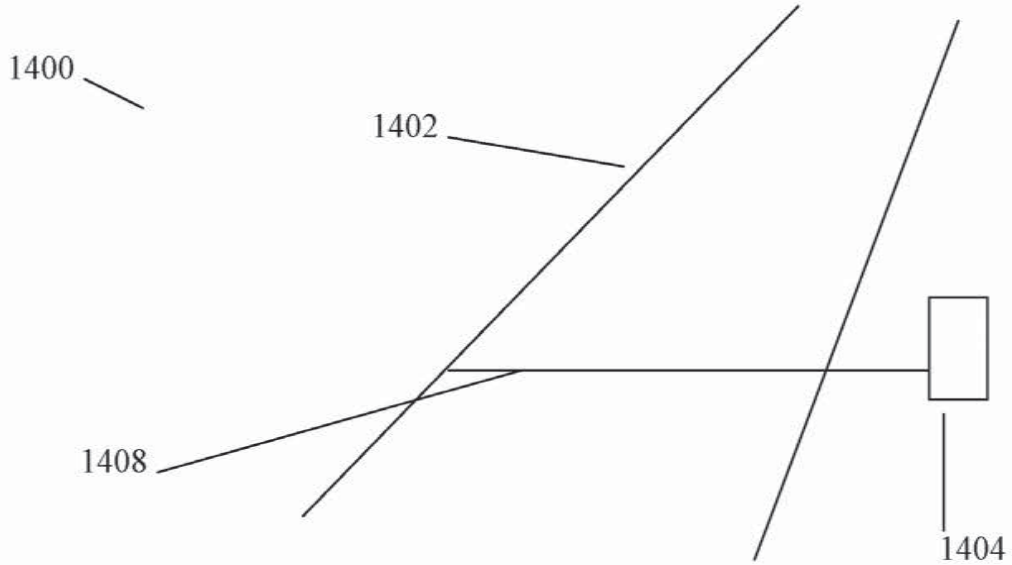


Fig. 14

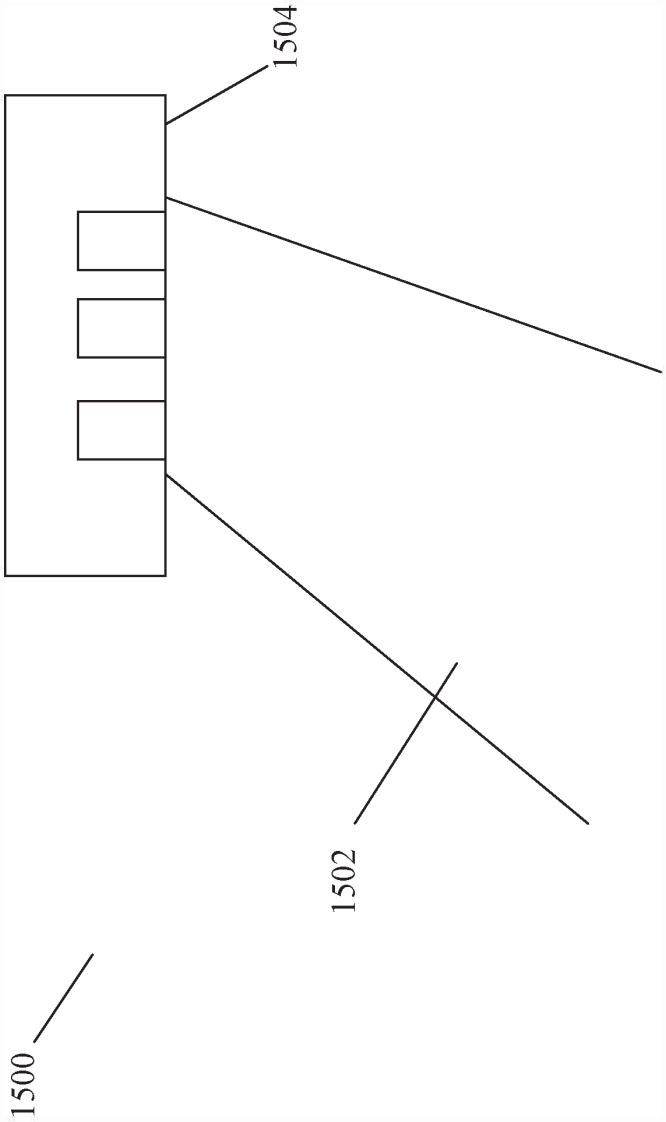


Fig. 15

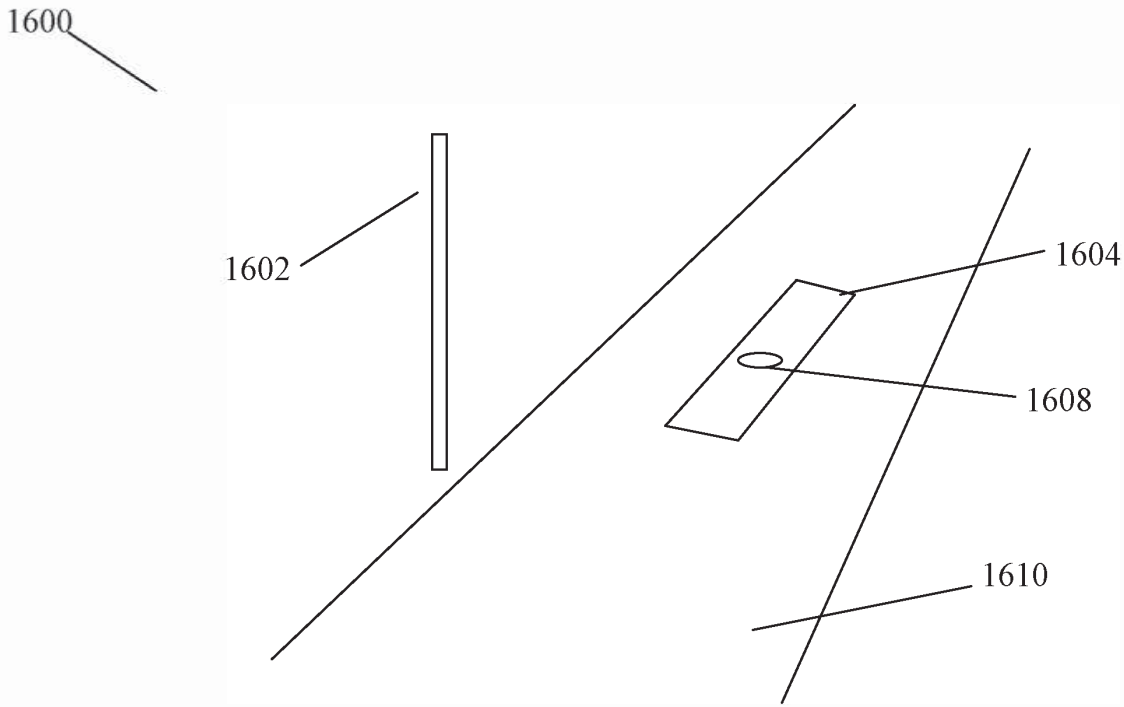


Fig. 16

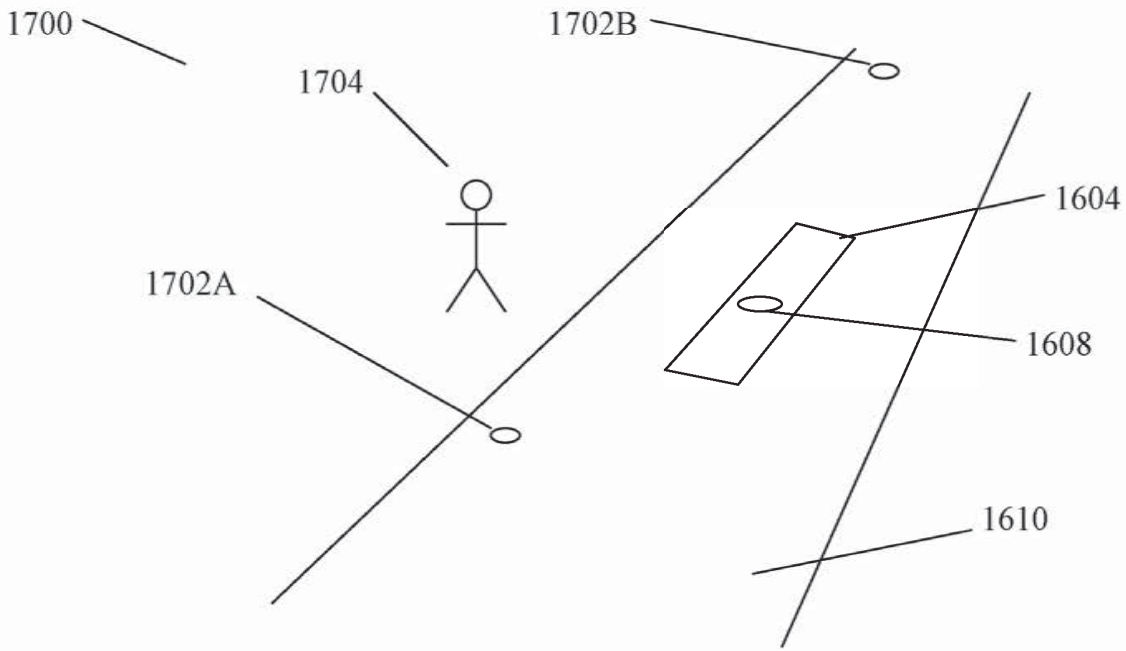


Fig. 17

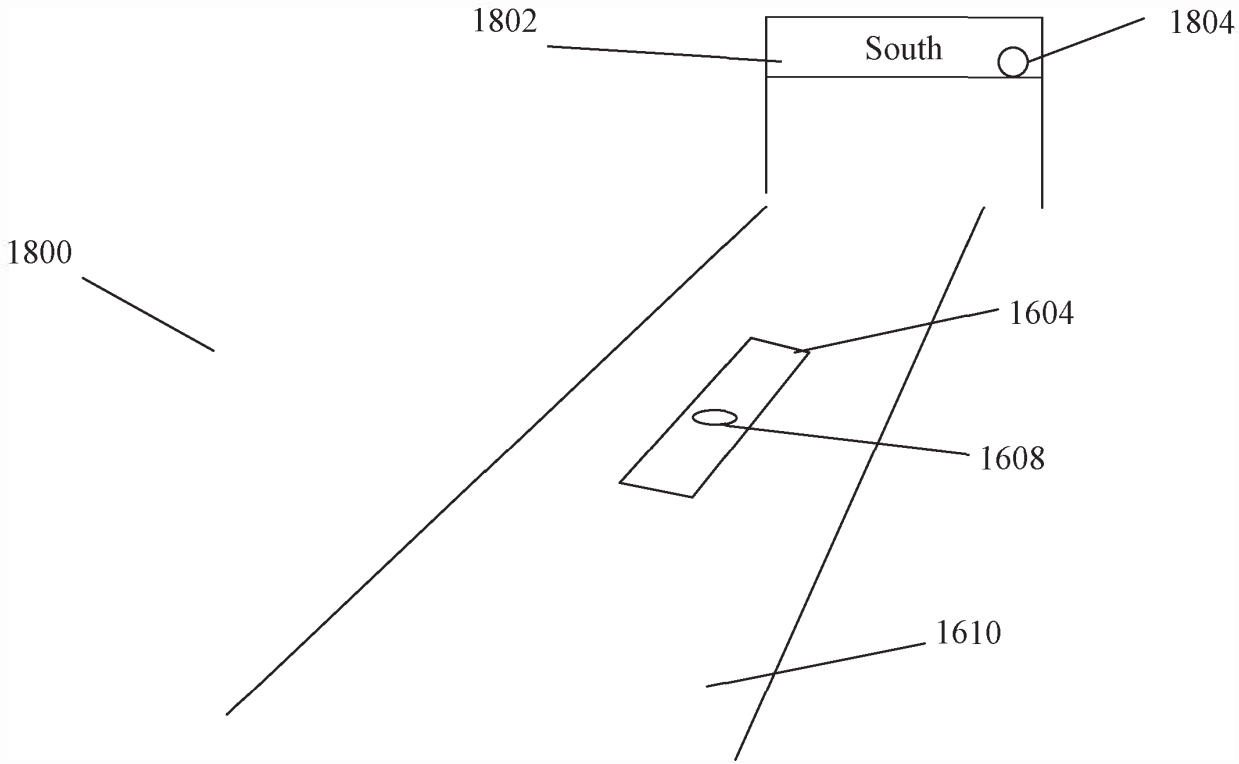


Fig. 18

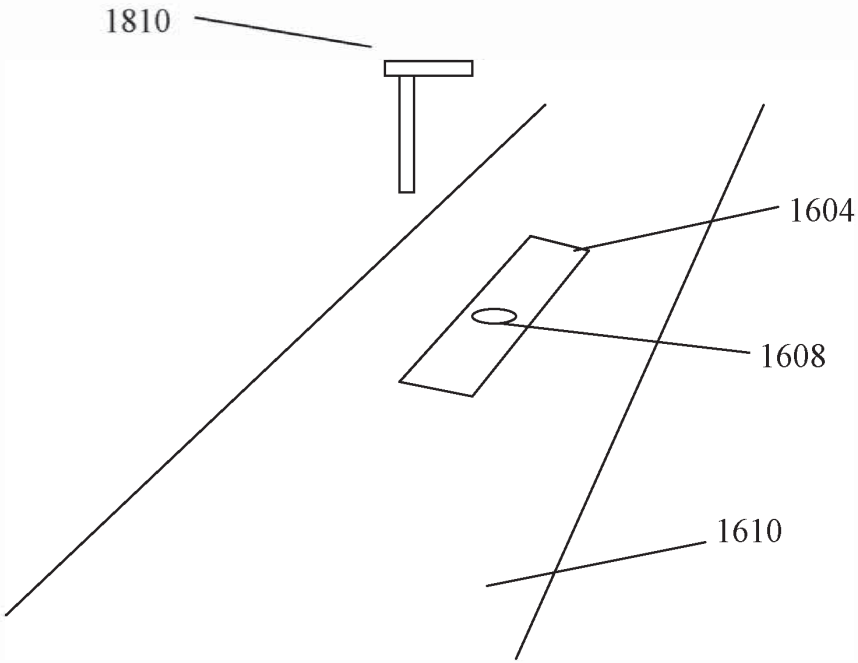


Fig. 18A

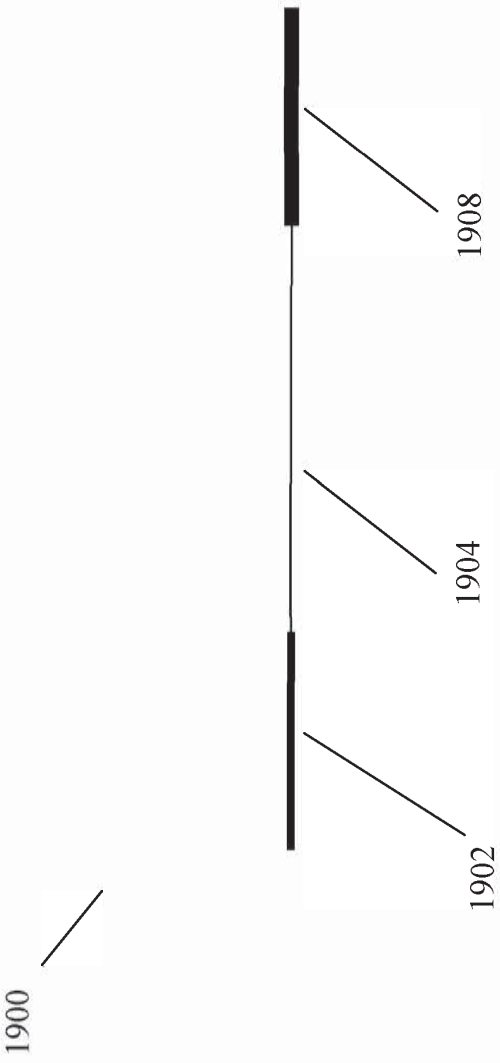


Fig. 19

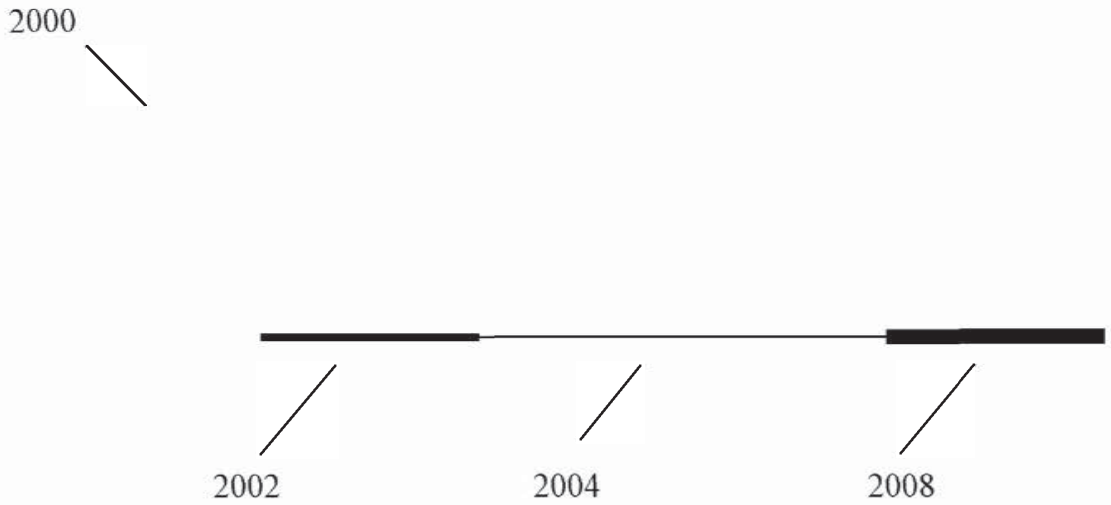


Fig. 20

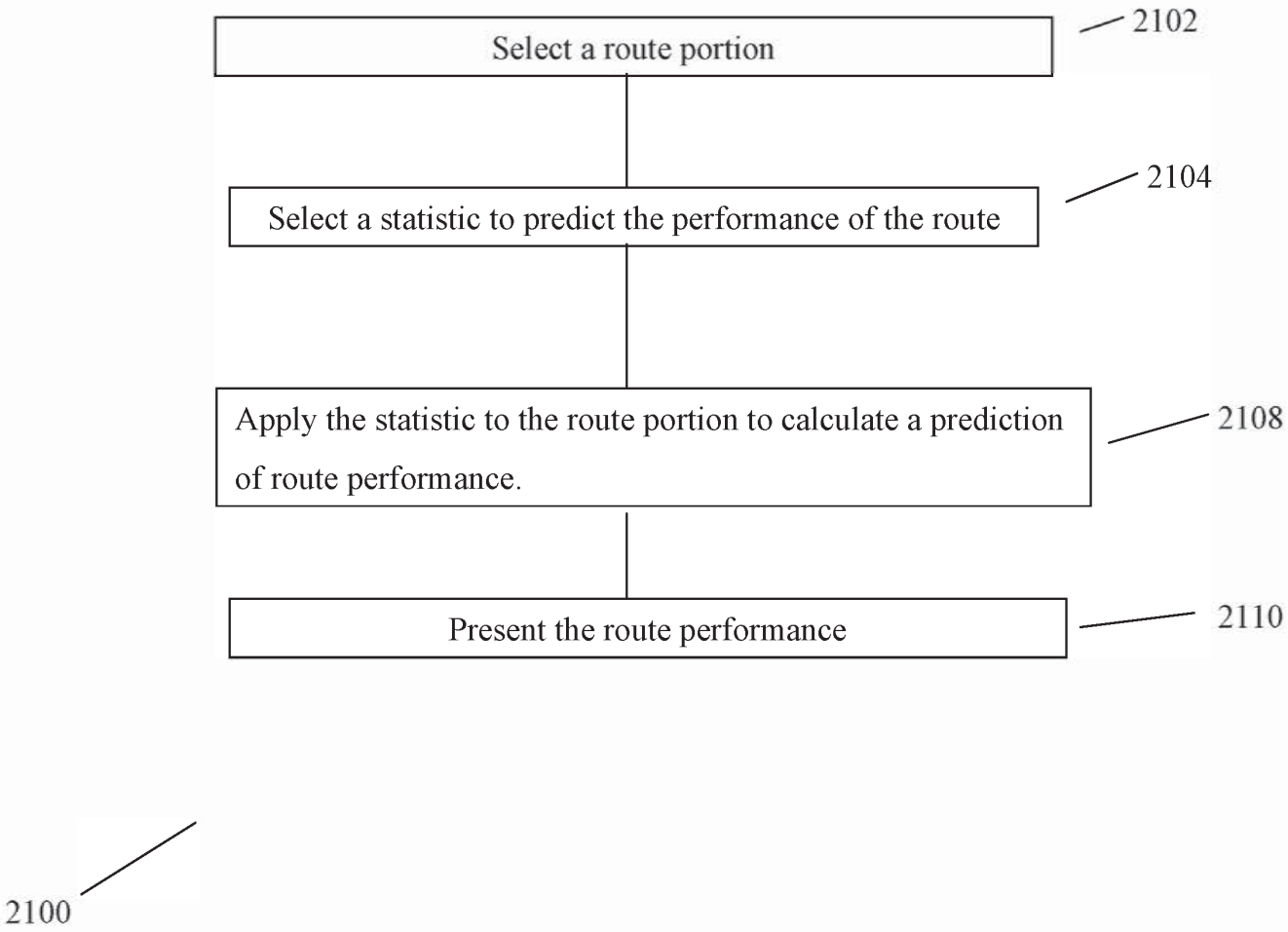

Select a route portion
2102
Select a statistic to predict the performance of the route
2104
Apply the statistic to the route portion to calculate a prediction of route performance.
2108
Present the route performance
2110
2100

Fig.21

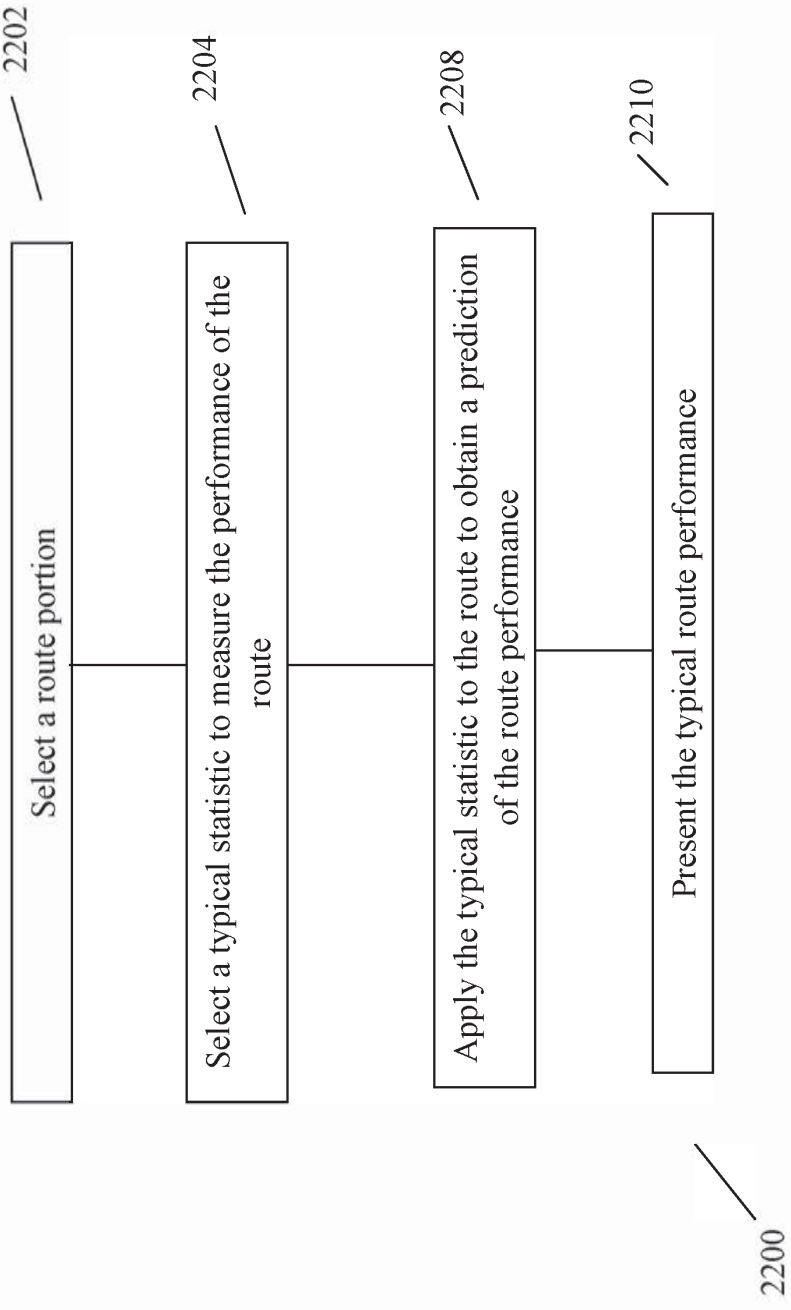

2202
Select a route portion
2204
Select a typical statistic to measure the performance of the route
2208
Apply the typical statistic to the route to obtain a prediction of the route performance
2210
Present the typical route performance
2200

Fig. 22

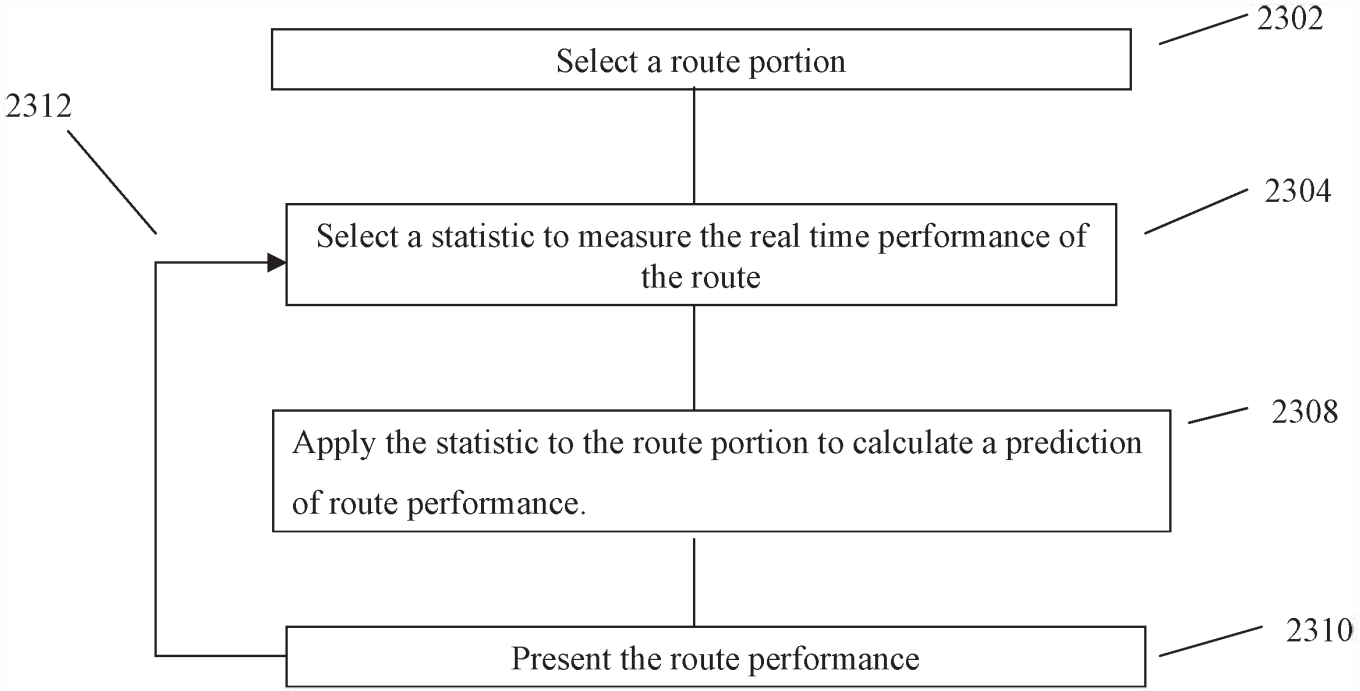

Select a route portion
2302
2312
Select a statistic to measure the real time performance of the route
2304
Apply the statistic to the route portion to calculate a prediction of route performance.
2308
Present the route performance
2310
2300

Fig 23

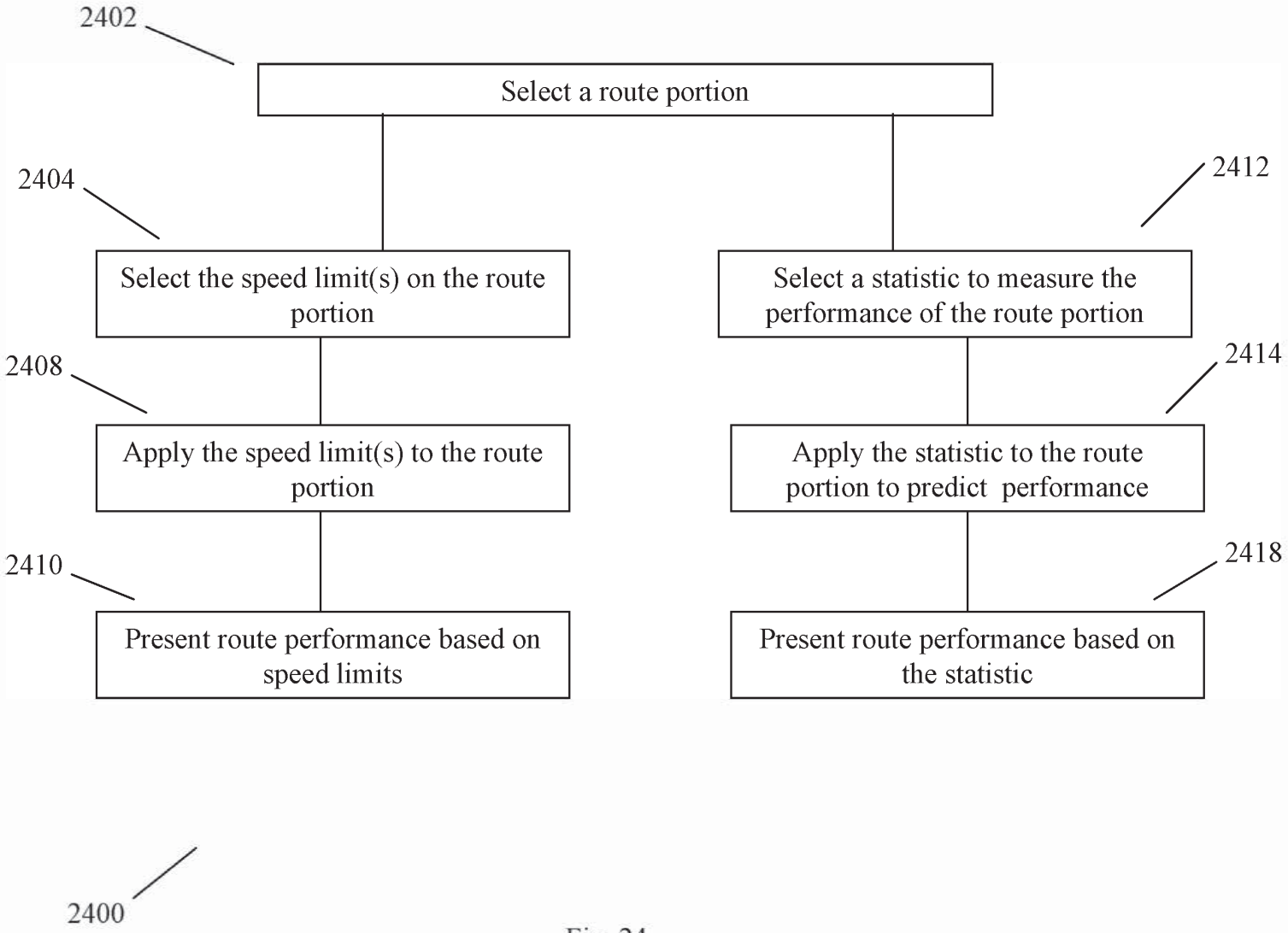

2402
Select a route portion
2404
Select the speed limit(s) on the route portion
2408
Apply the speed limit(s) to the route portion
2410
Present route performance based on speed limits
2412
Select a statistic to measure the performance of the route portion
2414
Apply the statistic to the route portion to predict performance
2418
Present route performance based on the statistic
2400

Fig. 24

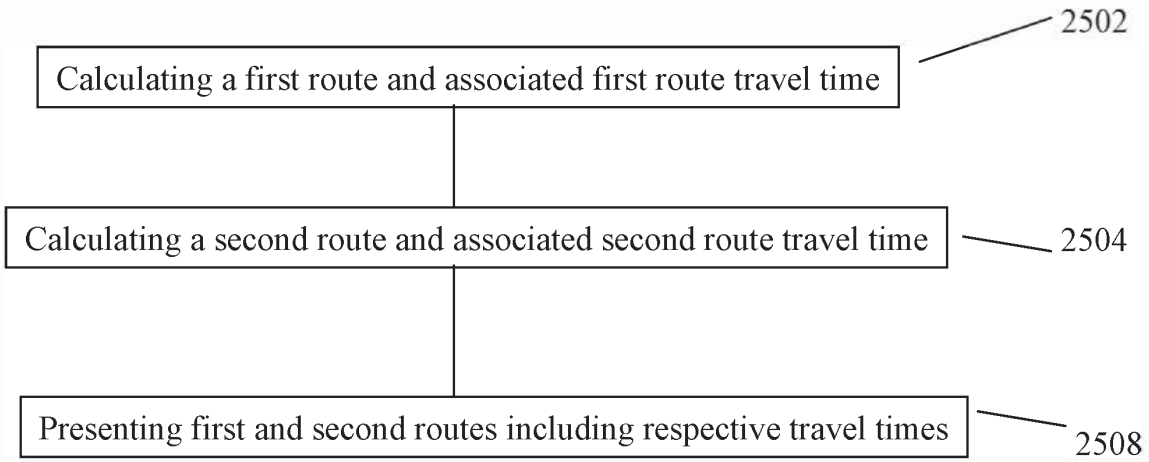

Calculating a first route and associated first route travel time
2502
Calculating a second route and associated second route travel time
2504
Presenting first and second routes including respective travel times
2508
2500

Fig. 25

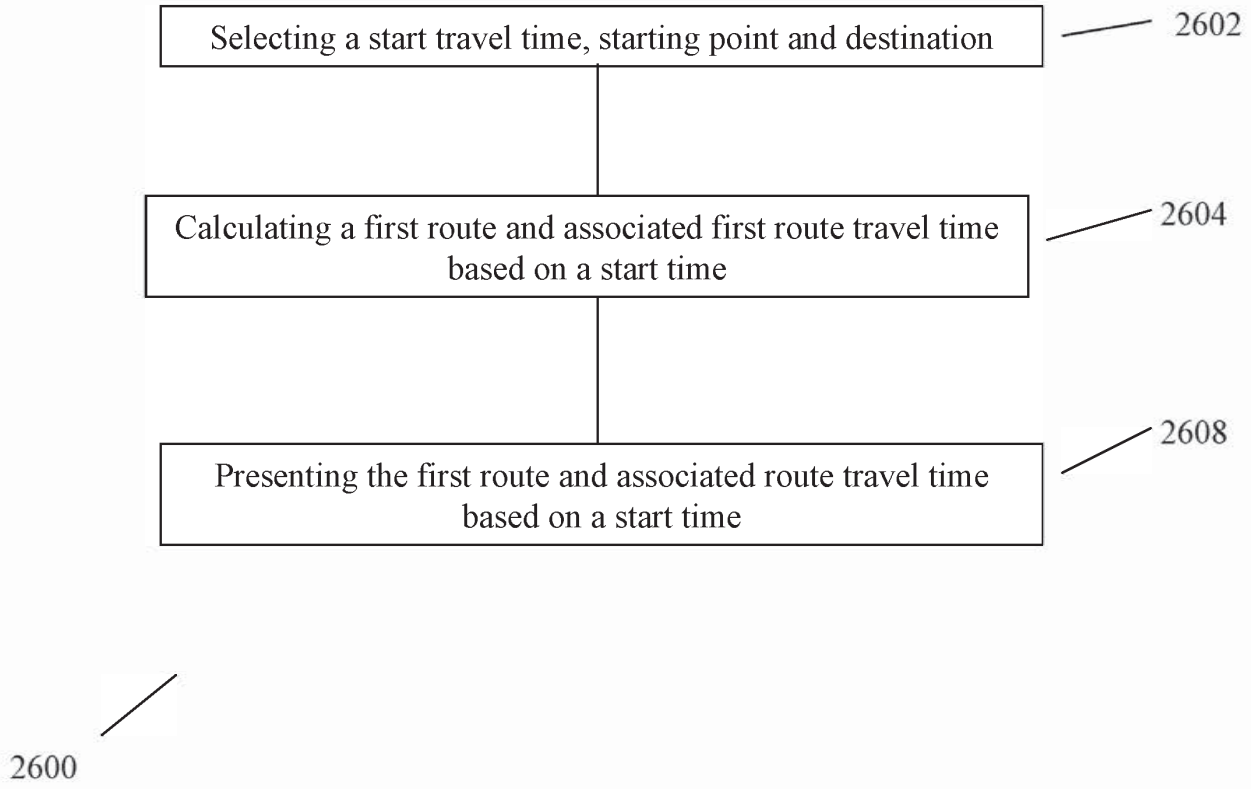

Selecting a start travel time, starting point and destination
2602
Calculating a first route and associated first route travel time based on a start time
2604
Presenting the first route and associated route travel time based on a start time
2608
2600

Fig. 26

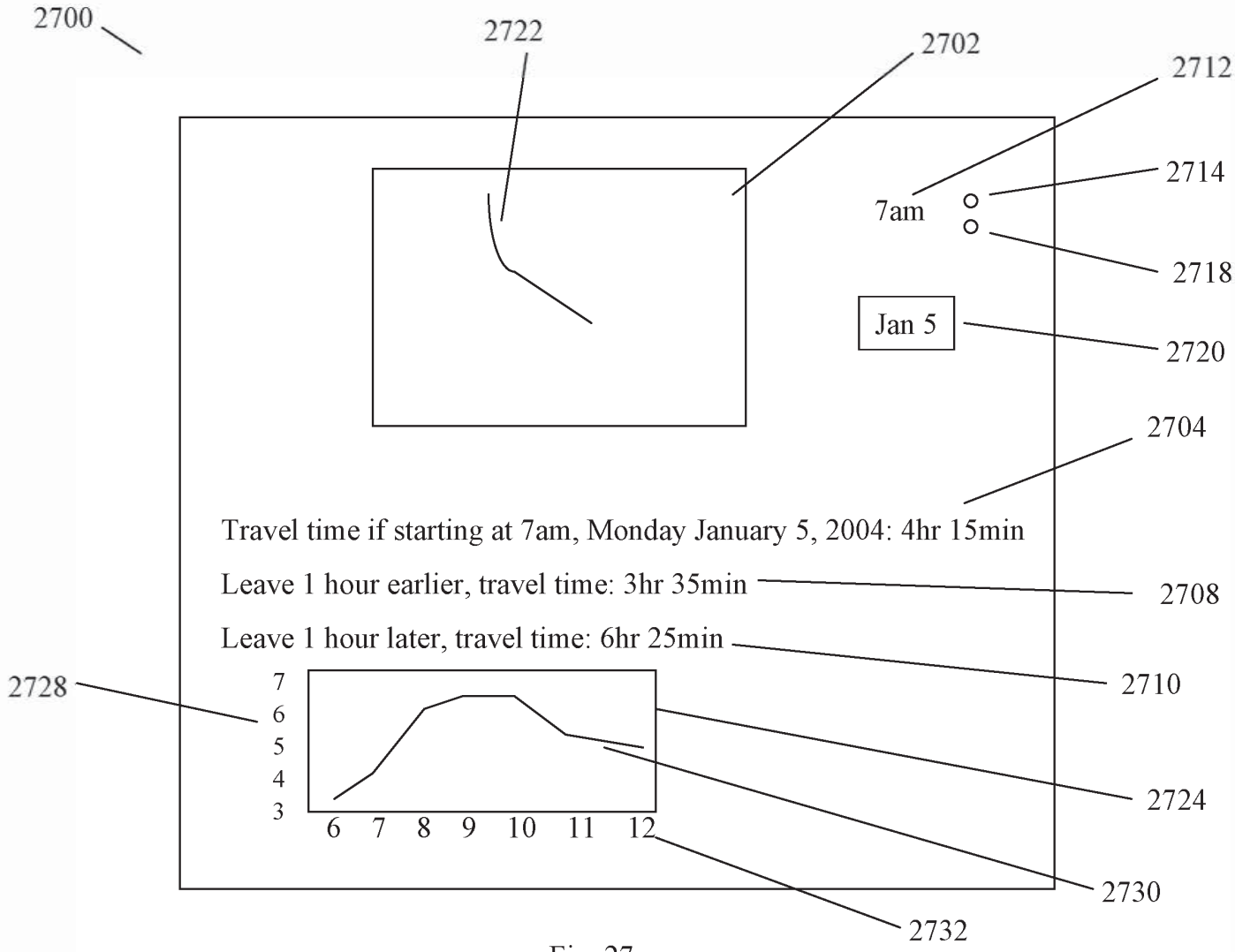

2700
2722
2702
2712
2714
7am
2718
Jan 5
2720
2704
Travel time if starting at 7am, Monday January 5, 2004: 4hr 15min
Leave 1 hour earlier, travel time: 3hr 35min
2708
Leave 1 hour later, travel time: 6hr 25min
2710
2728
7
6
5
4
3
6 7 8 9 10 11 12
2724
2730
2732

Fig. 27

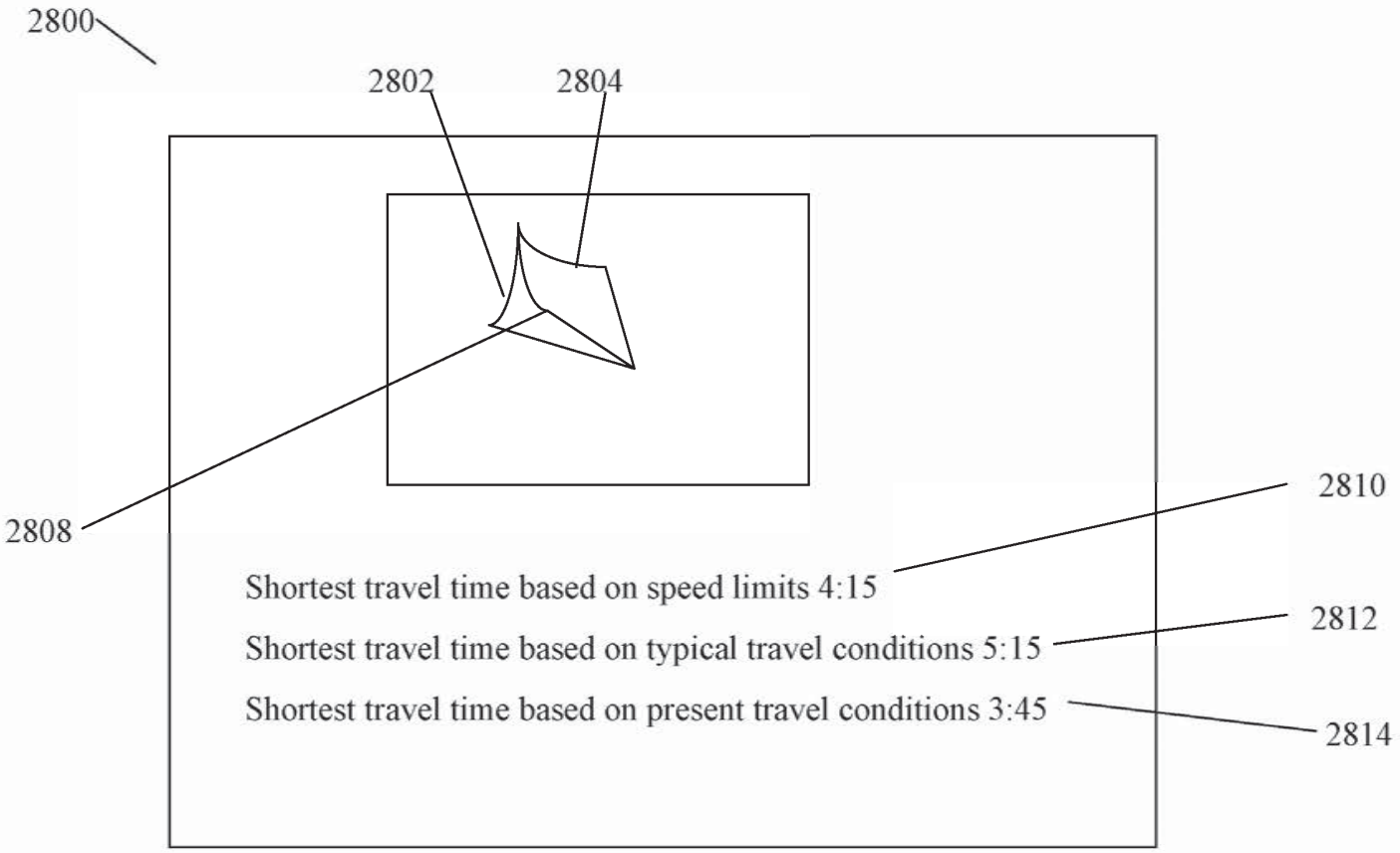

2800
2802
2804
2808
2810
Shortest travel time based on speed limits 4:15
2812
Shortest travel time based on typical travel conditions 5:15
Shortest travel time based on present travel conditions 3:45
2814

Fig. 28

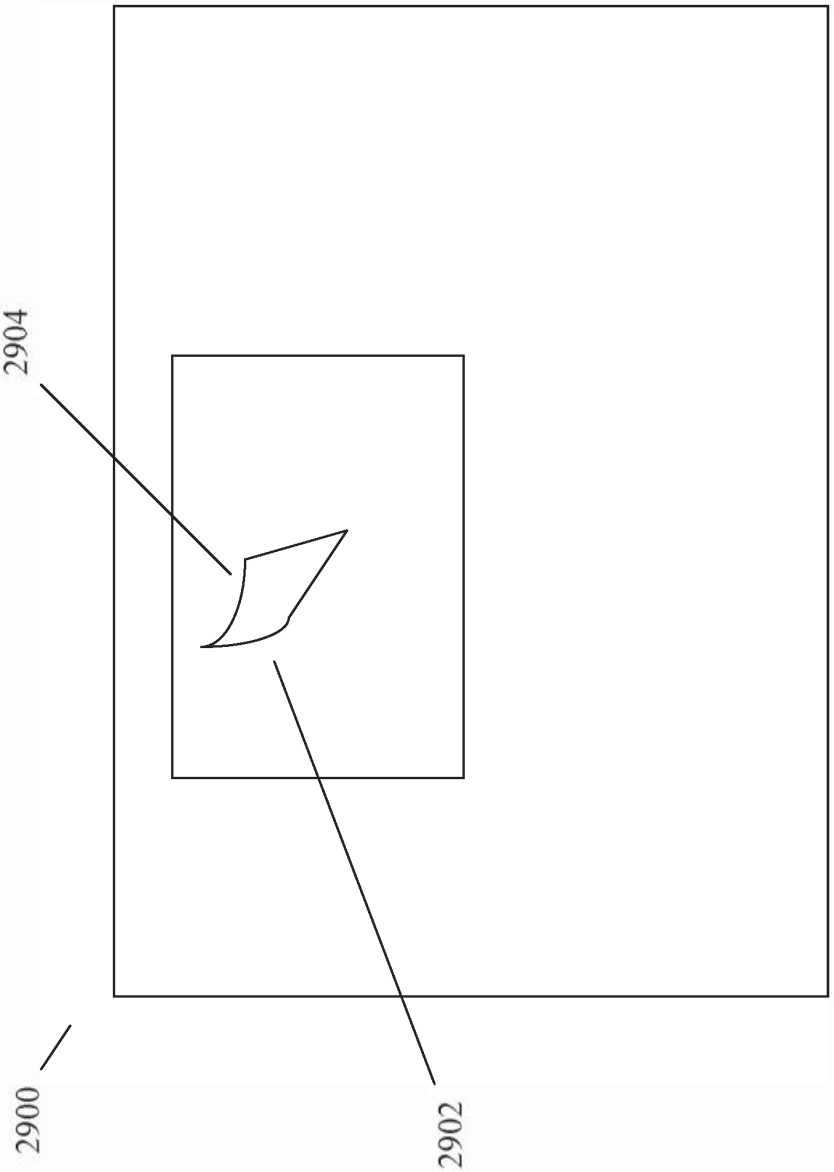


Fig.29

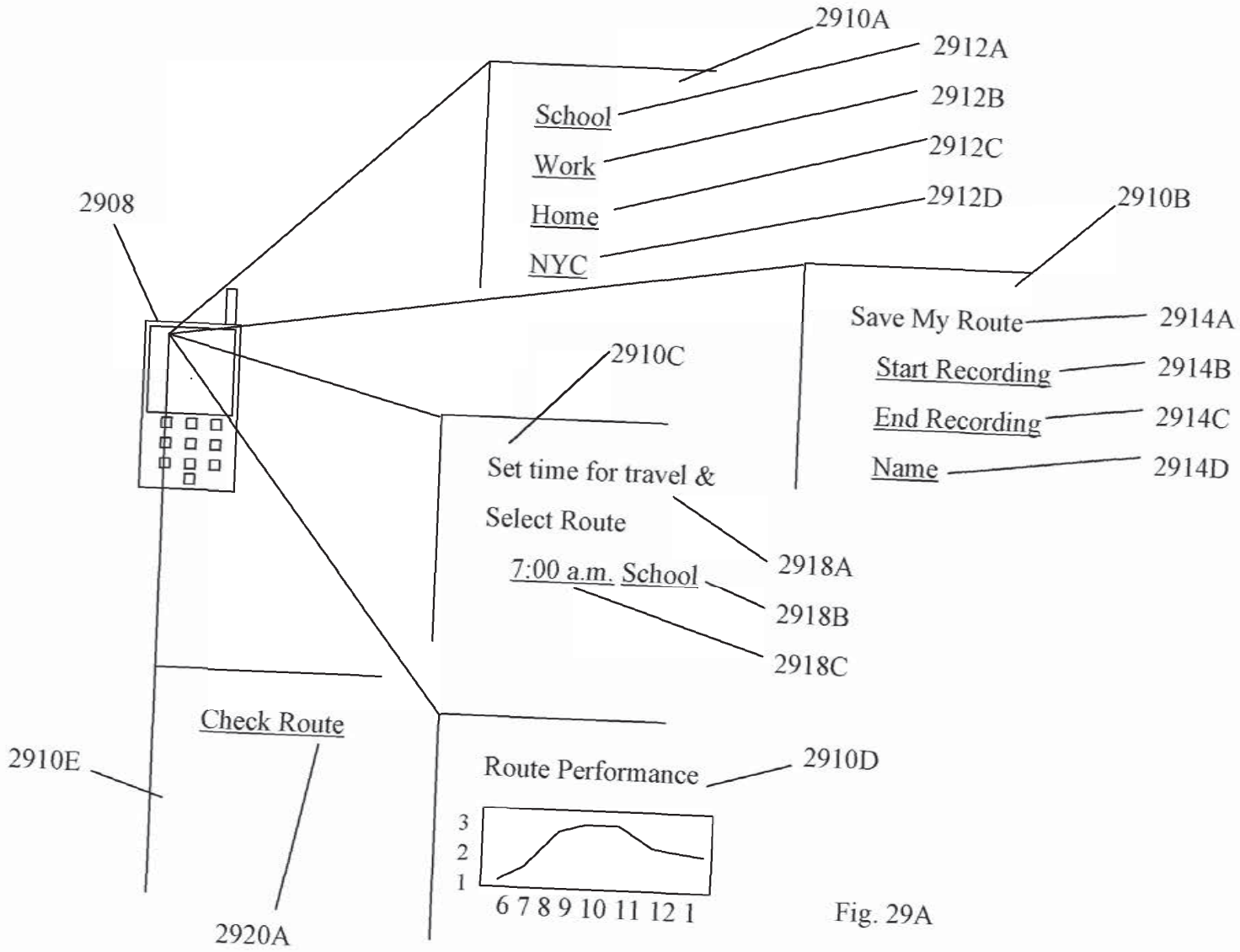

2910A
2912A
School
2912B
Work
2912C
Home
2912D
NYC
2908
2910B
Save My Route
2914A
Start Recording
2914B
End Recording
2914C
Name
2914D
2910C
Set time for travel &
Select Route
2918A
7:00 a.m. School
2918B
2918C
Check Route
2910E
Route Performance
2910D
3
2
1
6 7 8 9 10 11 12 1
2920A

Fig. 29A

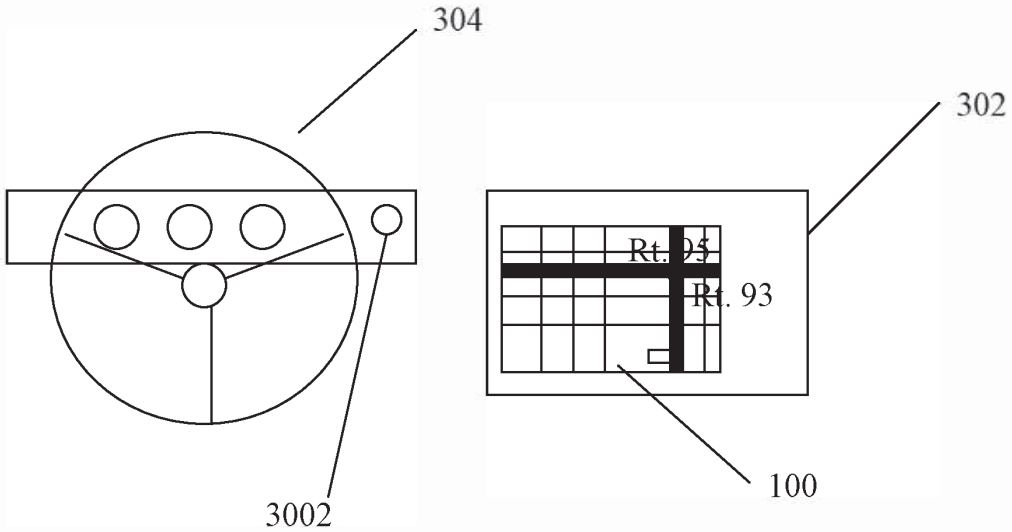


Fig. 30

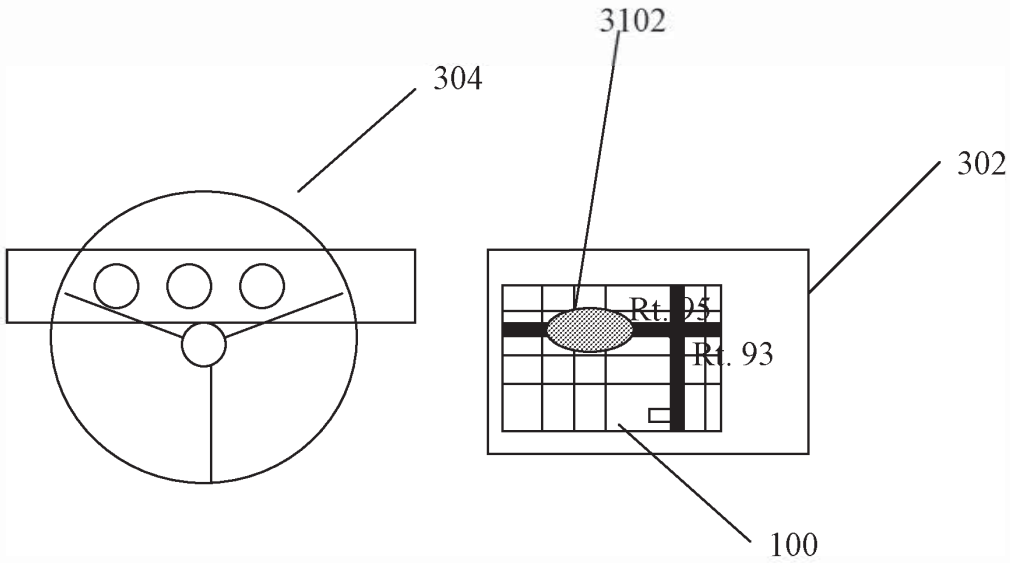


Fig. 31

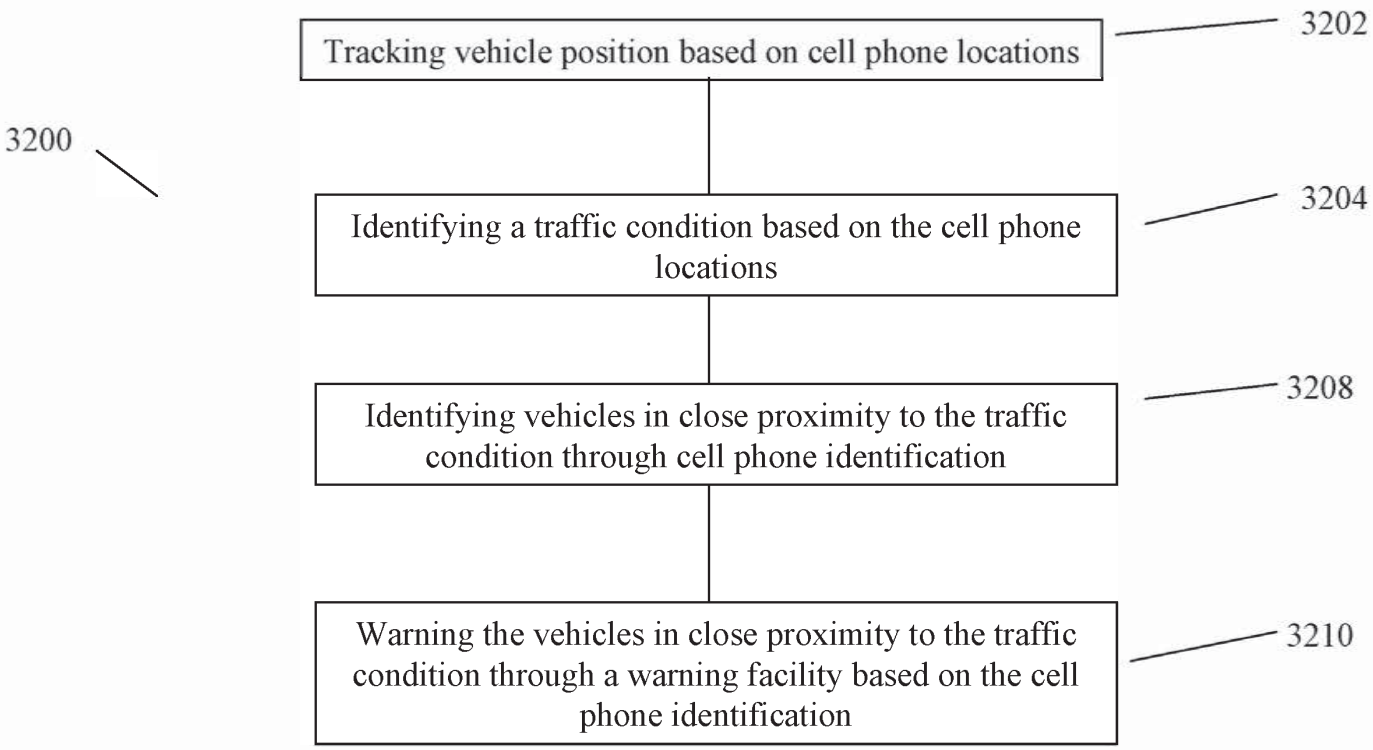

3200
Tracking vehicle position based on cell phone locations
3202
Identifying a traffic condition based on the cell phone locations
3204
Identifying vehicles in close proximity to the traffic condition through cell phone identification
3208
Warning the vehicles in close proximity to the traffic condition through a warning facility based on the cell phone identification
3210

Fig. 32

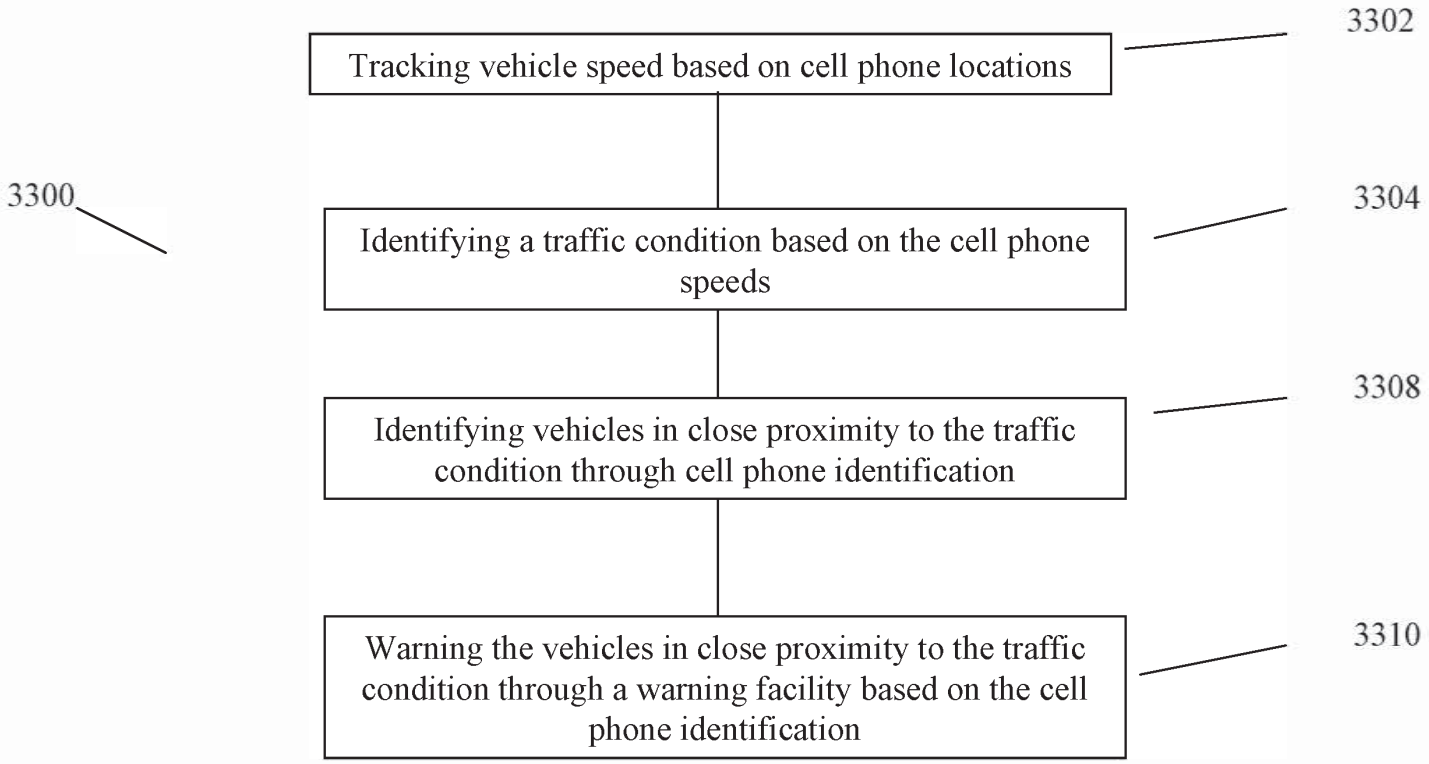

3300
Tracking vehicle speed based on cell phone locations
3302
Identifying a traffic condition based on the cell phone speeds
3304
Identifying vehicles in close proximity to the traffic condition through cell phone identification
3308
Warning the vehicles in close proximity to the traffic condition through a warning facility based on the cell phone identification
3310

Fig. 33

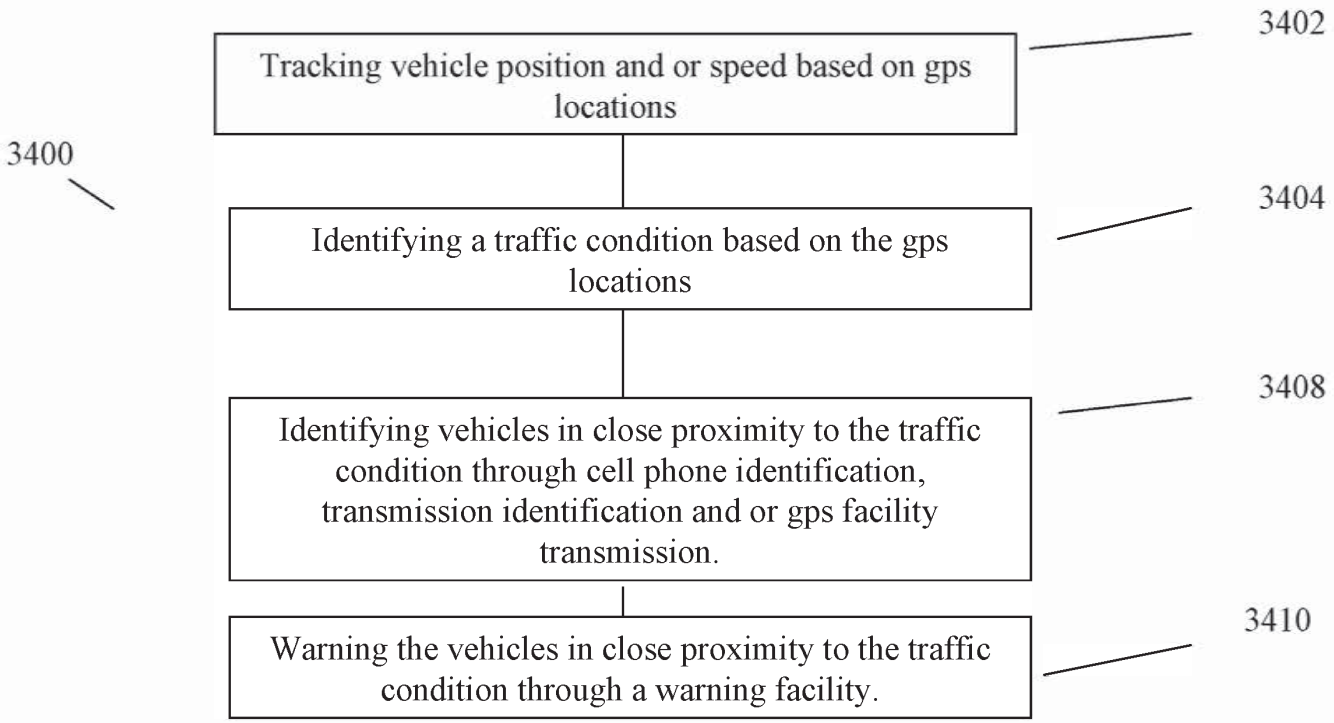

3400
Tracking vehicle position and or speed based on gps locations
3402
Identifying a traffic condition based on the gps locations
3404
Identifying vehicles in close proximity to the traffic condition through cell phone identification, transmission identification and or gps facility transmission.
3408
Warning the vehicles in close proximity to the traffic condition through a warning facility.
3410

Fig. 34

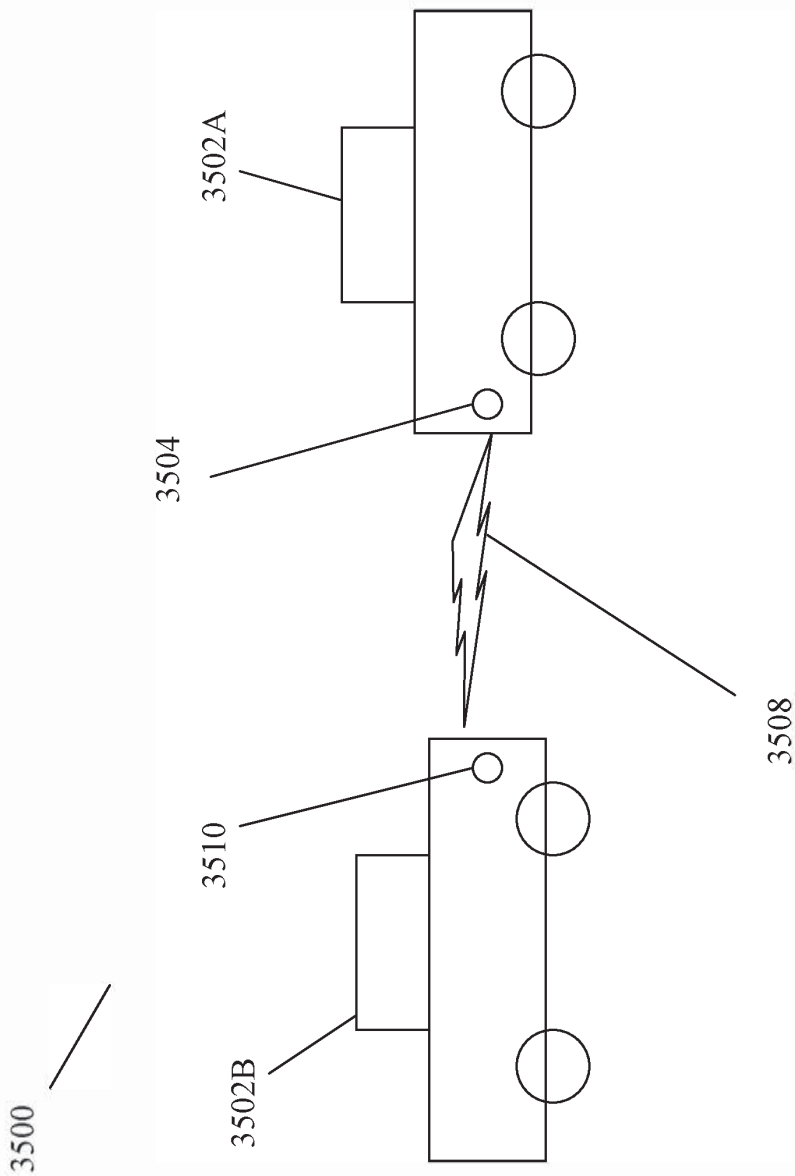


Fig. 35

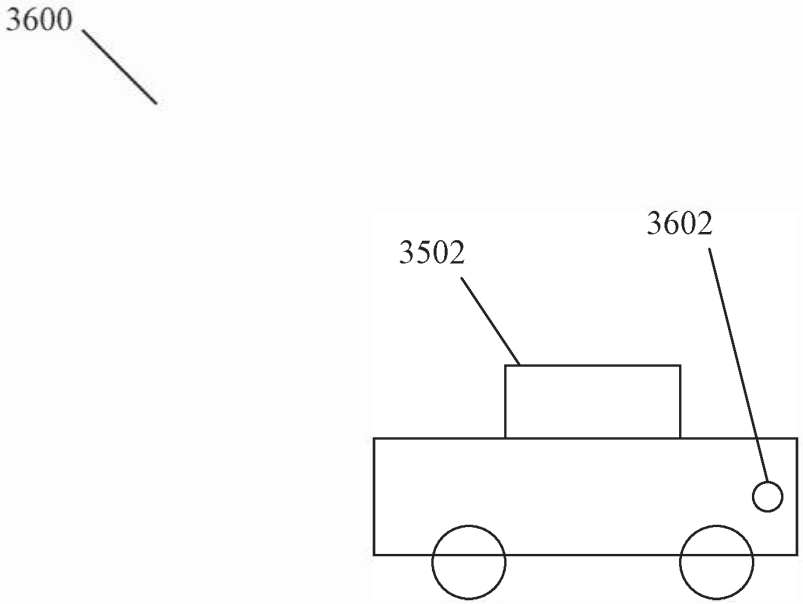


Fig. 36

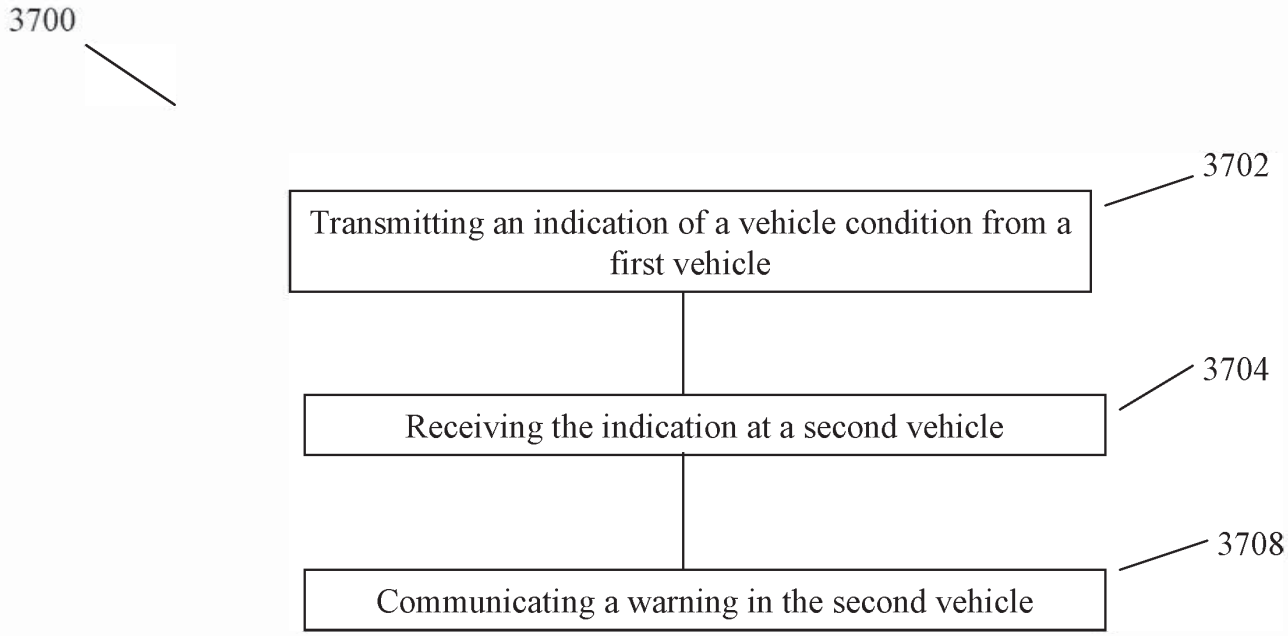

3700
3702
Transmitting an indication of a vehicle condition from a first vehicle
3704
Receiving the indication at a second vehicle
3708
Communicating a warning in the second vehicle

Fig.37

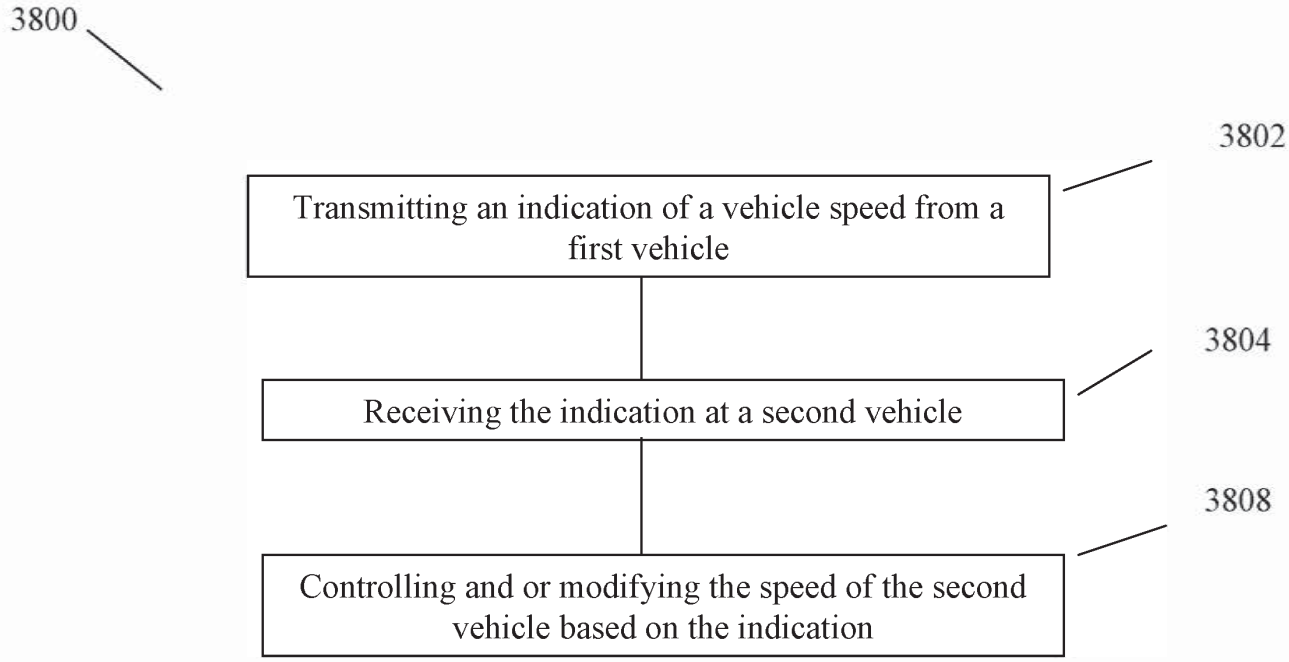

3800
3802
Transmitting an indication of a vehicle speed from a first vehicle
3804
Receiving the indication at a second vehicle
3808
Controlling and or modifying the speed of the second vehicle based on the indication

Fig. 38

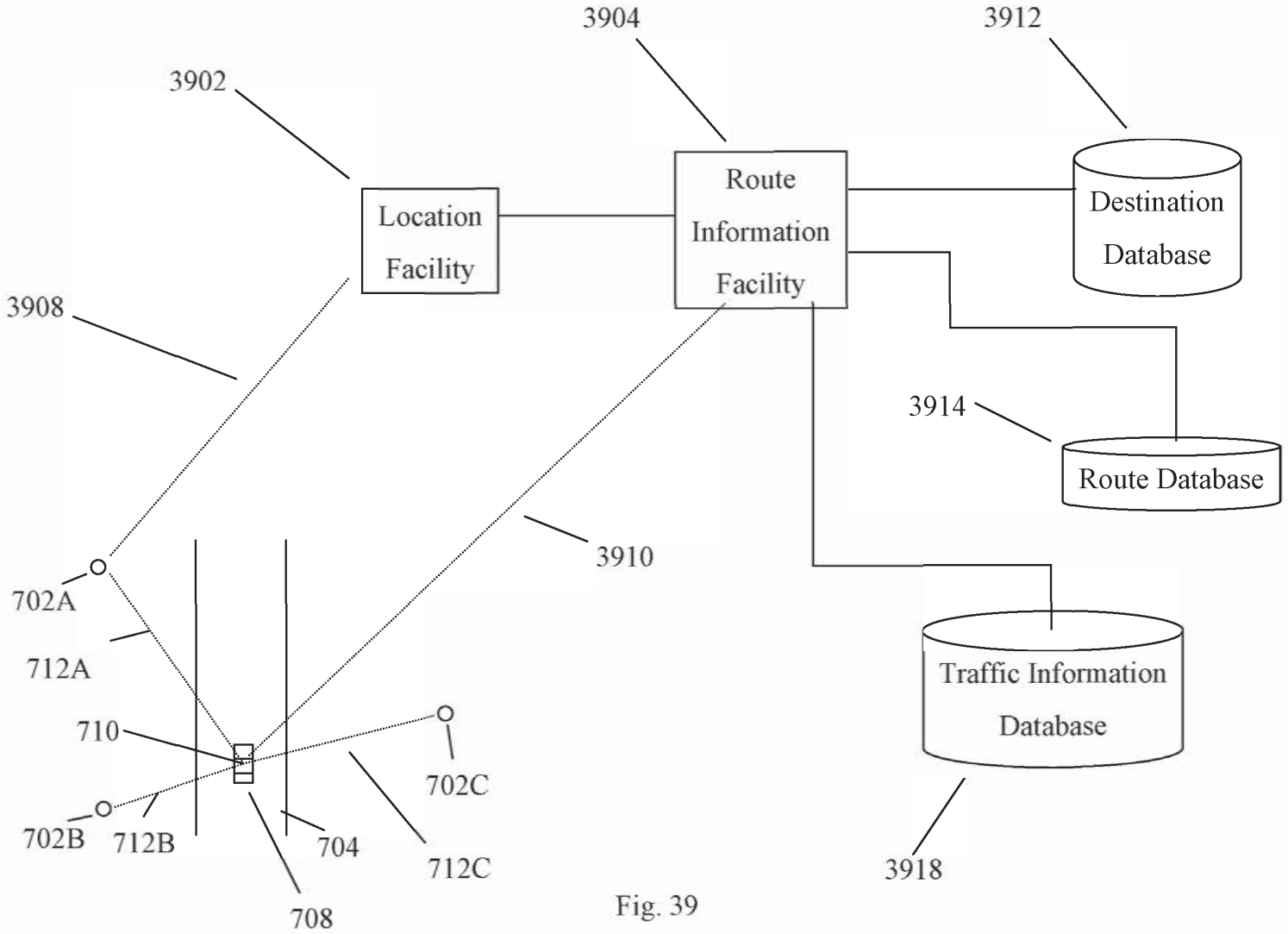

3904
3912
3902
Location Facility
Route Information Facility
Destination Database
3908
3914
Route Database
3910
702A
712A
Traffic Information Database
710
702C
702B
712B
704
712C
708
3918

Fig. 39

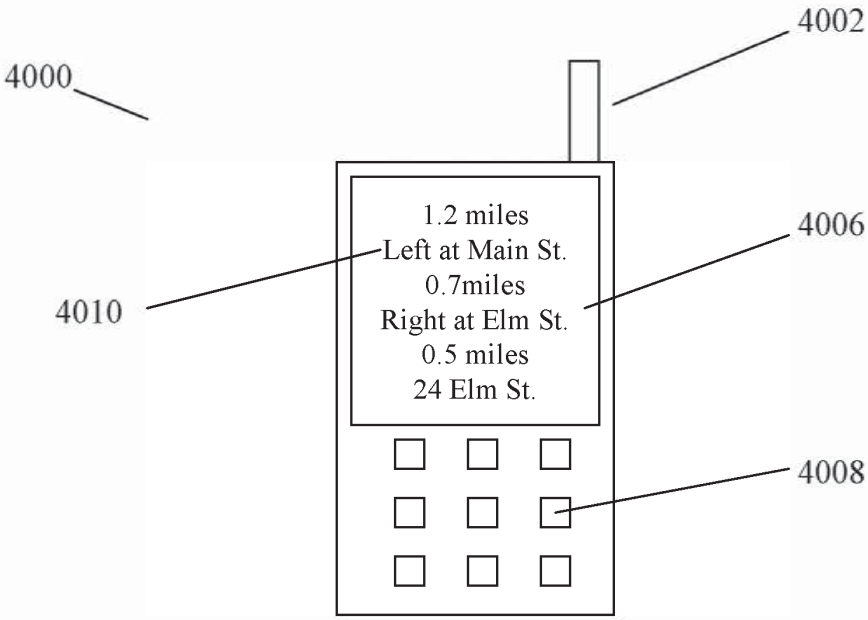

4000
4002
1.2 miles
Left at Main St.
0.7miles
Right at Elm St.
0.5 miles
24 Elm St.
4010
4006
4008

Fig. 40

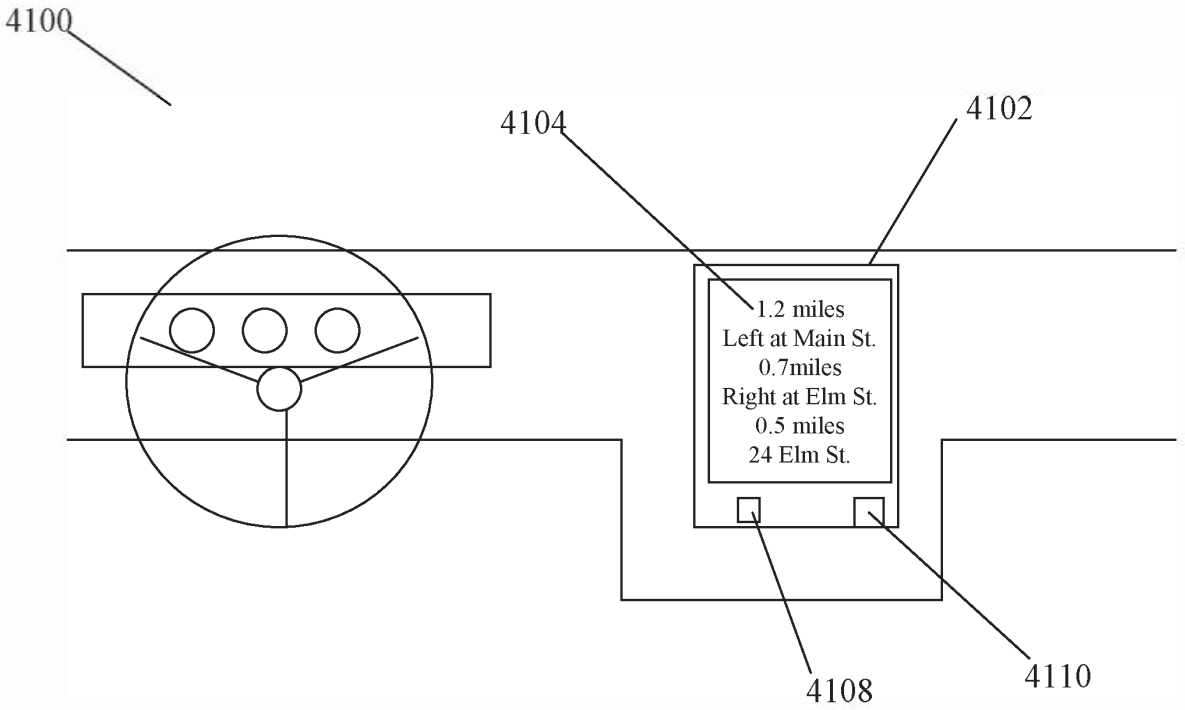

4100
4104
4102
1.2 miles
Left at Main St.
0.7miles
Right at Elm St.
0.5 miles
24 Elm St.
4108
4110

Fig. 41

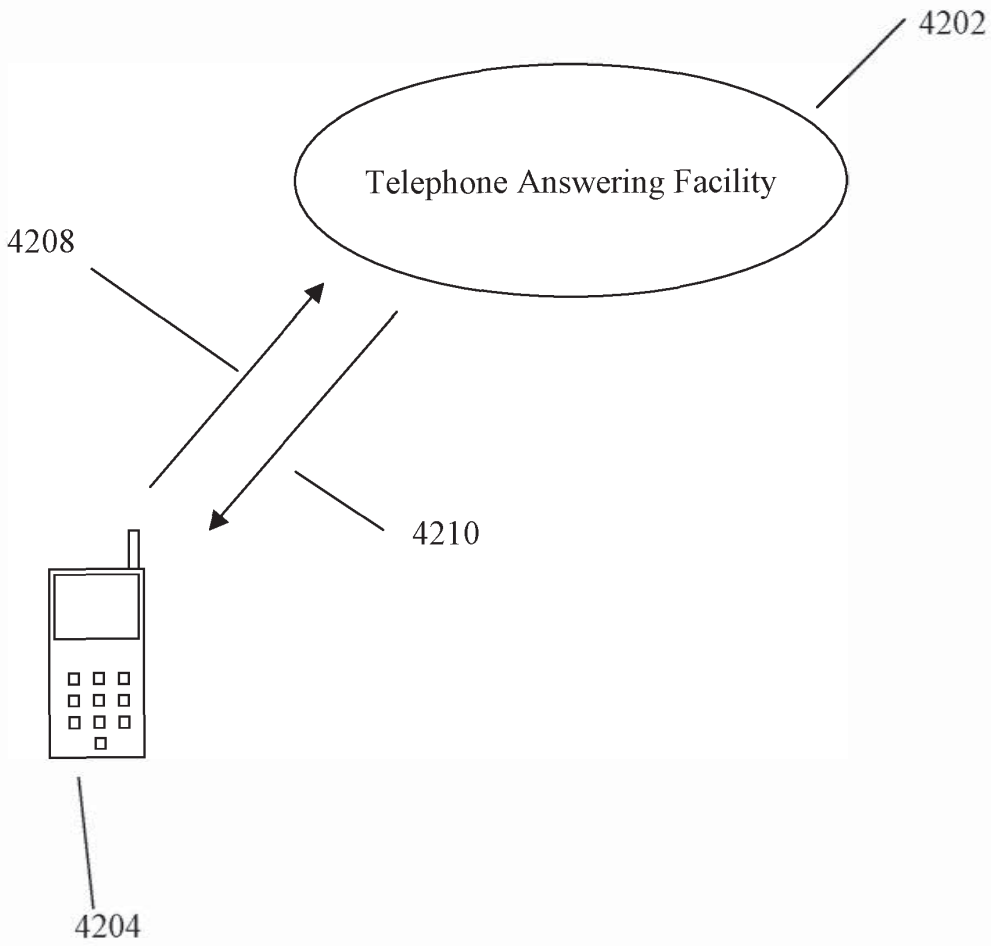


Fig. 42

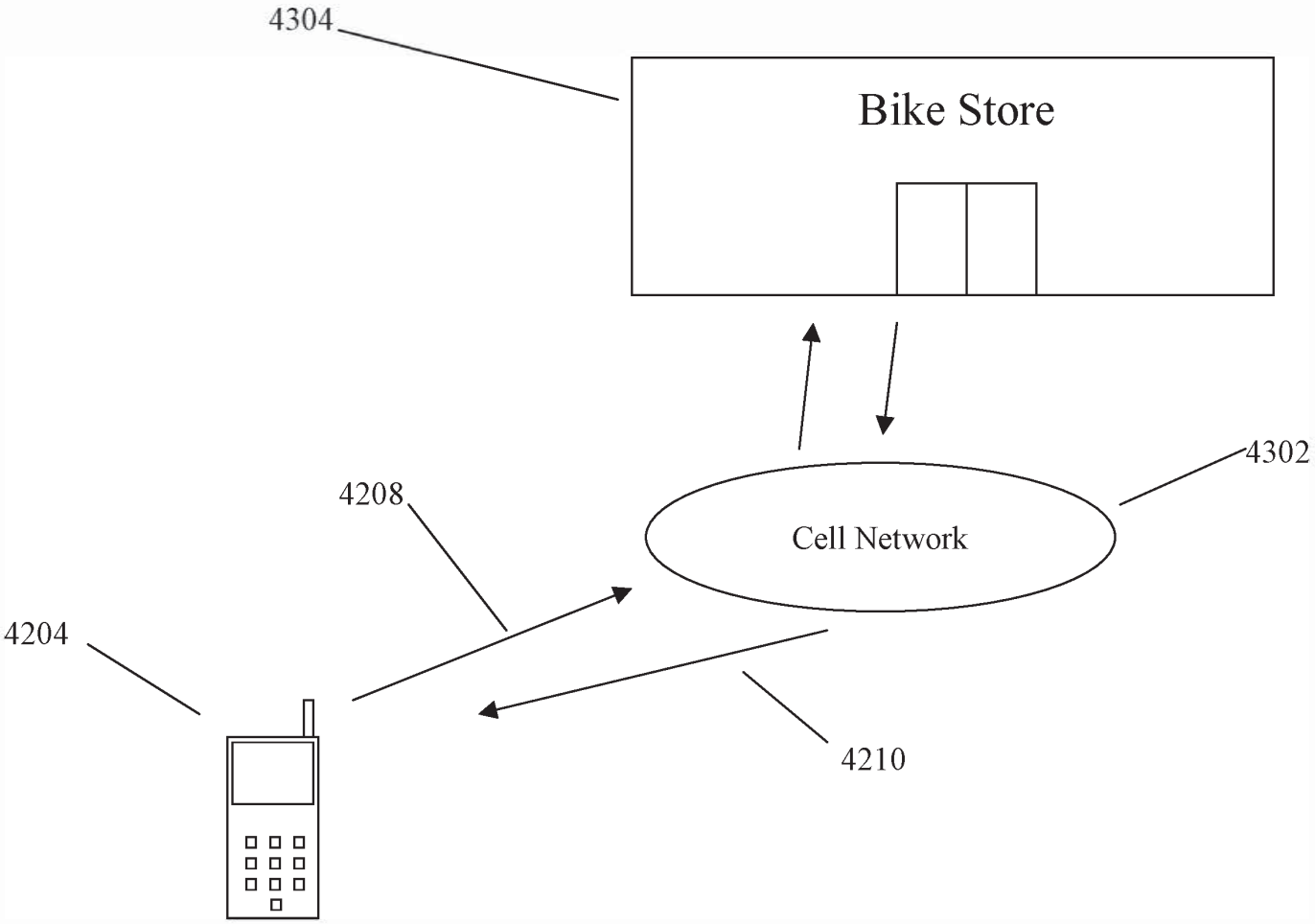


Fig. 43

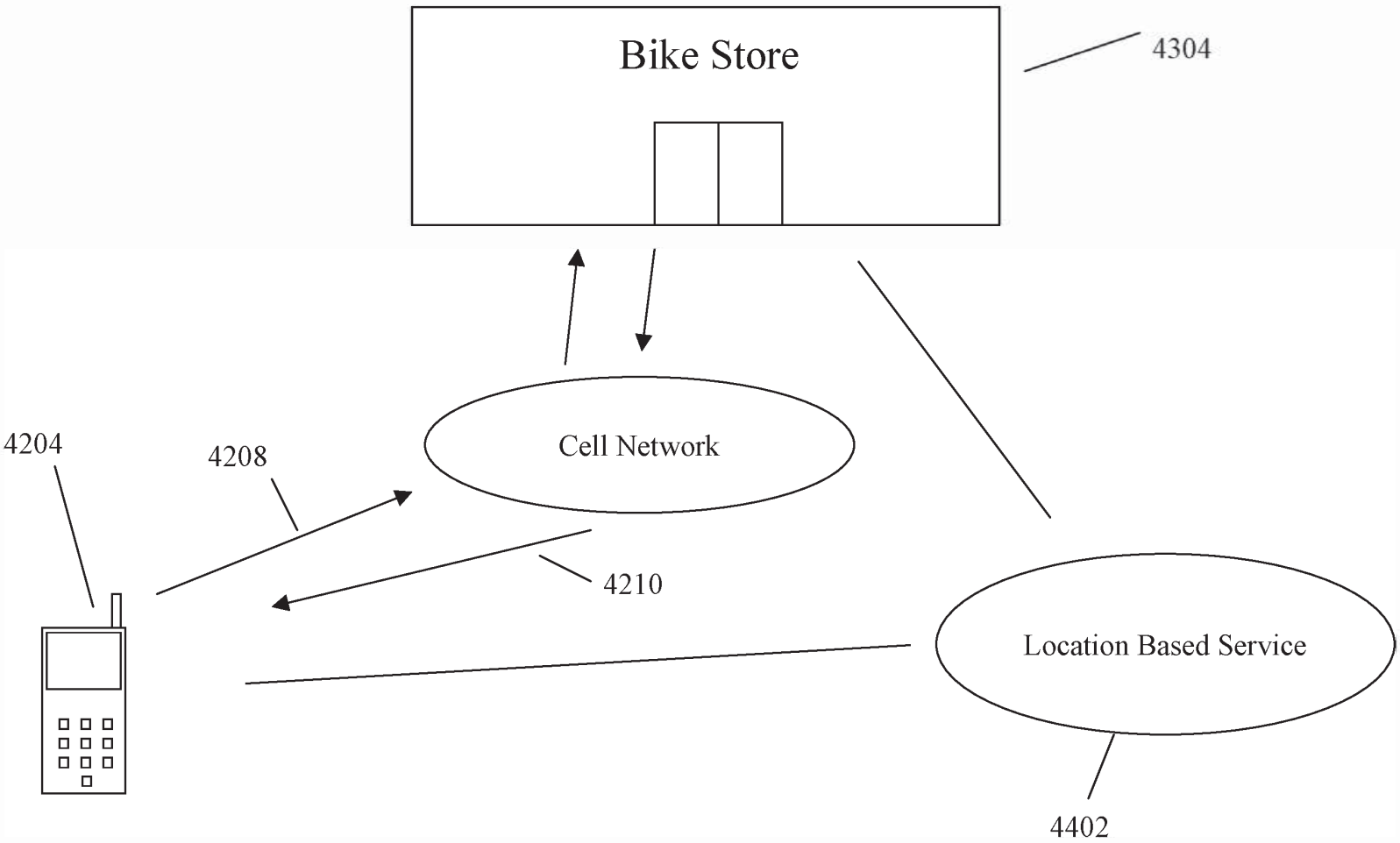

Bike Store
4304
Cell Network
4204
4208
4210
Location Based Service
4402

Fig. 44

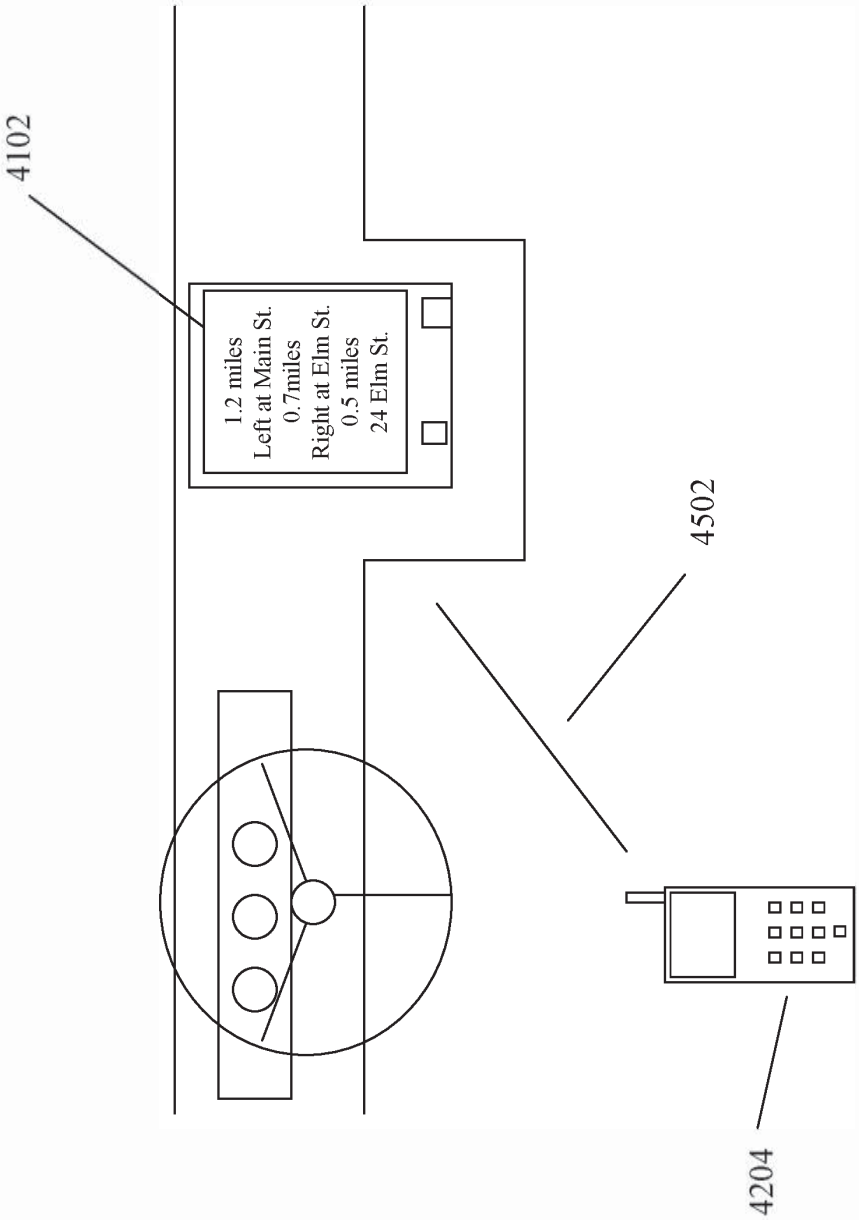

4102
1.2 miles
Left at Main St.
0.7miles
Right at Elm St.
0.5 miles
24 Elm St.
4502
4204

Fig. 45

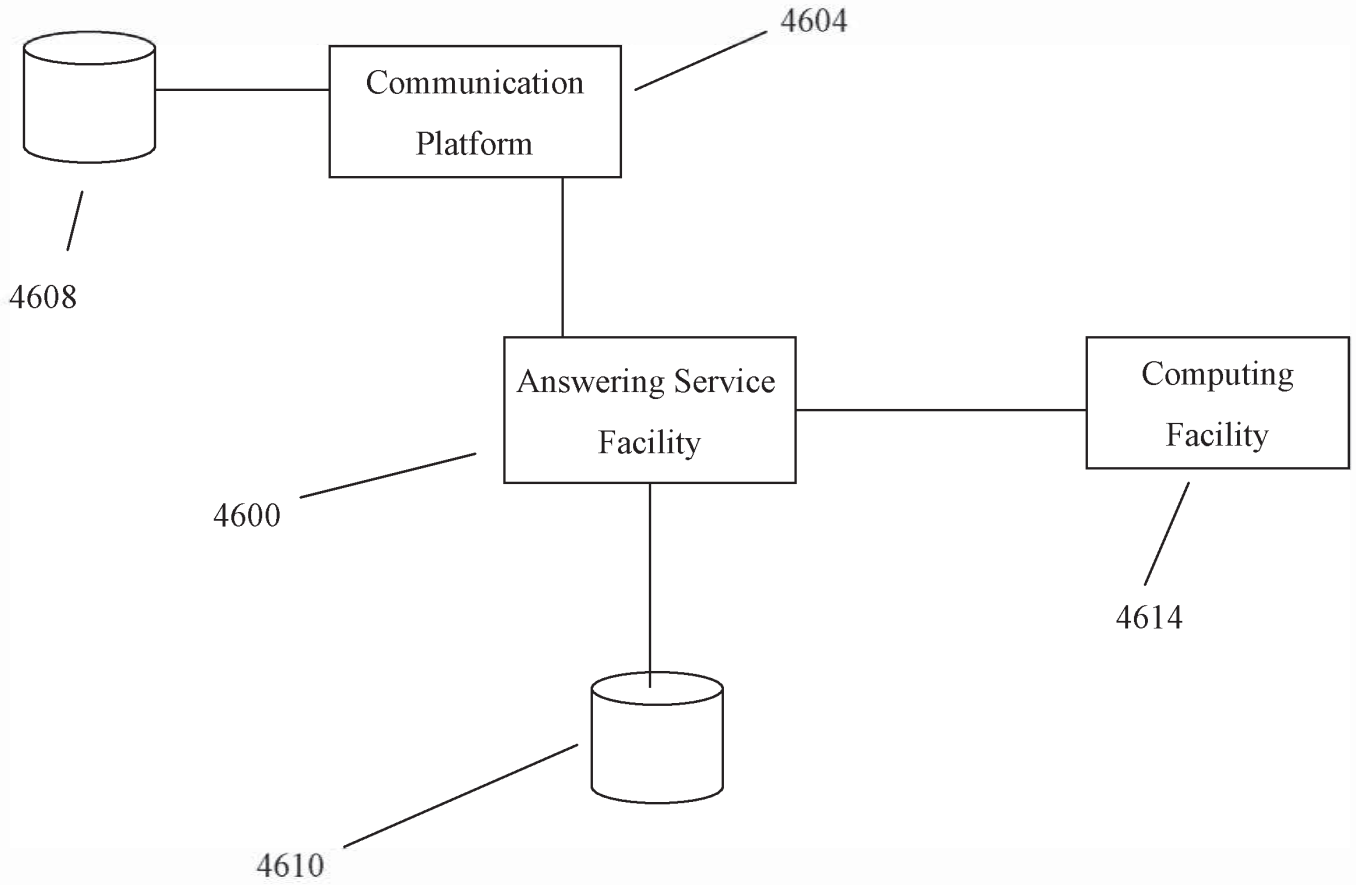

4604
Communication Platform
4608
Answering Service Facility
Computing Facility
4600
4614
4610

Fig. 46

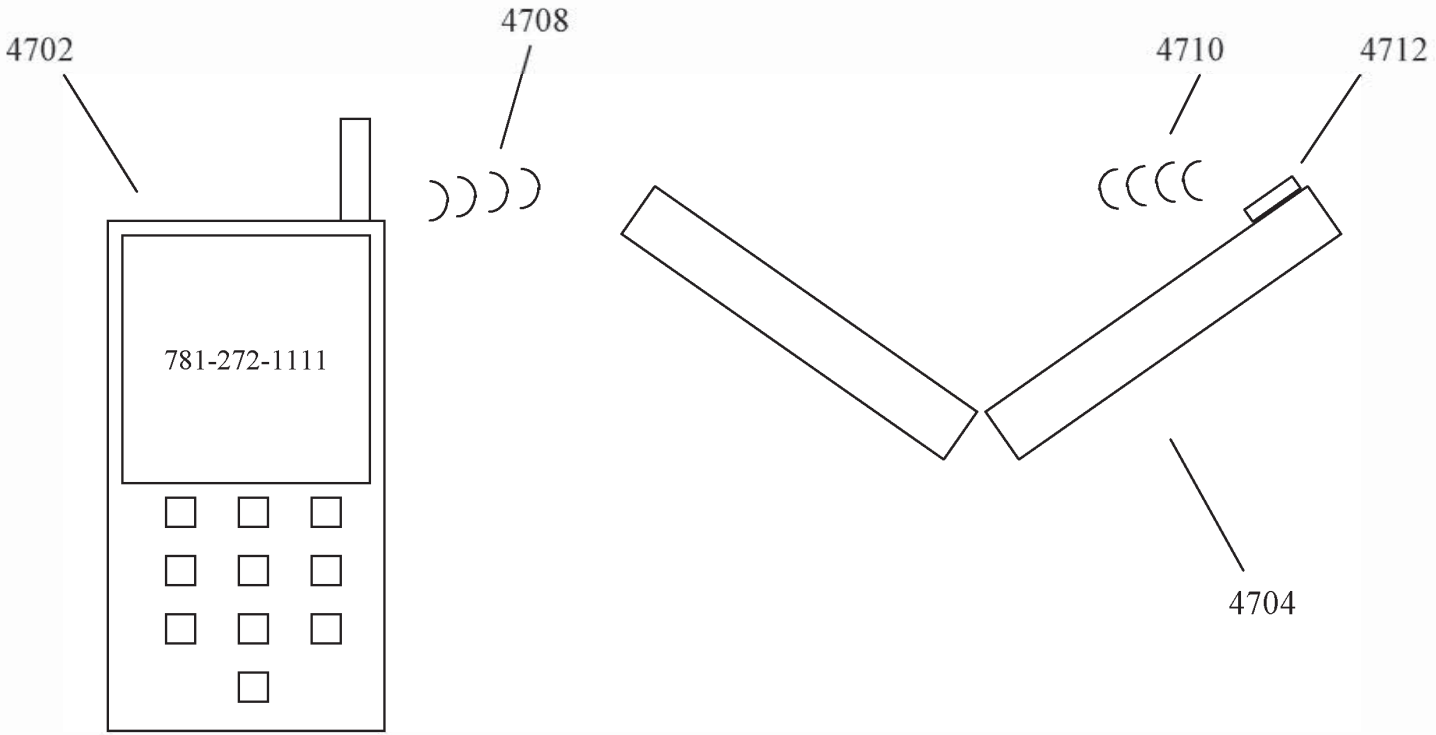


Fig. 47

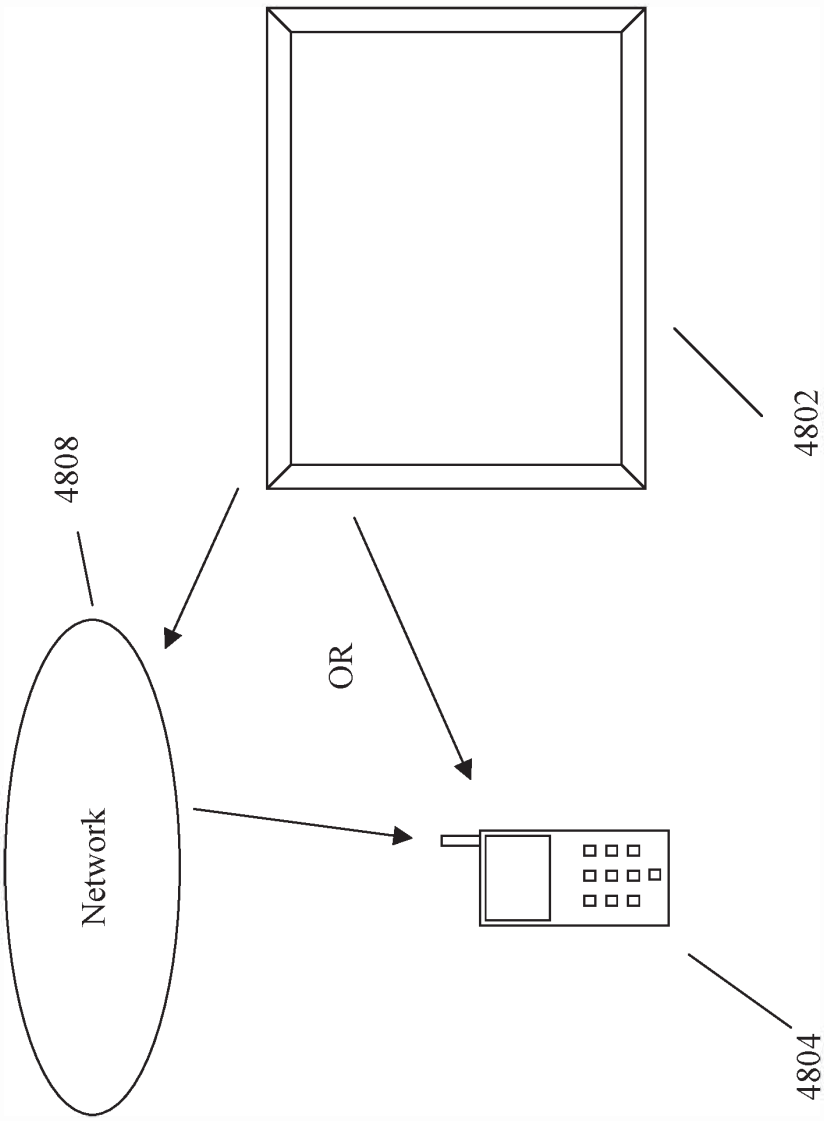


Fig. 48

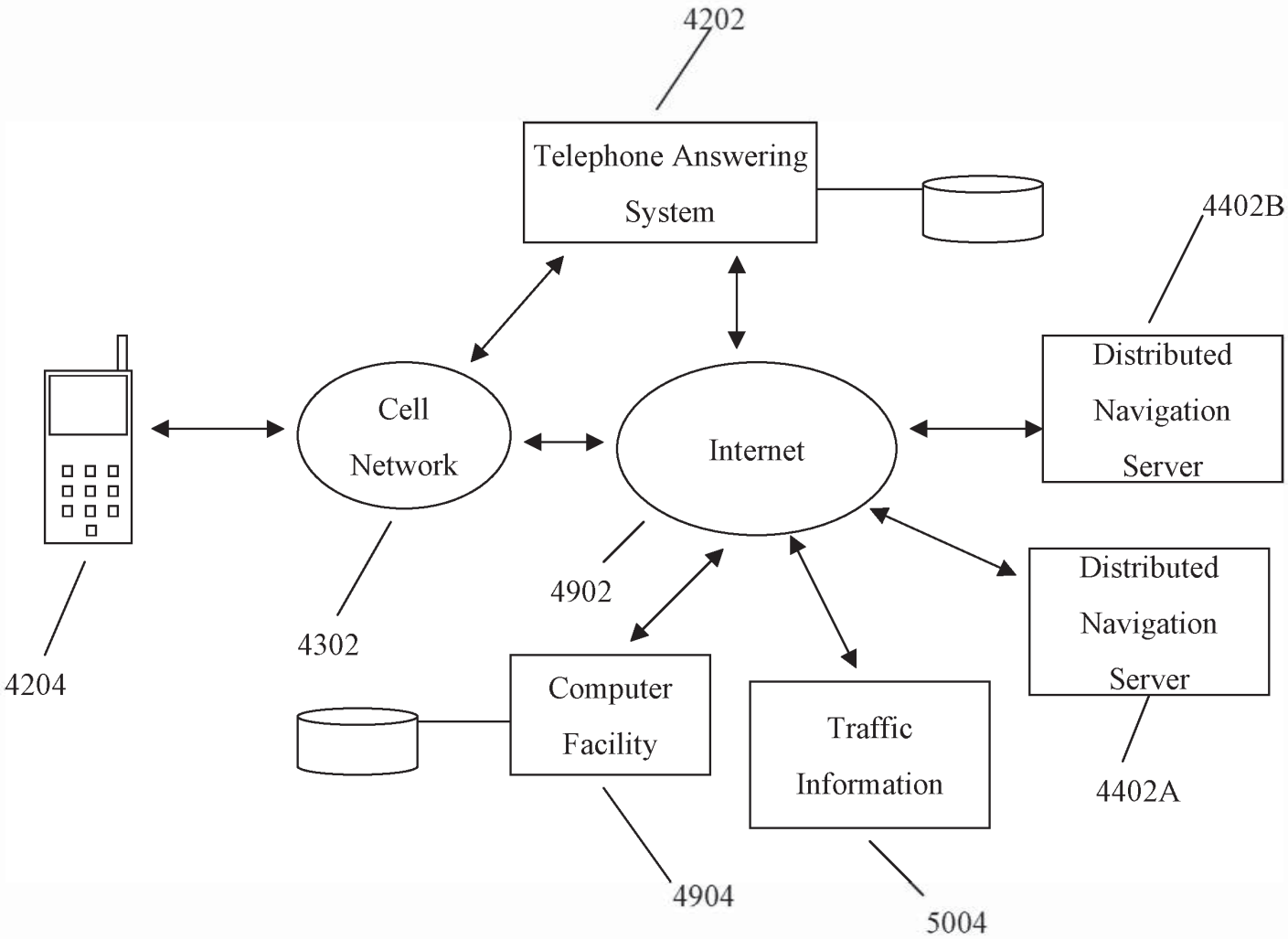

4202
Telephone Answering System
4402B
Distributed Navigation Server
Cell Network
Internet
4204
4302
4902
Distributed Navigation Server
Computer Facility
Traffic Information
4402A
4904
5004

Fig. 49

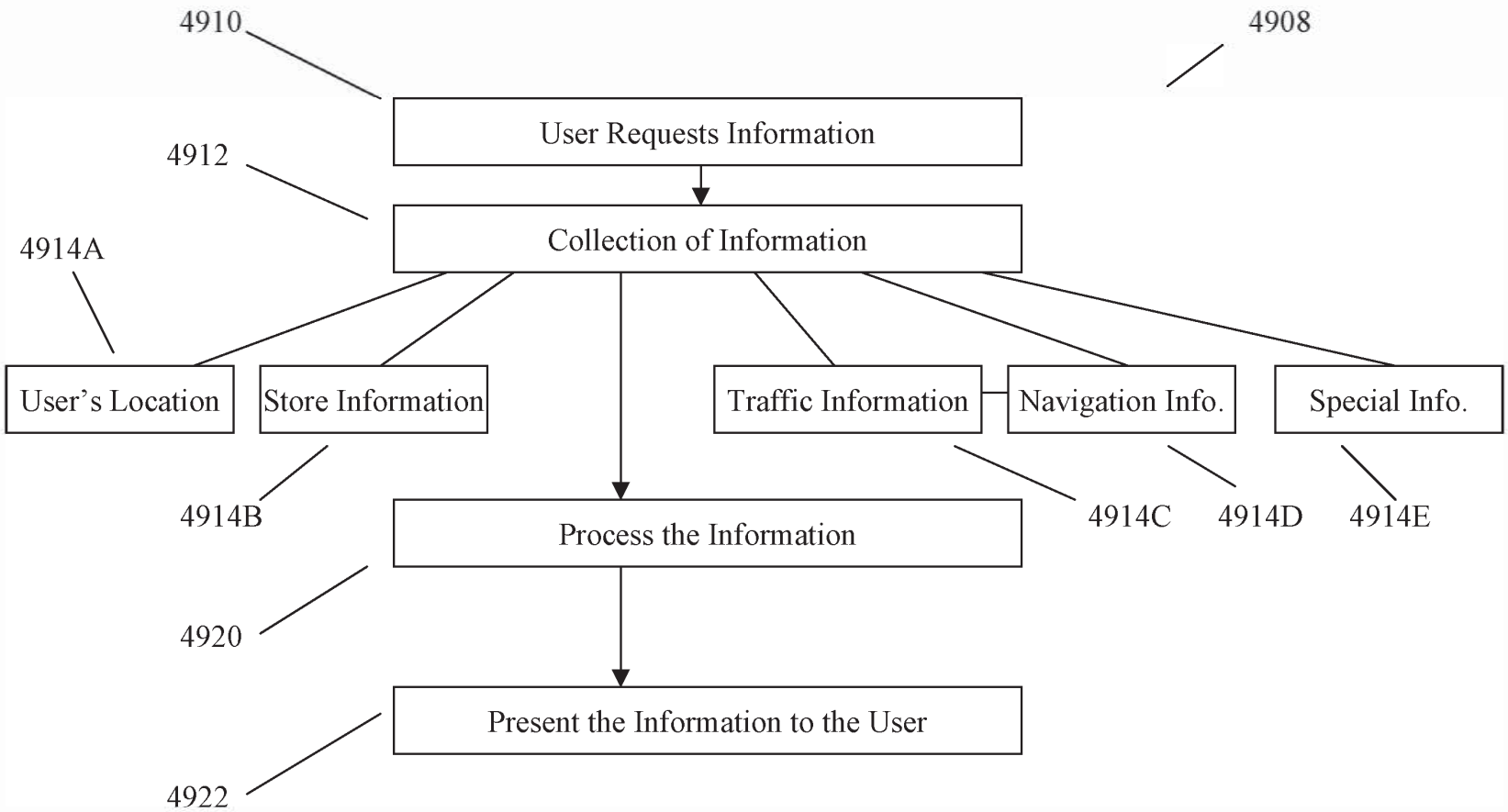

4910
4908
User Requests Information
4912
Collection of Information
4914A
User's Location
Store Information
Traffic Information
Navigation Info.
Special Info.
4914B
4914C
4914D
4914E
Process the Information
4920
Present the Information to the User
4922

Fig. 49A

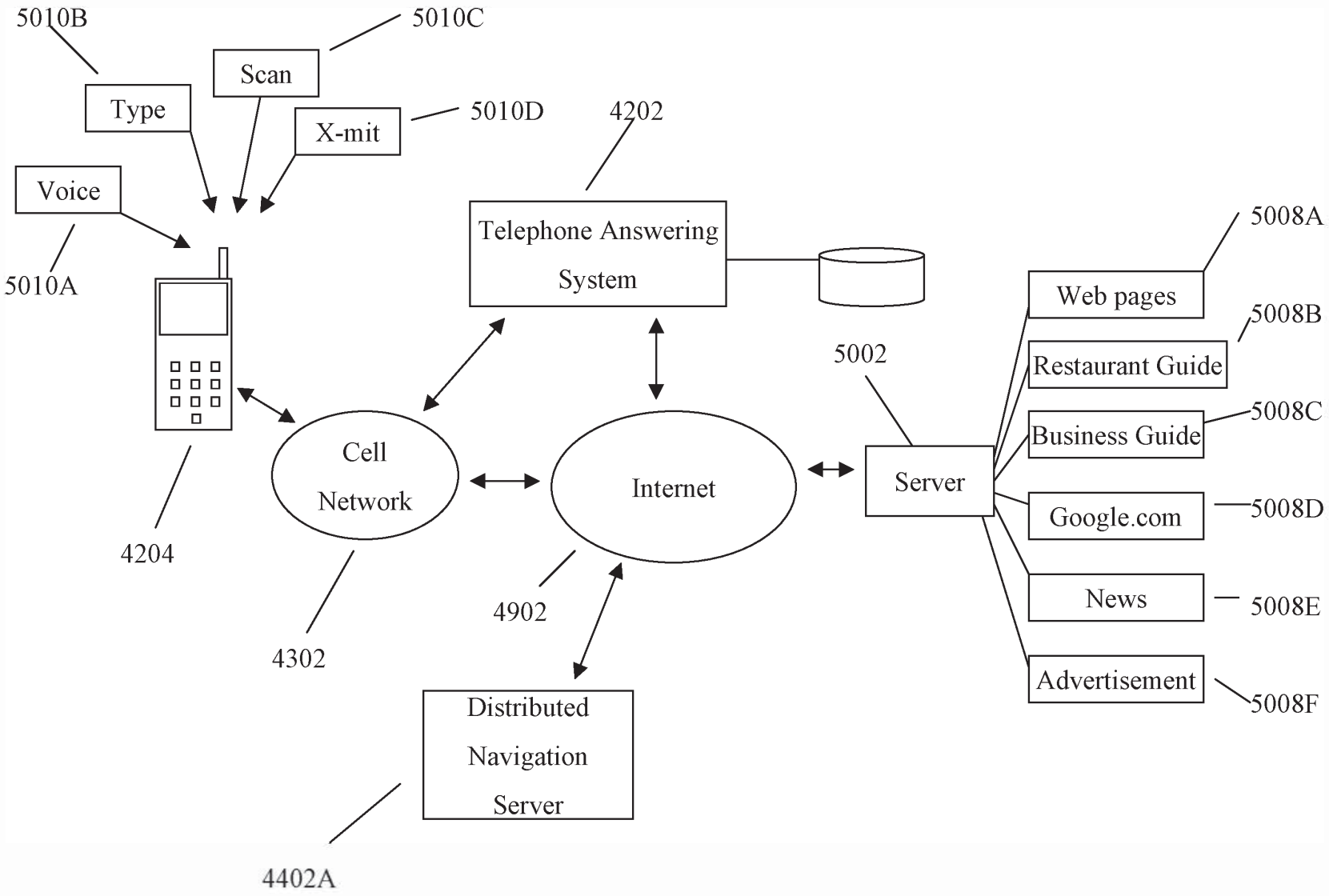

5010B
5010C
Scan
Type
X-mit
5010D
4202
Voice
5010A
Telephone Answering System
5008A
Web pages
5008B
Restaurant Guide
5002
5008C
Business Guide
Cell Network
Internet
Server
Google.com
5008D
4204
4902
News
5008E
4302
Advertisement
5008F
Distributed Navigation Server
4402A

Fig. 50

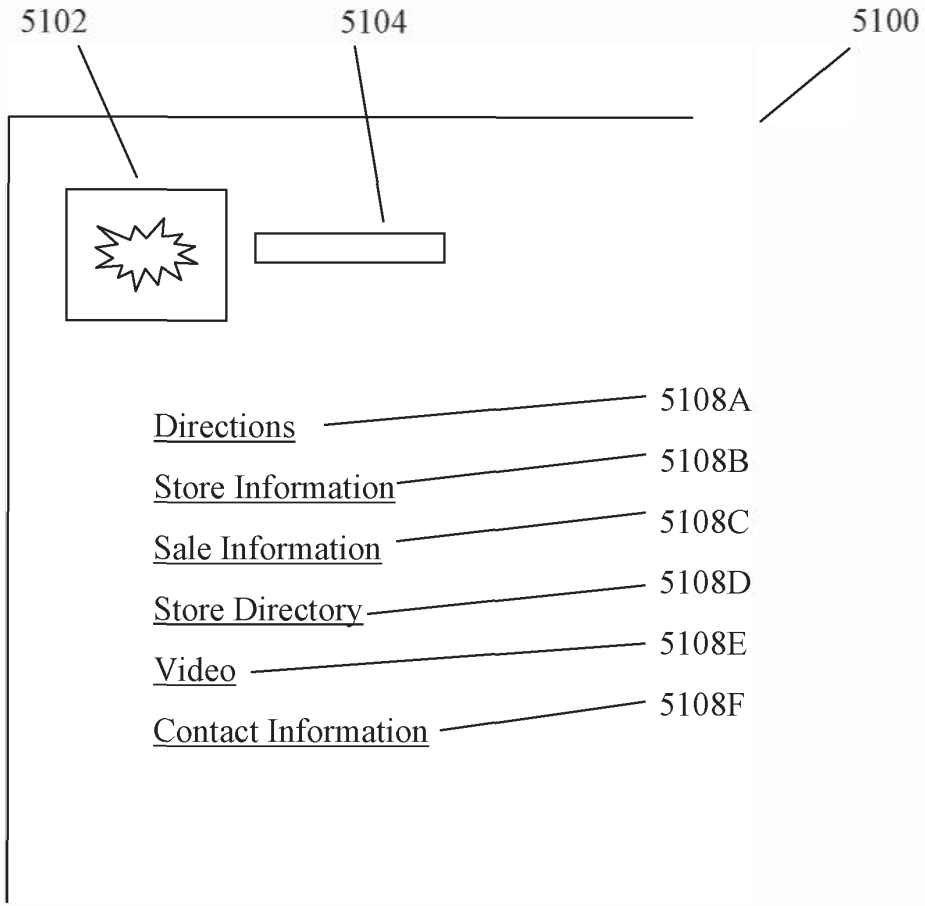

5102
5104
5100
Directions
5108A
Store Information
5108B
Sale Information
5108C
Store Directory
5108D
Video
5108E
Contact Information
5108F

Fig. 51

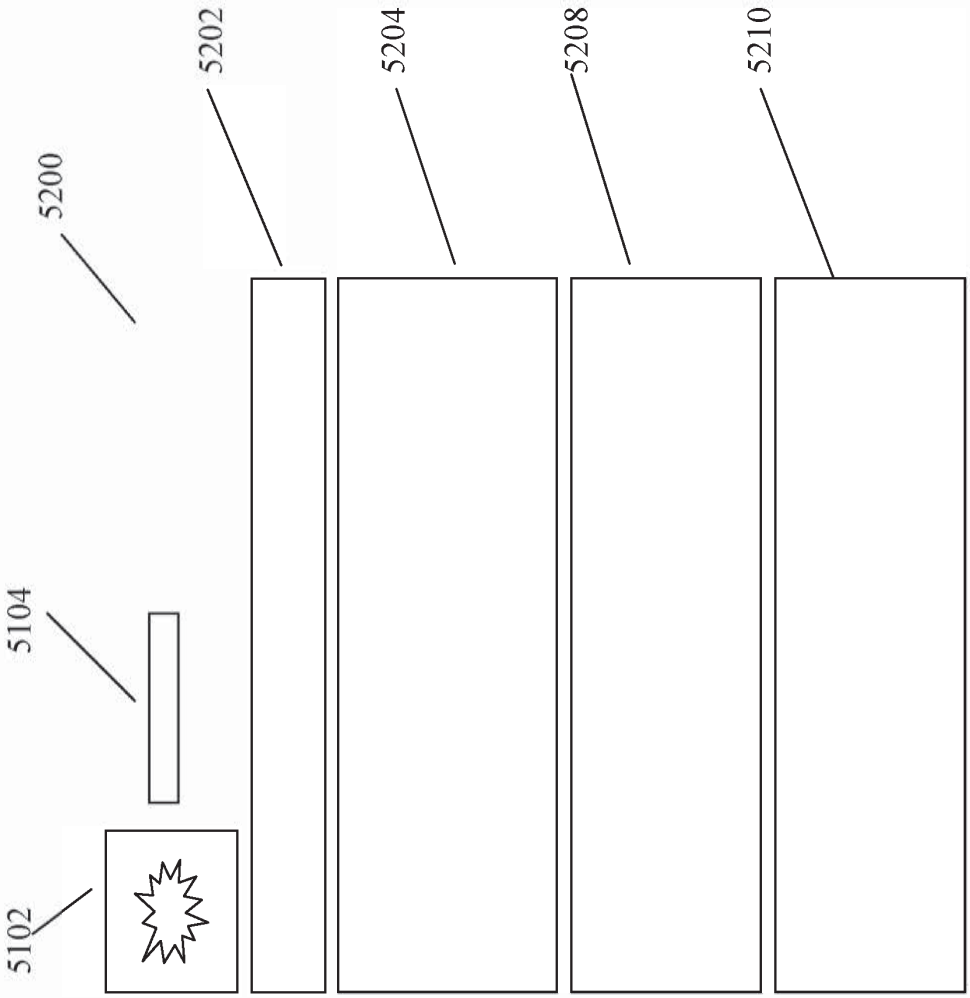


Fig. 52

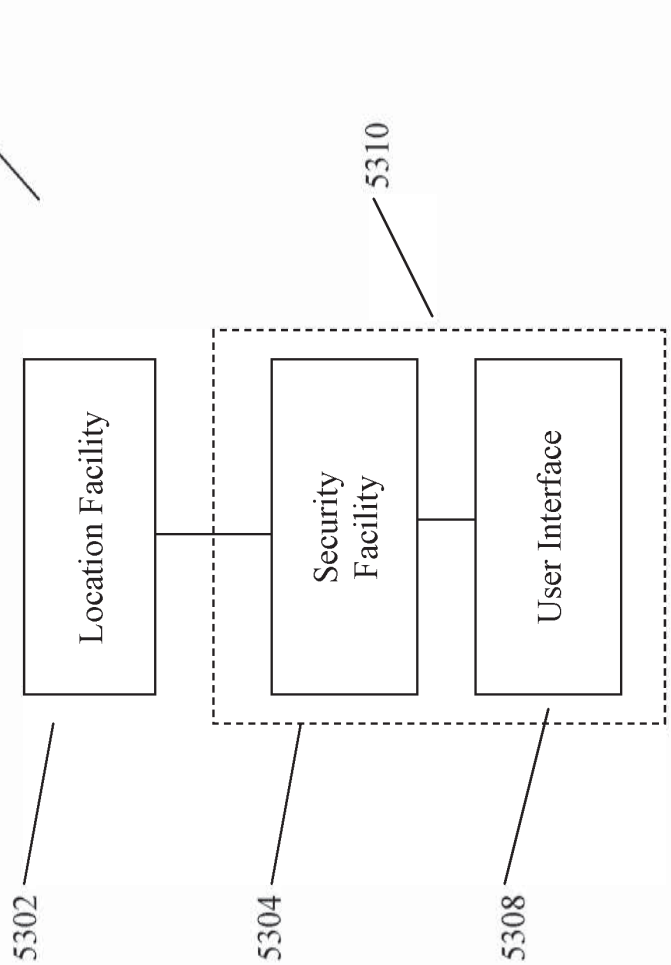

5300
5310
Location Facility
Security Facility
User Interface
5302
5304
5308

Fig. 53

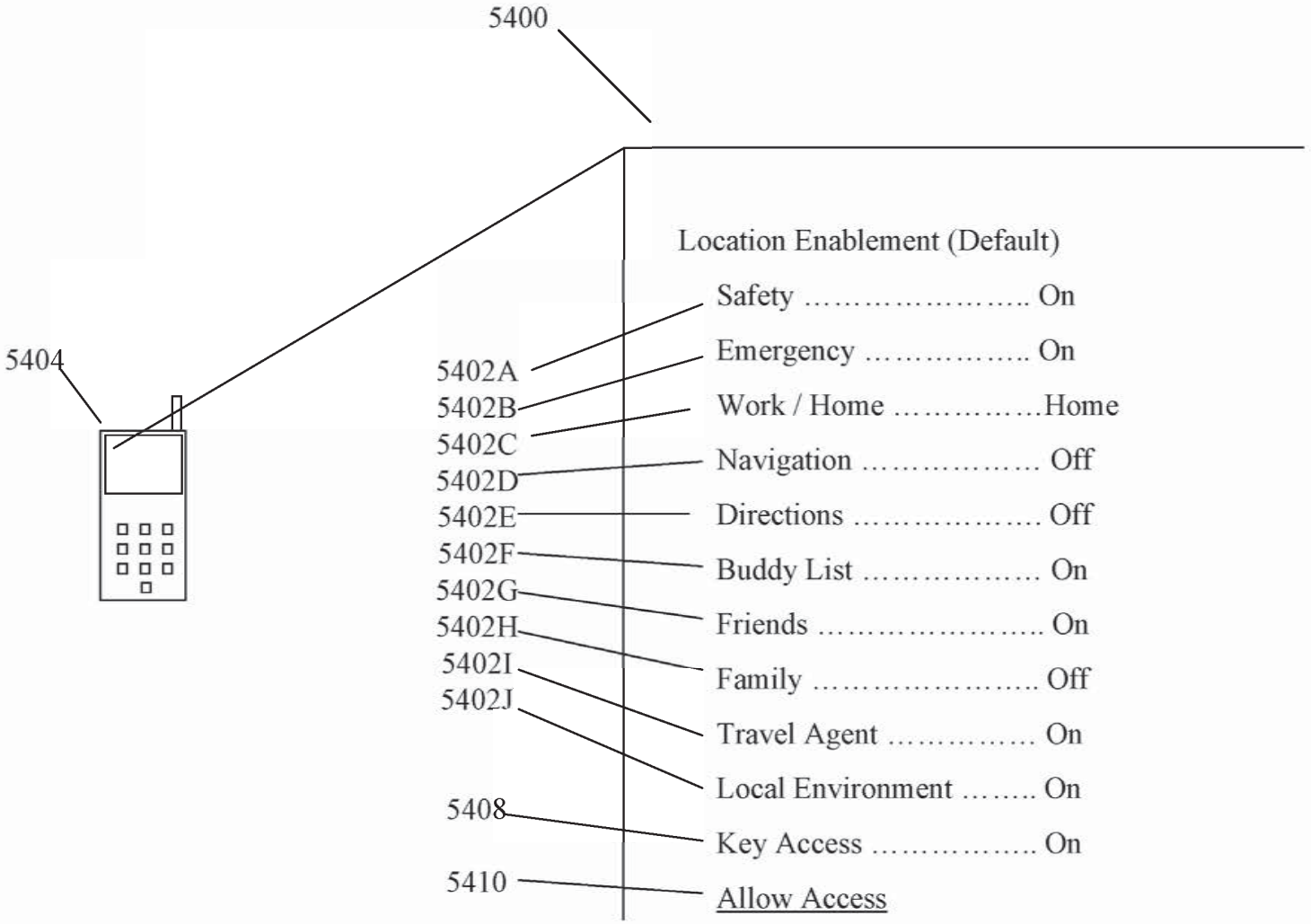

5400
5404
Location Enablement (Default)
5402A
Safety …….. On
5402B
Emergency …….. On
5402C
Work / Home ……Home
5402D
Navigation …….. Off
5402E
Directions …….. Off
5402F
Buddy List …….. On
5402G
Friends …….. On
5402H
Family …….. Off
5402I
Travel Agent …….. On
5402J
Local Environment …….. On
5408
Key Access …….. On
5410
Allow Access

Fig. 54

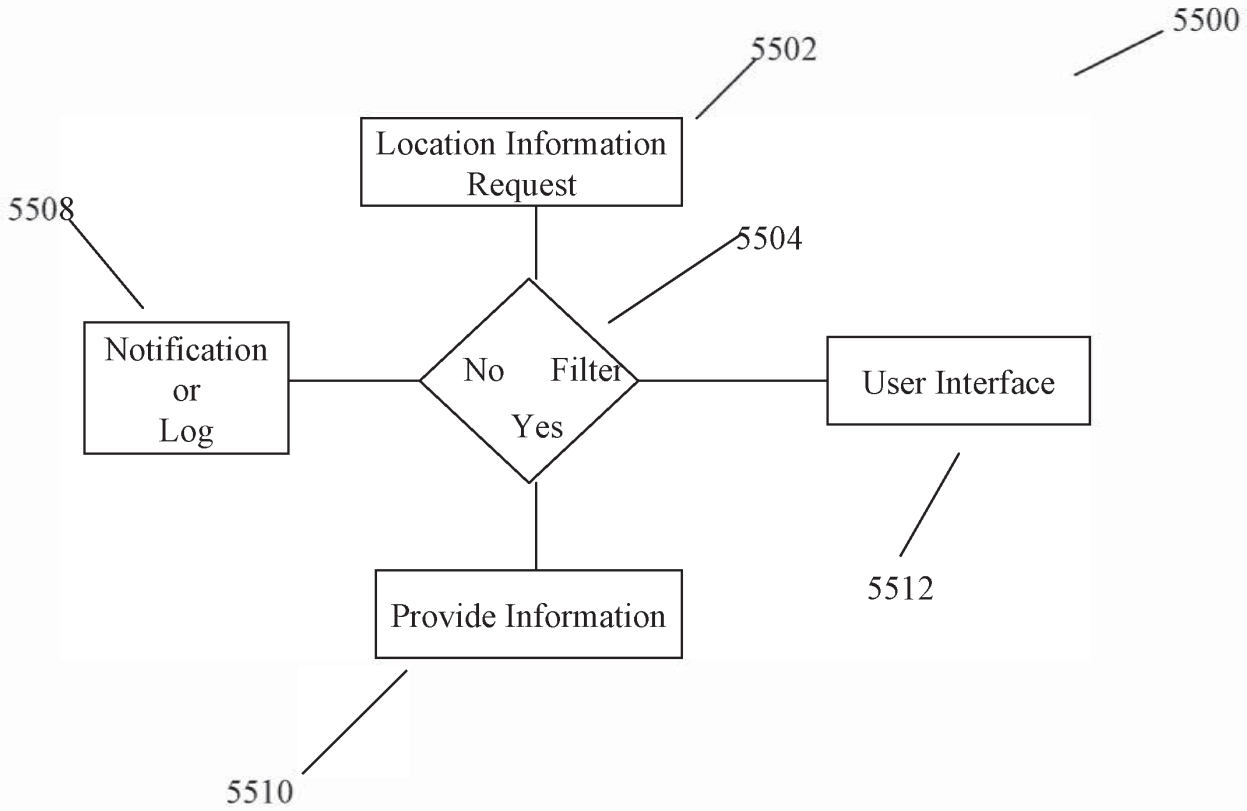

5500
5502
Location Information Request
5508
5504
Notification or Log
No Filter Yes
User Interface
5512
Provide Information
5510

Fig. 55

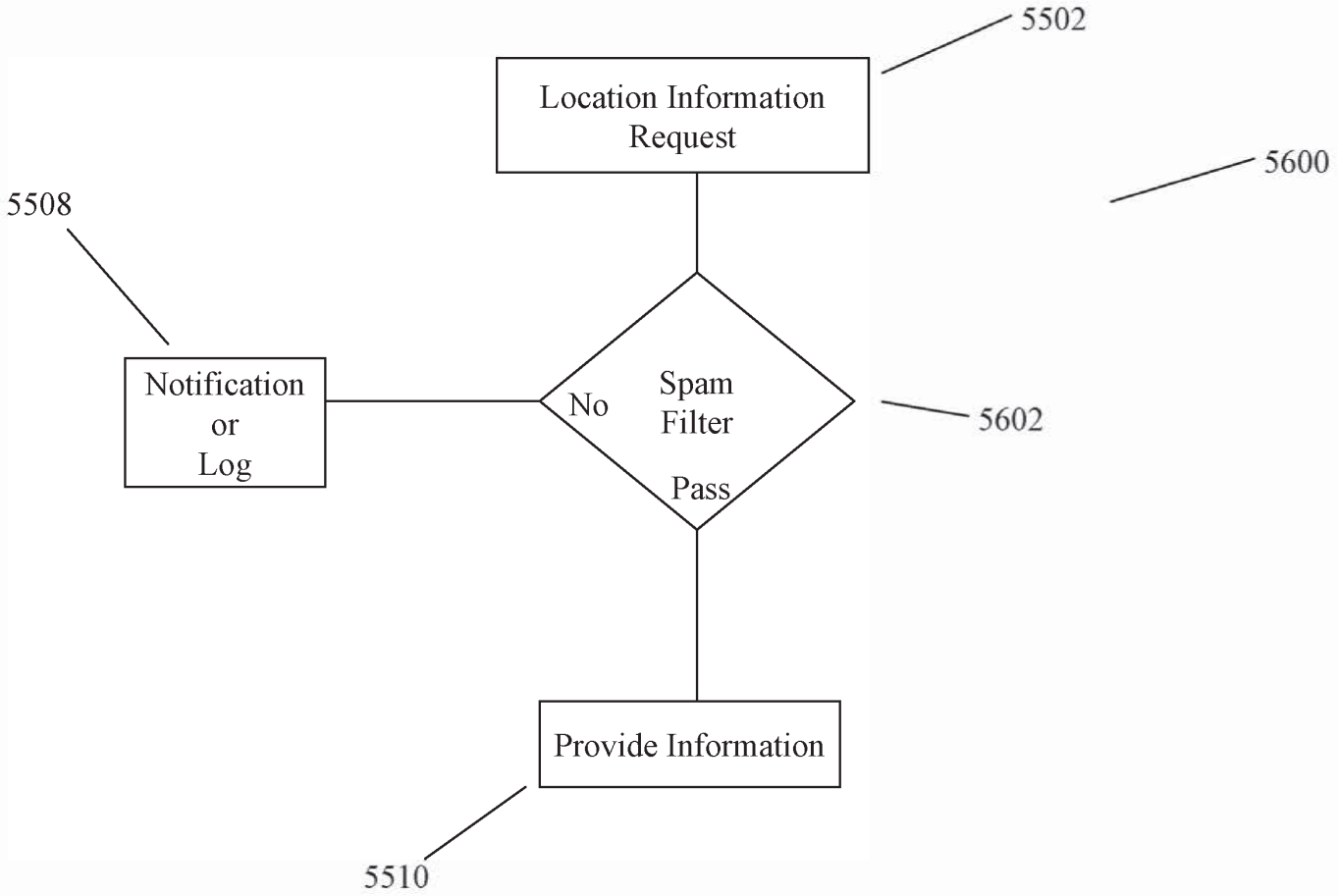

5502
Location Information Request
5600
5508
Notification or Log
No
Spam Filter
5602
Pass
Provide Information
5510

Fig. 56

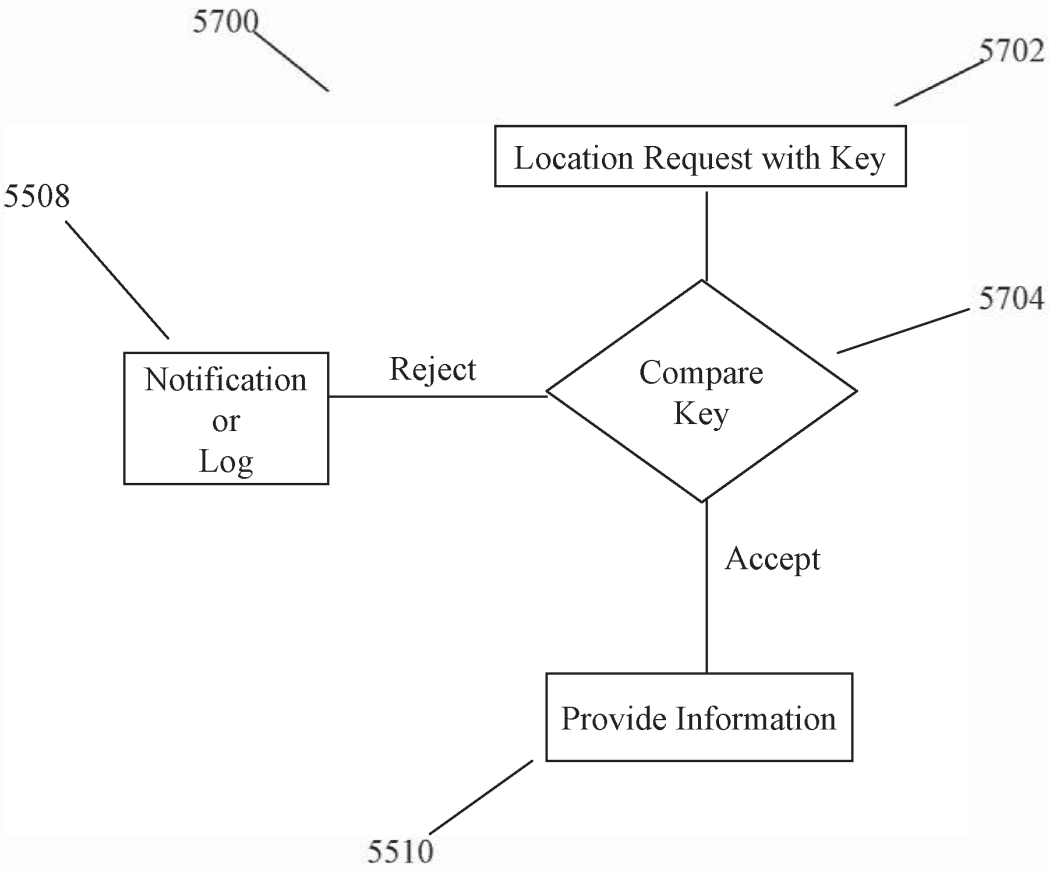

5700
5702
Location Request with Key
5508
5704
Notification or Log
Reject
Compare Key
Accept
Provide Information
5510

Fig. 57

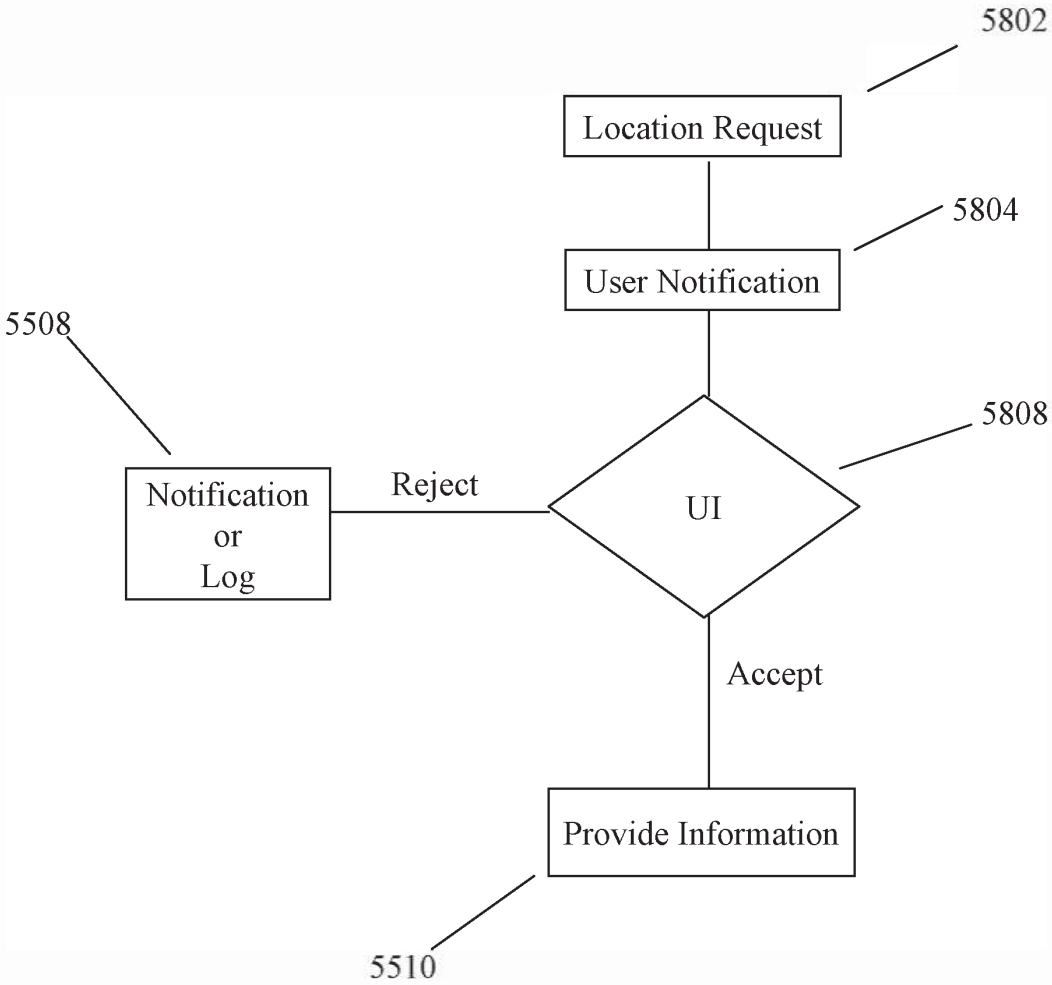

5802
Location Request
5804
User Notification
5508
5808
Notification or Log
Reject
UI
Accept
Provide Information
5510

Fig. 58

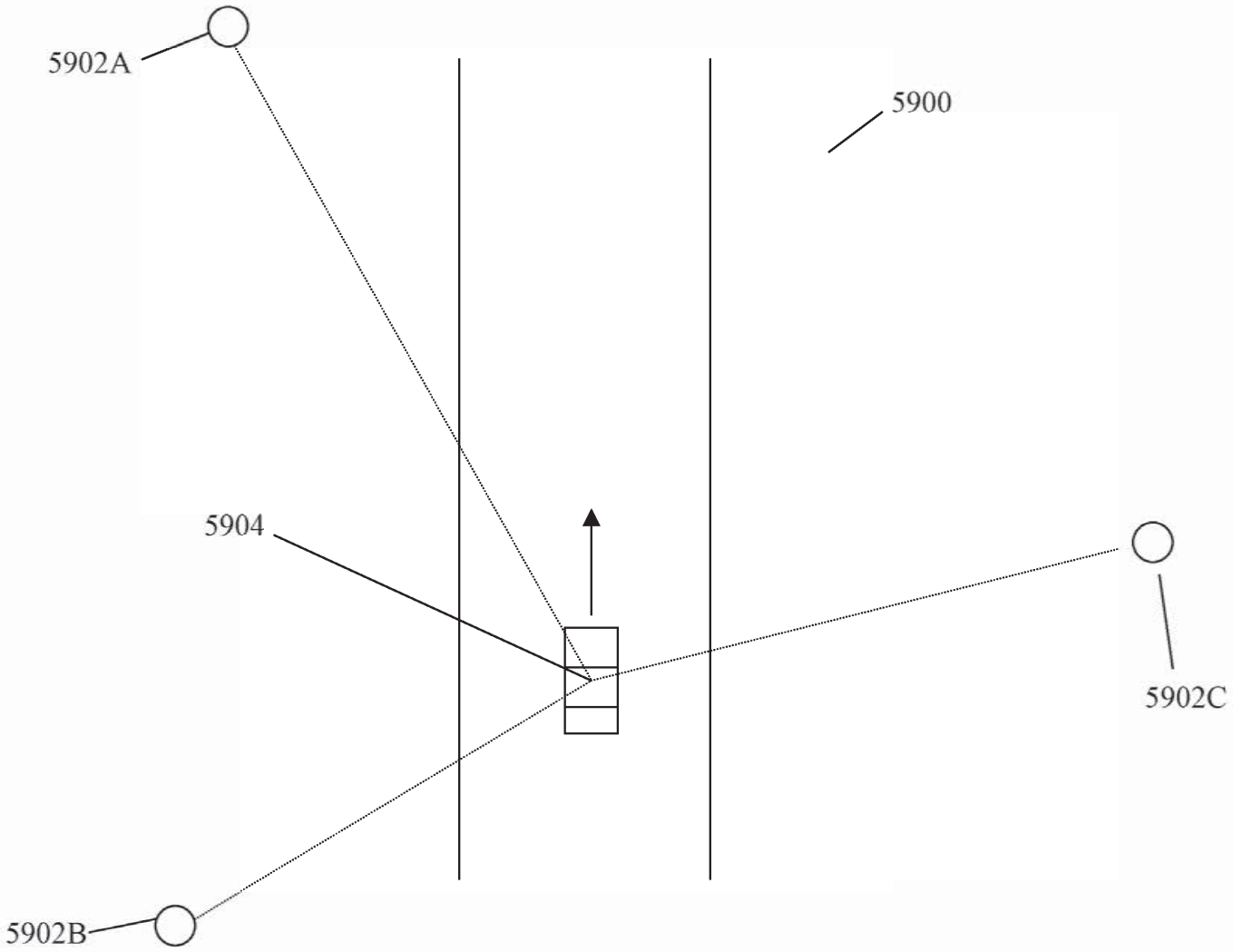


Fig. 59

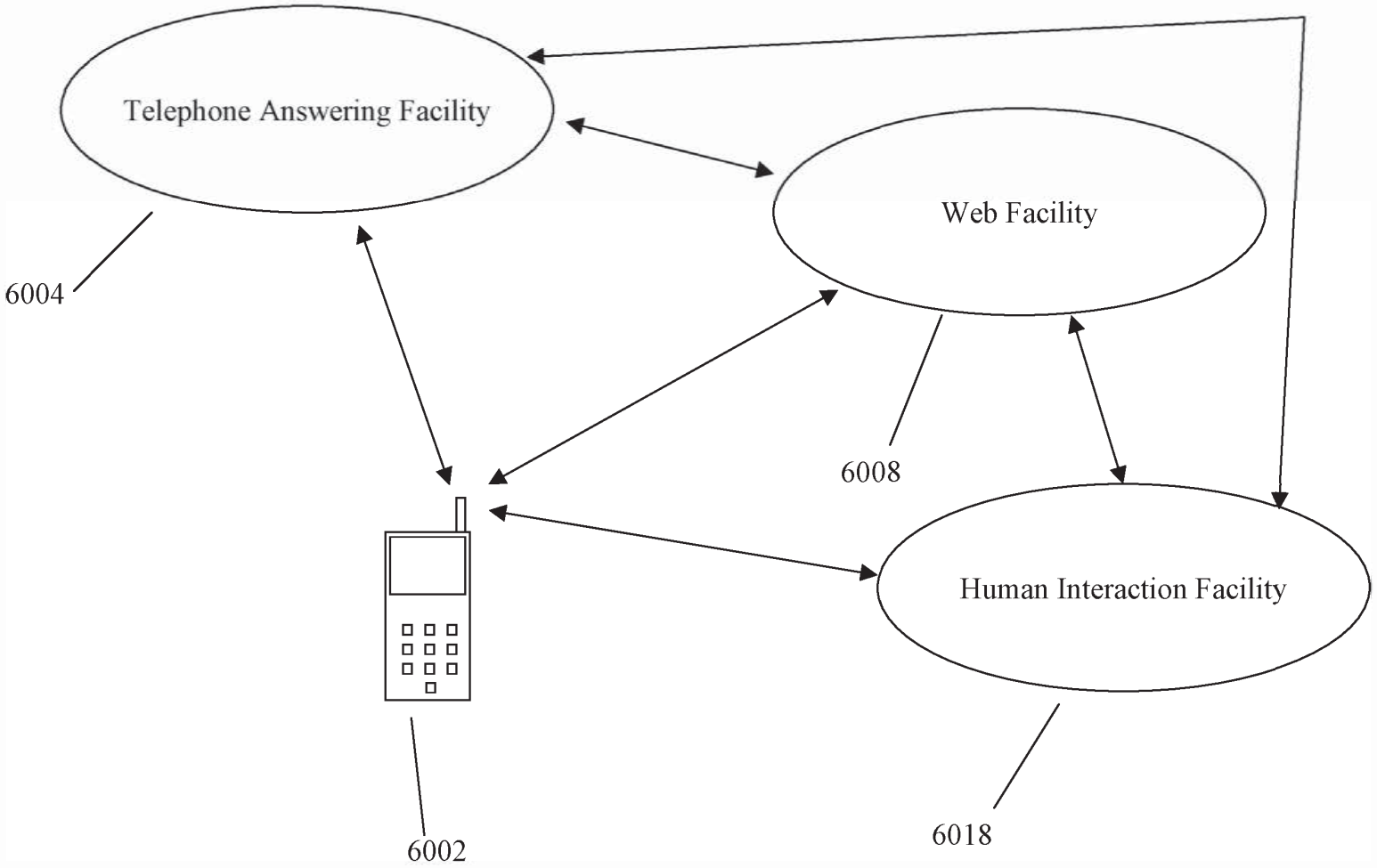

Telephone Answering Facility
Web Facility
6004
6008
Human Interaction Facility
6002
6018

Fig. 60

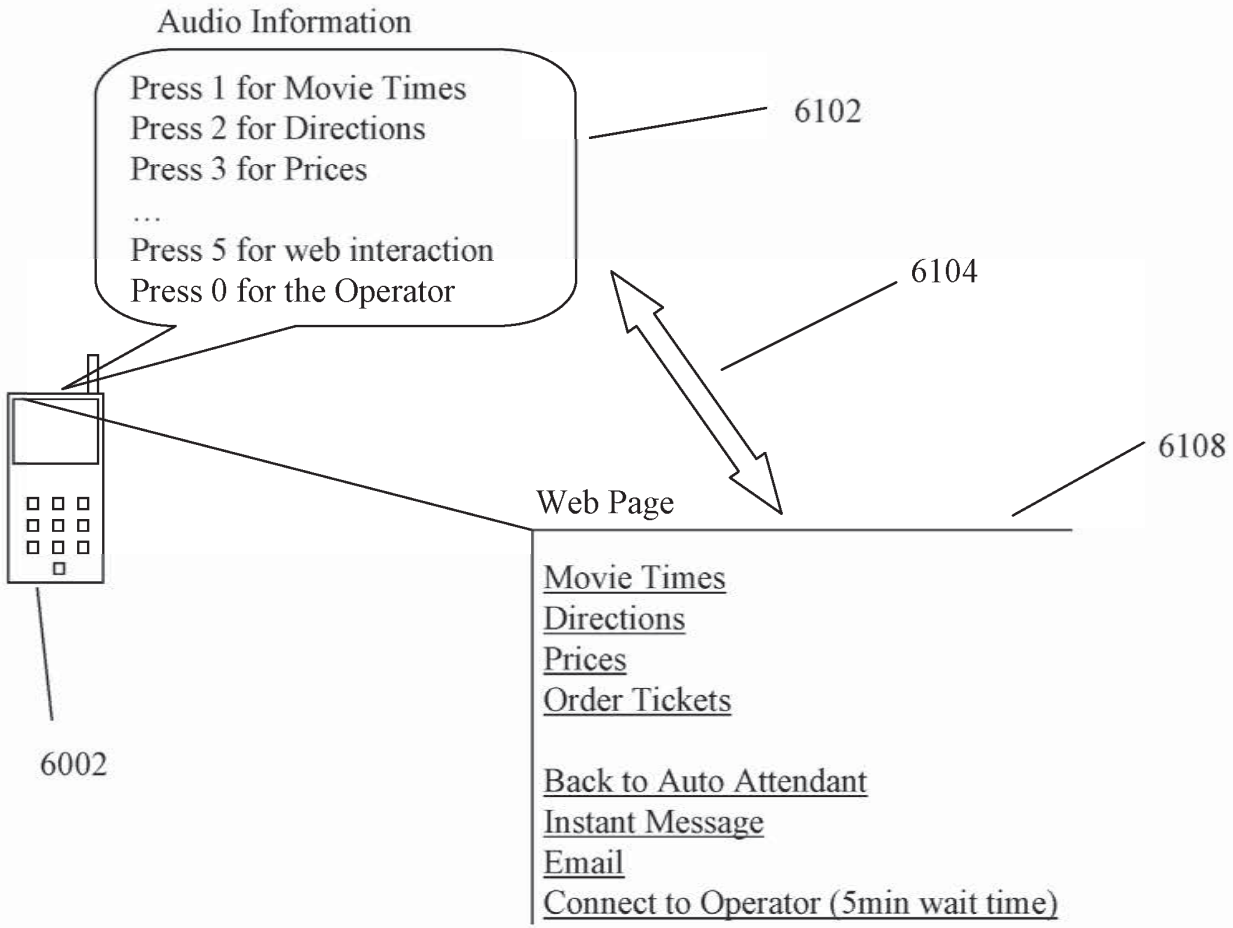

Audio Information
Press 1 for Movie Times
Press 2 for Directions
Press 3 for Prices
…
Press 5 for web interaction
Press 0 for the Operator
6102
6104
6108
Web Page
Movie Times
Directions
Prices
Order Tickets
Back to Auto Attendant
Instant Message
Email
Connect to Operator (5min wait time)
6002

Fig. 61

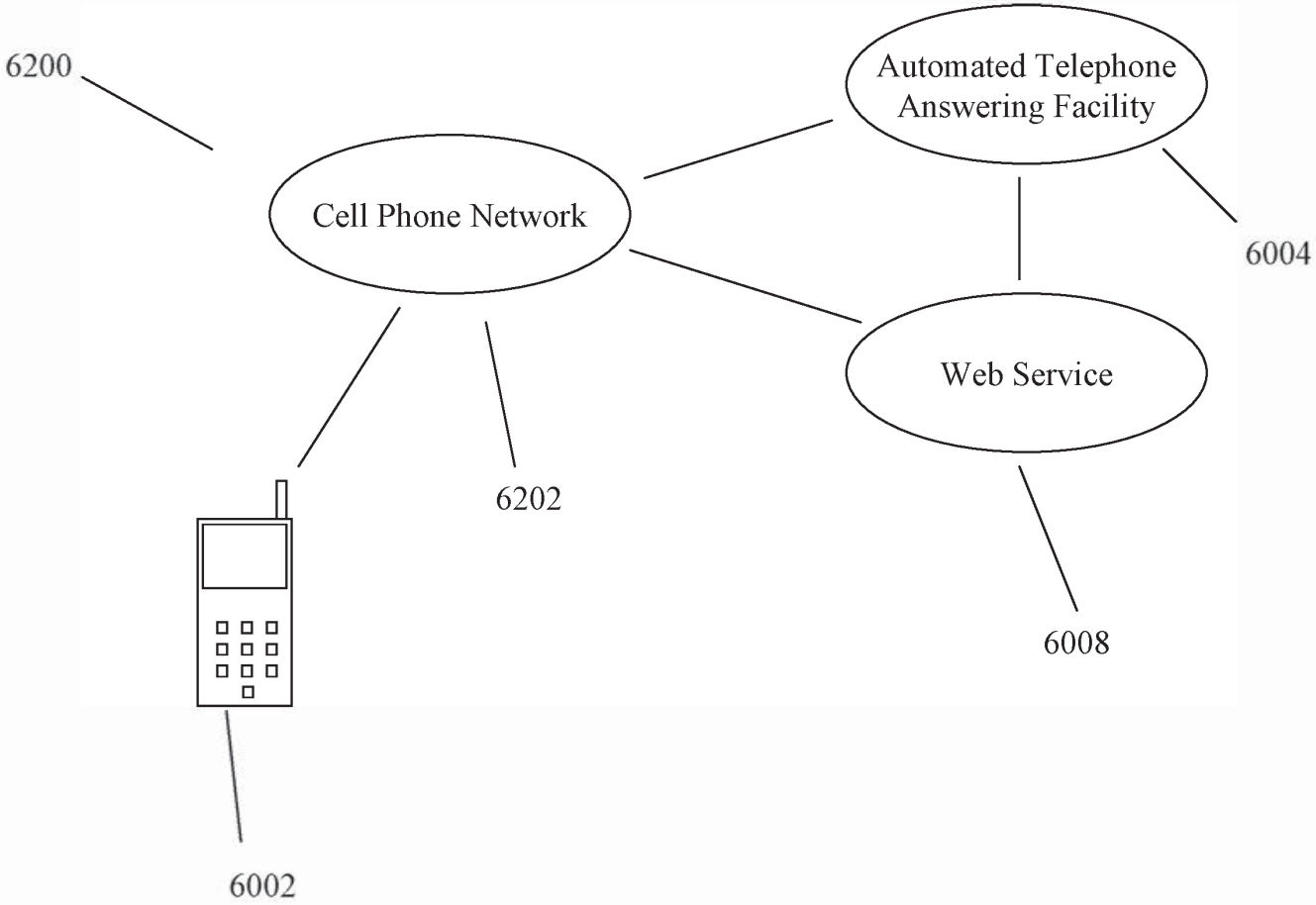

6200
Automated Telephone Answering Facility
Cell Phone Network
6004
Web Service
6202
6008
6002

Fig. 62

A METHOD AND SYSTEM FOR PROVIDING TRAVEL TIME INFORMATION

RELATED APPLICATIONS

[0001] This application is a continuation of U.S. App. No. 14/289,370 filed May 28, 2014, which is a continuation of U.S. App. No. 13/019,869 filed February 2, 2011, which is a continuation of U.S. App. No. 12/391,745 filed February 24, 2009, now U.S. Patent No. 7,904,240, issued March 8, 2011. U.S. Patent No. 7,904,240 is a continuation of U.S. App. No. 11/052,547, filed February 7, 2005, now U.S. Patent No. 7,522,995 issued April 21, 2009. Application 11/052,547 claims the benefit of the following U.S. Provisional Patent Applications: U.S. Prov. App. No. 60/541,990, filed February 5, 2004; U.S. Prov. App. No. 60/578,494, filed June 10, 2004; and U.S. Prov. App. No. 60/617,857, filed October 12, 2004.

[0002] All of the above applications and patents are incorporated herein by reference in their entirety.

BACKGROUND

[0003] 1. Field of the invention

[0004] The present invention relates to systems and methods for locating positions, determining route information and providing information to users. More particularly, in embodiments, systems and methods for mapping positions, predicting traffic patterns, presenting route information, presenting navigation information, presenting information related to locations, and providing intuitive interfaces to a user for retrieving information.

[0005] 2. Description of Related Art

[0006] People and things move throughout the world while interacting with many other people and objects. Methods and systems of tracking and predicting such movements can improve operations. Generally, these systems are poor and do not provide for adequate information for acceptable tracking or predicting.

SUMMARY OF THE INVENTION

[0007] An aspect of the present invention relates to systems and methods for locating people, locating vehicles, locating transmissions, locating objects, providing route information, providing traffic information, providing navigation information, predicting traffic patterns and or providing information to manage travel. Embodiments include methods and systems of providing route information to a user. In embodiments, the information may be provided during travel, prior to travel, following travel, while stationary, or otherwise. An aspect of the invention relates to systems and methods for providing route, navigation, traffic, and or direction information to a traveler. Embodiments include methods and systems of locating a portable or mobile communication facility (e.g. locating a cell phone of a traveler through triangulation, or through gps), determining a destination and providing information relating to a route, including directions. Embodiments of the present invention relate to providing a user with intuitive interfaces to access information.

[0008] A location facility according to the principles of the present invention is a facility used in the determination of the location of a person, mobile communication facility, transmission facility, object, or other facility. For example, a location facility may be a triangulation facility adapted to locate a transmitters location, a triangulation facility adapted to locate a cell phone, a triangulation facility adapted to locate a gps device, a gps facility, a satellite location facility, a triangulation system adapted to locate a vehicle transmitter, an automatic location facility, a manual location facility, a semi-automatic location facility, a web entry facility, a voice activation facility, a mobile facility, a local facility or other facility adapted to locate a person, place or object.

[0009] A route information facility according to the principles of the present invention is a facility adapted to provide route information. In embodiments, the route information facility provides information to a user, another facility traveler, or other person. For example, a route information facility may be a computer facility adapted to calculate travel time estimates, best route suggestions, shortest route suggestions, alternate route suggestions, typical route suggestions, travel conditions, route conditions, directions, navigation or other route information. A route information facility may be adapted to produce and or communicate directions, routes, stepwise directions, complete

directions, in travel directions, destination information, travel information, navigation instructions, or other information related to travel, locations and or destinations. A route information facility may be adapted to communicate through a route information facility user interface. For example, a route information facility user interface may be a mobile communication facility, cell phone interface, portable transmission interface, portable phone interface, pda interface, Black Berry interface, telephone answering system interface (e.g. as described herein below) web interface, computer interface, gps interface, in vehicle interface, web service interface, LCD screen, plasma screen, DVD screen, TV interface, satellite facility, radio, satellite radio, or other interface adapted to receive and or transmit information. In embodiments, a route information facility interaction is performed through a client server relationship.

[0010] A monitoring facility according to the principles of the present invention is a facility used to monitor route performance and or traffic patterns. In an embodiment, the monitoring facility may be manual, automatic or semi-automatic. For example, the monitoring facility may include a person observing traffic patterns, a camera facility, a cell phone location facility, triangulation facility, transmitter facility, gps facility, transponder facility or other facility used to monitor and or transmit information relating to traffic conditions.

[0011] A navigation facility according to the principles of the present invention is a facility that calculates, communicates, and or facilitates navigation information. In embodiments, a navigation facility may be a distributed navigation facility that is accessed through the internet, or other remote connection techniques. In embodiments, the distributed navigation facility may include one or more distributed navigation servers. In embodiments, a user may connect to a navigation facility through the use of a mobile communication facility. In embodiments, the mobile communication facility may connect to the navigation facility through a wireless communication network. In embodiments, the wireless communications network may access the navigation facility through the use of the internet, or other network. In embodiments, the navigation facility communicates with a mobile communication facility and provides the mobile communication facility with navigation information. In embodiments, the

navigation information is provided in real-time or near real-time to provide the user of the mobile communication facility with real-time or near real-time navigation information.

[0012] A mobile communication facility or portable communication facility according to the principles of the present invention is a facility that enables mobile and or portable communication. In embodiments, the communication is data, voice, information or other communication. In embodiments, the mobile or portable communication facility includes a phone, email, text messaging, personal digital assistant functionalities, address book, calendar, task list, and or other facilities to enable mobile or portable communications. For example, a mobile or portable communication facility may be a cell phone, mobile phone, satellite phone, internet phone, network phone, wireless phone, personal digital assistance (pda), combination pda/mobile phone, Palm® system, Blackberry® system, in-vehicle communication facility, in-vehicle navigation facility, in-vehicle information facility, or other mobile or portable communication facility. In embodiments, the mobile communication facility is an in-vehicle communication facility, in-vehicle navigation facility, in-vehicle information facility or other in-vehicle communication facility. In embodiments, the in-vehicle communication facility includes a communication facility adapted for data, voice, and or information communication.

[0013] A telephone answering service facility, telephone answering facility or telephone answering apparatus according to the principles of the present invention is a facility adapted to automatically, semi-automatically, or manually answer and or manage incoming phone calls and is associated, or adapted to be associated, with a residence, corporation, retail establishment, non-for-profit establishment, government establishment, and or other establishment. In embodiments, the telephone answering service facility is adapted to manage internal phone calls, record messages, and or provide menu-driven options to a caller (e.g. through key, digit, or voice interactions). In embodiments, the telephone answering service facility is located within its associated establishment. In embodiments, a telephone answering facility is located remotely from its associated establishment. In embodiments, the telephone answering service is accessed through the internet or other network.

[0014] Embodiments include methods and systems of providing a telephone answering apparatus. The telephone answering apparatus may comprise a

communication facility adapted to transmit a message formatted to be received by another facility as displayed text, and or video. In embodiments, the telephone answering facility is adapted to communicate information formatted as a digital audio file. In embodiments, the other facility is a mobile communication facility. In embodiments, the information relates to the establishment that the telephone answering apparatus is associated with. In embodiments, the telephone answering facility is associated with a route information facility, navigation information facility, traffic information facility or other facility. In embodiments, the telephone answering facility coordinates with one or more other facilities to provide a user information through the use of his mobile communication facility.

[0015] Embodiments include methods and systems of communicating information. The method and systems comprising: providing a telephone answering facility capable of transmitting digital text information; providing a portable telephone capable of receiving and storing digital text information; calling the telephone answering facility and requesting information; delivering the information from the telephone answering facility to the portable telephone; and storing the information on the cell phone in a form that can be viewed.

[0016] Embodiments include methods and systems of communicating information. The method and systems comprising: providing a telephone answering facility capable of transmitting digital video information; providing a portable telephone capable of receiving and storing digital video information; calling the telephone answering facility and requesting information; delivering the information from the telephone answering facility to the portable telephone; and storing the information on the cell phone in a form that can be viewed.

[0017] Embodiments include methods and systems of communicating information. The method and systems comprising: providing a telephone answering facility capable of transmitting a digital audio file; providing a portable telephone capable of receiving and storing digital audio information; calling the telephone answering facility and requesting information; delivering the information from the telephone answering facility to the portable telephone; and storing the information on the cell phone in a form that can be reviewed.

[0018] Embodiments include methods and systems of communicating information. The methods and systems comprising: using portable phone to initiate communication with a call answering facility; causing the call answering facility to transmit information to the portable phone; and storing the information in the cell phone in a format to be viewed at least in part as text.

[0019] Embodiments include methods and systems of communicating information. The methods and systems comprising: providing an advertisement; providing an RFID tag facility; and associating information pertaining to the advertisement with the RFID tag facility.

[0020] Embodiments include methods and systems for providing an advertisement. The methods and systems comprising: a print advertisement; and an RFID tag facility wherein the RFID tag facility includes information pertaining to the print advertisement.

[0021] Embodiments include methods and systems of supplying a navigation facility with destination information. The method may include using a mobile communication facility to call a telephone answering facility; wherein the telephone answering facility is associated with a desired destination; and causing the telephone answering facility to communicate the desired destination to the navigation facility.

[0022] Embodiments include methods and systems of determining a route. The method may include using a mobile communication facility to call a telephone answering facility; wherein the telephone answering facility is associated with a desired destination; causing the telephone answering facility to communicate the desired destination to the navigation facility; determining a location of the mobile communication facility; and calculating a route based on the desired destination and the location of the mobile communication facility.

[0023] Embodiments include methods and systems of providing navigation to a mobile communication facility. The method may include using a mobile communication facility to call a telephone answering facility; wherein the telephone answering facility is associated with a desired destination; causing the telephone answering facility to communicate the desired destination to the navigation facility;

determining a location of the mobile communication facility; and communicating navigation information to the mobile communication facility.

[0024] Embodiments include methods and systems of supplying a navigation facility with destination information. The method may include using a mobile communication facility to access destination information through the internet; and communicating the destination information to the navigation facility. Embodiments may include information obtained through at least one of a webpage, restaurant guide, business guide, advertisement, search engine, news site, corporate site, retail site, and restaurant site.

[0025] Embodiments include methods and systems of communicating information to a mobile communication facility. The method may include combining at least one of route information and navigation information with at least one of store information, residential information, corporate information, local information, a logo, a trademark, a service mark, sale information, inventory information, local directions, personal information, information based on the mobile communication facility's phone number, information based on a personal identification number, and information based on a user's identity; and communicating the combined information to the mobile communication facility.

[0026] Embodiments include methods and systems of assessing traffic. The method may include providing a mobile communication facility with a user interface to assess traffic; interacting with the user interface to communicate a request to a traffic management facility; determining the location of the mobile communication facility; determining the traffic patterns in relation to at least one of the location of the mobile communication facility and the pre-loaded route of the mobile communication facility; and communicating the traffic pattern information to the mobile communication facility.

[0027] Embodiments include methods and systems of alerting a user of traffic patterns. The method may include preloading a destination; determining a route associated with the destination; preloading an estimated time to travel to the destination; assessing traffic patterns associated with the route prior to the estimated travel time; and communicating an alert to a user.

[0028] Embodiments include methods and systems of presenting route information to a user. The method may include loading at least one of a destination and a route into a mobile communication facility; provide a user interface on the mobile communication facility to access the at least one of a destination and a route; and providing the user with at least one of route, traffic, alternate route, direction, and navigation information upon interaction with the user interface.

[0029] Embodiments include methods and systems of determining traffic patterns. The methods and systems may include collecting a plurality of cell phone locations; and mapping the locations of the cell phone locations. In embodiments, the step of mapping the locations comprises mapping the locations on a traffic map. In embodiments, the method further comprises generating an estimated travel time. In embodiments, the estimated travel time is generated in real time.

[0030] Embodiments include methods and systems of determining travel time. In embodiments, the methods and systems may involve estimating the travel time on a road portion through a plurality of cell phone locations.

[0031] Embodiments include methods and systems of determining travel time. In embodiments, the methods and systems may involve estimating the travel time on a road portion through by determining the speed of at least one cell phone on the road portion. In embodiments, the speed of the at least one cell phone comprises the steps of: requesting the at least one cell phone to generate a first transmission signal; determining a first location of the at least one cell phone based at least in part on the first transmission signal; requesting the at least one cell phone to generate a second transmission signal; determining a second location of the at least one cell phone based at least in part on the second transmission signal; and determining the speed of the at least one cell phone based at least in part on the first and the second location. In embodiments, the step of requesting the at least one cell phone to generate a first transmission signal further comprises requesting a plurality of cell phones to generate respective transmissions.

[0032] Embodiments include methods and systems of warning a driver of a travel condition. In embodiments, the methods and systems may involve estimating travel conditions on a travel path through a real time tracking facility; and warning of the travel conditions. In embodiments, the travel conditions are estimated in real time. In

embodiments, the travel conditions include at least one of traffic jam, traffic speed reduction, traffic stoppage, construction conditions, and an accident. In embodiments, the travel conditions are estimated periodically. In embodiments, the travel conditions include at least one of traffic jam, traffic speed reduction, traffic stoppage, construction conditions, and an accident. In embodiments, the travel conditions are abnormal conditions. In embodiments, the warning is an audible warning inside a vehicle. In embodiments, the warning is a visual warning inside a vehicle.

[0033] Embodiments include methods and systems of determining a travel path. In embodiments, the methods and systems may involve providing a travel map through a web service; selecting a start travel point; selecting an end travel point; and generating a suggested travel path based on the lowest estimated travel time wherein the estimated travel time is generated at least in part through measured traffic patterns. In embodiments, the measured traffic patterns are typical traffic patterns for a predetermined period of time. In embodiments, the predetermined period of time comprises a day and time of the day. In embodiments, the day comprises a holiday. In embodiments, the day comprises a weekday. In embodiments, the day comprises a weekend day. In embodiments, the measured traffic patterns are real time traffic patterns. In embodiments, the step of generating the suggested travel path is completed before travel on the path is started. In embodiments, the step of generating the suggested travel path is completed while a user is traveling on the path.

[0034] Embodiments include methods and systems of predicting route travel time. In embodiments, the methods and systems may involve presenting route information to a user wherein the route information comprises a prediction of travel time based at least in part on previous route information associated with the route gathered at an earlier time; wherein the route information is provided in combination with a map based at least in part on the user's predetermined destination. In embodiments, the map is provided through a networked computing facility. In embodiments, the networked computing facility comprises a client server facility. In embodiments, the user interacts with the client computing facility to obtain at least one of the map information, the route information, traffic information, and route condition information. In embodiments, the map is provided through the user's mobile communication facility. In embodiments, the

route information is provided through the user's mobile communication facility. In embodiments, the user loaded the predetermined destination through the user's mobile communication facility. In embodiments, the user loaded the predetermined destination through a computing facility. In embodiments, the travel time prediction comprises typical travel time based at least in part on at least one of a time of year, time of day, type of day, holiday information, weekend information, construction information, school vacation information, and accident information. In embodiments, the travel time prediction comprises typical travel time based at least in part on the combination of one or more of a time of year, time of day, type of day, holiday information, weekend information, construction information, school vacation information, and accident information. In embodiments, the travel time prediction comprises real-time travel estimates based at least in part on the combination of one or more of a time of year, time of day, type of day, holiday information, weekend information, construction information, school vacation information, and accident information. In embodiments, the travel time prediction comprises real-time travel estimates based at least in part on at least one of a time of year, time of day, type of day, holiday information, weekend information, construction information, school vacation information, and accident information. In embodiments, the method further comprises suggestion of at least one route based at least in part on the previous route information. In embodiments, the method further comprises suggestion of at least one alternate route based at least in part on the previous route information.

[0035] Embodiments include methods and systems of predicting route travel time. In embodiments, the methods and systems may involve presenting route information to a user wherein the route information comprises a prediction of travel time based at least in part on previous route information associated with the route gathered at an earlier time; wherein the route information is provided to the user through the user's mobile communication facility; and the route information is based at least in part on the user's predetermined destination. In embodiments, the user supplied the destination through a networked computing facility. In embodiments, the user supplied the destination through a mobile communication facility. In embodiments, the mobile

communication facility comprises at least one of a cell phone, satellite phone, pda, in-vehicle navigation system, and in-vehicle communication facility.

[0036] Embodiments include methods and systems of predicting route travel time. In embodiments, the methods and systems may involve presenting route information to a user wherein the route information comprises a prediction of travel time based at least in part on previous route information associated with the route gathered at an earlier time; wherein the route information is provided to the user through the user's mobile communication facility; and the route information is based at least in part on the user's location. In embodiments, the user's location is determined by assessing the location of the user's mobile communication facility. In embodiments, the assessment of the mobile communication facility is accomplished through transmission triangulation. In embodiments, the assessment of the mobile communication facility is accomplished through a gps facility.

[0037] Embodiments include methods and systems of providing route information. In embodiments, the methods and systems may involve assessing a location of a user; gathering route information relative to the user's location; providing the route information to the user. In embodiments, the route information is provided through a mobile communication facility. In embodiments, the mobile communication facility is an in-vehicle communication facility. In embodiments, the mobile communication facility is a mobile phone. In embodiments, the mobile communication facility is a pda. In embodiments, the mobile communication facility is a combination pda mobile phone. In embodiments, the step of assessing the location of the user is accomplished through cell phone triangulation. In embodiments, the step of assessing the location of the user is accomplished through a gps facility. In embodiments, the step of gathering the route information further comprises predicting the route the user is traveling and gathering route information associated with the predicted route. In embodiments, the prediction of the route is determined at least in part based on the location of the user and the route the user is currently traveling. In embodiments, the prediction of the route is further at least in part based on the assumption the user will continue on a roadway the user is currently traveling. In embodiments, the prediction of the route is further at least in part based on a typical route followed from the user's current location. In embodiments, the step of

gathering the route information further comprises the user supplying information to assess the user's desired route and gathering route information associated with the desired route. In embodiments, the steps of assessing a location, gathering route information, and providing the route information are automated and are accomplished without human interaction. In embodiments, the steps of assessing a location, gathering route information, and providing the route information are semi-automated and are accomplished with limited human interaction. In embodiments, the method further comprises the step of initiating a route information request. In embodiments, the user initiates the route information request. In embodiments, the user initiates the route information request through a mobile communication facility. In embodiments, the route information request is initiated through a one click user interface. In embodiments, the route information request is initiated through a menu selection.

[0038] Embodiments include methods and systems of assessing traffic patterns. In embodiments, the methods and systems may involve assessing at least one of the density, speed, and velocity of mobile communication facilities in an area; and

[0039] mapping the density onto a street map. In embodiments, the method further comprises the step of initiating a route information request. In embodiments, the user initiates the route information request. In embodiments, the user initiates the route information request through a mobile communication facility. In embodiments, the route information request is initiated through a one click user interface. In embodiments, the route information request is initiated through a menu selection. In embodiments, the method further comprises the step of communicating route information to a user. In embodiments, the area includes the user's location. In embodiments, the user's location is determined through the location of the user's mobile communication facility. In embodiments, the route information communicated to the user further comprises route information relating to the user's route. In embodiments, the user's route is predetermined. In embodiments, the user's route is predicted.

[0040] Embodiments include methods and systems of presenting vehicle traffic information to a user. In embodiments, the methods and systems may involve assessing the location of a user's mobile communication facility; predicting the desired route of the user based at least in part on the location and the locations relative position to

a roadway; assessing traffic conditions relative to the route; and presenting traffic information to the user through the mobile communication facility. In embodiments, the method further comprises the step of: initiating the method through a single click of a user interface associated with the mobile communication facility.

[0041] Embodiments include methods and systems of presenting route performance information. In embodiments, the methods and systems may involve assessing performance of a route over a period of time; predicting future performance of the route based at least in part on the assessed performance; and presenting the predicted performance of the route to a user through a web enabled computing facility. In embodiments, the step of predicting future performance of the route is further based on at least an assessment of a time of estimated travel. In embodiments, the time comprises at least one of a day of the week, day of the year, hour of the day, and holiday schedule. In embodiments, the step future performance of the route is further based on at least an assessment of events associated with the route. In embodiments, the events comprise at least one of construction, roadway construction, an accident, and weather. In embodiments, the web enabled computing facility comprises a mobile communication facility. In embodiments, the web enabled computing facility comprises at least one of a desktop, and laptop computing facility. In embodiments, the step of presenting the predicted performance of the route further comprises presenting predicted performance of the route based at least one estimated time of initiating travel on the route. In embodiments, the at least one estimated time of initiating travel on the route comprises a plurality of estimated times of initiating travel on the route. In embodiments, the presentation includes presenting a graph of predicted performance comparing the estimated times of initiating traveling the route and the predicted route performance. In embodiments, the predicted route performance comprises route travel time estimations.

[0042] Embodiments include methods and systems of alerting a traveler of route conditions. In embodiments, the methods and systems may involve determining a route to be traveled by a traveler; assessing route performance in relation to the route;

[0043] detecting at least one unusual route condition in the route performance; and communicating information relating to the unusual route condition to the user through the user's mobile communication facility.

[0044] Embodiments include methods and systems of providing information through an automated phone answering system. In embodiments, the methods and systems may involve receiving a phone call from a mobile communication facility; and

[0045] providing information through a data stream formatted to be received and stored in memory of the mobile communication facility. In embodiments, the information comprises at least one of directions, store information or other information. In embodiments, the information relates to an establishment associated with the automated phone answering system. In embodiments, the establishment is at least one of a store; business; and residence. In embodiments, the data stream comprises video, text message, email, graphics, and audio data. In embodiments, the mobile communication facility is at least one of a cell phone, pda, combination pda phone or other mobile communication facility. In embodiments, the method further comprises the step of receiving user input from the mobile communication facility indicating the user's selection from a menu provided by the automated phone answering system and providing the information in response to the user's selection.

[0046] Embodiments include methods and systems of providing a telephone answering apparatus. In embodiments, the methods and systems may involve providing a communication facility adapted to transmit a message formatted to be received by another facility as displayed text. In embodiments, the communication facility is adapted to transmit the message in response to a remote inquiry. In embodiments, the communication facility is adapted to automatically transmit the message. In embodiments, the communication facility is adapted to transmit the message following the receipt of an access code. In embodiments, the message is formatted as at least one of a text message, email message, short message, and simple message. In embodiments, the message contains information pertaining to a location. In embodiments, the location is at least one of a store, office, and residence. In embodiments, the message contains information pertaining to directions to a location. In embodiments, the directions comprise directions from a caller's location. In embodiments, the directions are based on typical route conditions. In embodiments, the directions are based on real-time route conditions. In embodiments, the message contains information pertaining to store hours. In embodiments, the message contains coupon information. In embodiments, the

message contains sale information. In embodiments, phone answering apparatus of claim 1 wherein the message contains store information.

[0047] Embodiments include methods and systems of communicating information. In embodiments, the methods and systems may involve providing a telephone answering facility capable of transmitting digital text information; providing a portable telephone capable of receiving and storing digital text information; calling the telephone answering facility and requesting information; delivering the information from the telephone answering facility to the portable telephone; and storing the information on the cell phone in a form that can be viewed.

[0048] Embodiments include methods and systems of communicating information. In embodiments, the methods and systems may involve using portable phone to initiate communication with a call answering facility; causing the call answering facility to transmit information to the portable phone; and storing the information in the cell phone in a format to be viewed at least in part as text. In embodiments, the step of storing in the cell phone further comprises: storing the information in cell phone memory; associating the stored information with an address book; storing the information as a text message; and storing the information for later retrieval. In embodiments, the information comprises at least one of an address, directions, operational hours, phone number, sale information, coupon information, and inventory information. In embodiments, the call answering facility comprises at least one of an in-store auto-answering facility, a residential answering facility, and office answering facility, and a remote answering facility. In embodiments, the remote answering facility is accessed through at least one of a code and a phone number. In embodiments, the systems ad methods may further comprises the steps of: retrieving the information from the cell phone and obtaining directions from the information. In embodiments, the directions are generic directions. In embodiments, the directions are based on the location of the cell phone. In embodiments, the directions are updated from time to time based on the cell phone location. In embodiments, the directions are provided in the form of at least one of a text message, email, and short message. In embodiments, the directions are provided by a remote route information facility. In embodiments, the directions are based on real time driving conditions. In embodiments, the directions are based on typical driving

conditions. In embodiments, the directions are based on quickest time. In embodiments, the directions are based on shortest distance.

[0049] Embodiments include methods and systems of communicating information. In embodiments, the methods and systems may involve providing an advertisement; providing an RFID tag facility; and associating information pertaining to the advertisement with the RFID tag facility. In embodiments, the advertisement is at least one of a newspaper ad, magazine ad, phone book ad, flyer ad, and a paper ad. In embodiments, the information relates to at least one of sale information, coupon information, direction information, address information, and a phone number. In embodiments, the methods and systems may further comprising the steps of: reading the information from the RFID tag facility; and storing the information in memory. In embodiments, the memory resides in at least one of a cell phone, portable communication facility, desktop computing facility, PDA, communication facility.

[0050] Embodiments include methods and systems of providing an advertisement. In embodiments, the methods and systems may involve a print advertisement; and an RFID tag facility wherein the RFID tag facility includes information pertaining to the print advertisement. In embodiments, the information relates to at least one of a web address, web information, and an email address. In embodiments, the information relates to at least one of sale information, coupon information, direction information, address information, and a phone number.

[0051] Embodiments include methods and systems of providing a telephone answering apparatus. In embodiments, the methods and systems may involve a receiving facility adapted to receive a phone call; and a communication facility adapted to transmit a message formatted to be received by another facility as displayed text. In embodiments, the communication facility is adapted to transmit the message in response to a remote inquiry. In embodiments, the communication facility is adapted to automatically transmit the message. In embodiments, the communication facility is adapted to transmit the message following the receipt of an access code. In embodiments, the message is formatted as at least one of a text message, email message, short message, and simple message. In embodiments, the message contains information pertaining to a location. In embodiments, the location is at least one of a store, office,

and residence. In embodiments, the message contains information pertaining to directions to a location. In embodiments, the directions comprise directions from a caller's location. In embodiments, the directions are based on typical route conditions. In embodiments, the directions are based on real-time route conditions. In embodiments, the message contains information pertaining to store hours. In embodiments, the message contains coupon information. In embodiments, the message contains sale information. In embodiments, the message contains store information.

[0052] Embodiments include methods and systems of communicating information. In embodiments, the methods and systems may involve providing a telephone answering facility capable of transmitting digital text information; providing a portable telephone capable of receiving and storing digital text information; calling the telephone answering facility and requesting information; delivering the information from the telephone answering facility to the portable telephone; and storing the information on the cell phone in a form that can be viewed.

[0053] Embodiments include methods and systems of communicating information. In embodiments, the methods and systems may involve using portable phone to initiate communication with a call answering facility; causing the call answering facility to transmit information to the portable phone; and storing the information in the cell phone in a format to be viewed at least in part as text. In embodiments, the step of storing in the cell phone further comprises: storing the information in cell phone memory; associating the stored information with an address book; storing the information as a text message; and storing the information for later retrieval. In embodiments, the information comprises at least one of an address, directions, operational hours, phone number, sale information, coupon information, and inventory information. In embodiments, the call answering facility comprises at least one of an in-store auto-answering facility, a residential answering facility, and office answering facility, and a remote answering facility. In embodiments, the remote answering facility is accessed through at least one of a code and a phone number. In embodiments, methods and systems may further comprise the steps of: retrieving the information from the cell phone and obtaining directions from the information. In embodiments, the directions are generic directions. In embodiments, the directions are based on the location of the cell phone. In

embodiments, the directions are updated from time to time based on the cell phone location. In embodiments, the directions are provided in the form of at least one of a text message, email, and short message. In embodiments, the directions are provided by a remote route information facility. In embodiments, the directions are based on real time driving conditions. In embodiments, the directions are based on typical driving conditions. In embodiments, the directions are based on quickest time. In embodiments, the directions are based on shortest distance.

[0054] Embodiments include methods and systems of communicating information. In embodiments, the methods and systems may involve providing an advertisement; providing an RFID tag facility; and associating information pertaining to the advertisement with the RFID tag facility. In embodiments, the advertisement is at least one of a newspaper ad, magazine ad, phone book ad, flyer ad, and a paper ad. In embodiments, the information relates to at least one of sale information, coupon information, direction information, address information, and a phone number. In embodiments, the methods and systems may further comprise the steps of: reading the information from the RFID tag facility; and storing the information in memory. In embodiments, the memory resides in at least one of a cell phone, portable communication facility, desktop computing facility, PDA, communication facility.

[0055] Embodiments include methods and systems of providing an advertisement. In embodiments, the methods and systems may involve a print advertisement; and an RFID tag facility wherein the RFID tag facility includes information pertaining to the print advertisement. In embodiments, the information relates to at least one of a web address, web information, and an email address. In embodiments, the information relates to at least one of sale information, coupon information, direction information, address information, and a phone number.

[0056] Embodiments include methods and systems of method of supplying a navigation facility with destination information. In embodiments, the methods and systems may involve using a mobile communication facility to call a telephone answering facility; wherein the telephone answering facility is associated with a desired destination; and causing the telephone answering facility to communicate the desired destination to the navigation facility.

[0057] Embodiments include methods and systems of method of determining a route. In embodiments, the methods and systems may involve using a mobile communication facility to call a telephone answering facility; wherein the telephone answering facility is associated with a desired destination; causing the telephone answering facility to communicate the desired destination to the navigation facility; determining a location of the mobile communication facility; and calculating a route based on the desired destination and the location of the mobile communication facility.

[0058] Embodiments include methods and systems of providing navigation to a mobile communication facility. In embodiments, the methods and systems may involve using a mobile communication facility to call a telephone answering facility; wherein the telephone answering facility is associated with a desired destination; causing the telephone answering facility to communicate the desired destination to the navigation facility; determining a location of the mobile communication facility; and communicating navigation information to the mobile communication facility.

[0059] Embodiments include methods and systems of method of supplying a navigation facility with destination information. In embodiments, the methods and systems may involve using a mobile communication facility to access destination information through the internet; and communicating the destination information to the navigation facility. In embodiments, the information is obtained through at least one of a webpage, restaurant guide, business guide, advertisement, search engine, news site, corporate site, retail site, and restaurant site.

[0060] Embodiments include methods and systems of method of communicating information to a mobile communication facility. In embodiments, the methods and systems may involve combining at least one of route information and navigation information with at least one of store information, residential information, corporate information, local information, a logo, a trademark, a service mark, sale information, inventory information, local directions, personal information, information based on the mobile communication facility's phone number, information based on a personal identification number, and information based on a user's identity; and communicating the combined information to the mobile communication facility.

[0061] Embodiments include methods and systems of method of assessing traffic. In embodiments, the methods and systems may involve providing a mobile communication facility with a user interface to assess traffic; interacting with the user interface to communicate a request to a traffic management facility; determining the location of the mobile communication facility; determining the traffic patterns in relation to at least one of the location of the mobile communication facility and the pre-loaded route of the mobile communication facility; and communicating the traffic pattern information to the mobile communication facility.

[0062] Embodiments include methods and systems of method of alerting a user of traffic patterns. In embodiments, the methods and systems may involve preloading a destination; determining a route associated with the destination; preloading an estimated time to travel to the destination; assessing traffic patterns associated with the route prior to the estimated travel time; and

[0063] communicating an alert to a user.

[0064] Embodiments include methods and systems of method of presenting route information to a user. In embodiments, the methods and systems may involve loading at least one of a destination and a route into a mobile communication facility;

[0065] provide a user interface on the mobile communication facility to access the at least one of a destination and a route; and

[0066] providing the user with at least one of route, traffic, alternate route, direction, and navigation information upon interaction with the user interface.

[0067] Embodiments include methods and systems of method of presenting information from an automated telephone answering facility. In embodiments, the methods and systems may involve receiving a phone call from a mobile communication facility; presenting an option menu in audio format; receiving a user selection from the option menu; and redirecting the communication with the mobile communication facility to a web facility. In embodiments, the methods and systems may further comprise the step of presenting an option through the web facility to redirect the communication back to the telephone answering facility. In embodiments, the methods and systems may further comprises the step of presenting an option through the web facility to redirect the communication to a human interaction facility.

[0068] Embodiments include methods and systems of method of communicating with an in-vehicle computing facility. In embodiments, the methods and systems may involve transmitting information from a portable phone to an in-vehicle computing facility. In embodiments, the in-vehicle communication facility is a navigation facility.

[0069] Embodiments include methods and systems of method of communicating navigation information. In embodiments, the methods and systems may involve receiving a call at a telephone answering facility; presenting a menu of options to the caller; receiving a menu selection from the caller indicating the desire to receive navigation information; and transferring the call to a navigation facility. In embodiments, the navigation facility comprises a distributed navigation facility.

[0070] Embodiments include methods and systems of method of communicating a destination to a navigation facility. In embodiments, the methods and systems may involve connecting a mobile communication facility to an internet facility; presenting information from the internet facility on the mobile communication facility; wherein the information contains location information; and communicating the location information to the navigation facility. In embodiments, the internet facility comprises a webpage. In embodiments, the location information is located on the webpage. In embodiments, the webpage comprises at least one of a restaurant guide, business guide, corporate website, Google, information portal, news website, and advertisement.

[0071] Embodiments include methods and systems of method of communicating a destination to a navigation facility. In embodiments, the methods and systems may involve causing a mobile communication facility to receive location information through at least one of a webpage, scanned image, local transmission, RFID facility, and local voice command; and communicating the location information to a navigation facility.

[0072] Embodiments include methods and systems of method of communicating information to a mobile communication facility in response to a phone call from the mobile communication facility. In embodiments, the methods and systems may involve receiving the call; presenting selection information; causing a user of the mobile communication facility to make a selection base on the presented information;

wherein the selection includes a request for visually presented information; and downloading information to the mobile communication facility in a format to be viewed. In embodiments, the information to be viewed includes a menu. In embodiments, the menu includes information pertaining to at least one of a directions, navigation, store information, corporate information, sale information, coupon information, directory, video, contact information, location information, and phone number. In embodiments, the menu includes selectable features. In embodiments, the selectable features comprise links. In embodiments, the links provide connections to other downloaded information. In embodiments, the links provide connections to websites. In embodiments, the information to be viewed includes at least one of a logo, trademark, and service mark.

[0073] Embodiments include methods and systems of method of establishing a cell phone tower for a mobile phone. In embodiments, the methods and systems may involve assessing a mobile phone location; assessing a first tower location of a first cell phone communication tower; assessing a second tower location of a second cell phone communication tower; establishing a first distance between the mobile phone location and the first tower location; establishing a second distance between the mobile phone location and the second tower location; and generating a mobile phone tower connection decision based at least in part on the first and second distance. In embodiments, the methods and systems may further comprise the step of: predicting a travel direction of the mobile phone and using the prediction in the generation of the connection decision.

BRIEF DESCRIPTION OF THE FIGURES

[0074] The following figures depict certain illustrative embodiments of the invention in which like reference numerals refer to like elements. These depicted embodiments are to be understood as illustrative of the invention and not as limiting in any way.

[0075] Fig. 1 illustrates a road map according to the principles of the present invention.

[0076] Fig. 2 illustrates a flow diagram for presenting a computer generated map according to the principles of the present invention.

[0077] Fig. 3 illustrates an in car map with gps according to the principles of the present invention.

[0078] Fig. 4 illustrates a web based map according to the principles of the present invention.

[0079] Fig. 5 illustrates a computer map according to the principles of the present invention.

[0080] Fig. 6 illustrates a computer map with gps according to the principles of the present invention.

[0081] Fig. 7 illustrates a tracking position through cell phone triangulation according to the principles of the present invention.

[0082] Fig. 7a illustrates a tracking multiple positions of a cell phone according to the principles of the present invention.

[0083] Fig. 8 illustrates a process for determining cell phone locations according to the principles of the present invention.

[0084] Fig. 9 illustrates a process for determining cell phone speed according to the principles of the present invention.

[0085] Fig. 10 illustrates a tracking position through gps location according to the principles of the present invention

[0086] Fig. 11 illustrates a process for determining speed through gps locations according to the principles of the present invention.

[0087] Fig. 12 illustrates tracking traffic patterns through mapped locations according to the principles of the present invention.

[0088] Fig. 13 illustrates tracking traffic patterns through cameras according to the principles of the present invention.

[0089] Fig. 14 illustrates tracking traffic patterns through manual measurement according to the principles of the present invention.

[0090] Fig. 15 illustrates tracking traffic flow through toll traffic according to the principles of the present invention.

[0091] Fig. 16 illustrates tracking traffic flow through transponders according to the principles of the present invention.

[0092] Fig. 17 illustrates tracking traffic flow through transponders, wherein the master is mounted on a non-toll facility according to the principles of the present invention.

[0093] Fig. 18 illustrates tracking traffic flow through transponders, wherein the master is mounted on a sign according to the principles of the present invention.

[0094] Fig. 18A illustrates tracking traffic with radar according to the principles of the present invention.

[0095] Fig. 19 illustrates a map of traffic density according to the principles of the present invention.

[0096] Fig. 20 illustrates a map of traffic flow according to the principles of the present invention.

[0097] Fig. 21 illustrates a process for predicting traffic speed within a route according to the principles of the present invention.

[0098] Fig. 22 illustrates a process for predicting typical route time according to the principles of the present invention.

[0099] Fig. 23 illustrates a process for providing real time route time according to the principles of the present invention.

[00100] Fig. 24 illustrates a process for presenting shortest route using speed limits and shortest typical time route according to the principles of the present invention.

[00101] Fig. 25 illustrates a process for presenting a plurality of routes based on typical time according to the principles of the present invention.

[00102] Fig. 26 illustrates a process for presenting a route based on starting time according to the principles of the present invention.

[00103] Fig. 27 illustrates a presenting information to guide start time according to the principles of the present invention.

[00104] Fig. 28 illustrates a presenting a map with shortest travel time based on speed limits, shortest travel time based on typical travel conditions, and shortest travel time based on present travel conditions according to the principles of the present invention.

[00105] Fig. 29 illustrates a presenting alternate route based on traffic information according to the principles of the present invention.

[00106] Fig. 29A illustrates systems and methods for communicating route information according to aspects of the present invention.

[00107] Fig. 30 illustrates warning through on dash signal according to the principles of the present invention.

[00108] Fig. 31 illustrates warning through on board mapping system according to the principles of the present invention.

[00109] Fig. 32 illustrates a process for warning based on cell phone locations according to the principles of the present invention.

[00110] Fig. 33 illustrates a process for warning based on cell phone speed according to the principles of the present invention.

[00111] Fig. 34 illustrates a process for warning based on gps locations and or speeds according to the principles of the present invention.

[00112] Fig. 35 illustrates a vehicle with transmitter and a vehicle with a receiver according to the principles of the present invention.

[00113] Fig. 36 illustrates a vehicle with transponder according to the principles of the present invention.

[00114] Fig. 37 illustrates a process flow diagram for determining warning based on received information according to the principles of the present invention.

[00115] Fig. 38 illustrates a process flow diagram for maintaining vehicle speed based on received information according to the principles of the present invention.

[00116] Fig. 39 illustrates a traffic information facility according to the principles of the present invention.

[00117] Fig. 40 illustrates a portable communication facility 4000 according to the principles of the present invention.

[00118] Fig 41 illustrates an in-vehicle communication facility according to the principles of the present invention.

[00119] Fig. 42 illustrates a system for communicating with a telephone answering facility wherein information is communicated in a format to be viewed and or listened to through the communication platform according to the principles of the present invention.

[00120] Fig. 43 illustrates a method of retrieving information from a communication answering facility wherein the download of information is facilitated by a cell network according to the principles of the present invention.

[00121] Fig. 44 illustrates a method of retrieving information from a communication answering facility wherein the information request is fulfilled in coordination with a location-based service according to the principles of the present invention.

[00122] Fig. 45 illustrates a method of downloading information from a portable communication facility to an in-vehicle location facility according to the principles of the present invention.

[00123] Fig. 46 illustrates an answering service facility according to the principles of the present invention.

[00124] Fig. 47 illustrates a communication platform that includes an RFID interrogation facility to communicate an interrogation signal according to the principles of the present invention.

[00125] Fig. 48 illustrates an electronic information repository with a display and a communication platform adapted to communicate with the information repository according to the principles of the present invention.

[00126] Fig. 49 illustrates an embodiment where a telephone answering service facility 4202 is in combination with other systems to facilitate the communication of information.

[00127] Fig. 49A illustrates a process for presenting a mobile communication facility user with information based at least in part on a user request.

[00128] Figure 50 illustrate several systems and methods for loading destination information into such systems.

[00129] Figure 51 illustrates a screen shot from a mobile communication facility according to the principles of the present invention.

[00130] Figure 52 illustrates a screen shot from a mobile communication facility according to the principles of the present invention.

[00131] Fig. 53 illustrates a secure location based service process according to the principles of the present invention.

[00132] Fig. 54 illustrates a secure location based service user interface.

[00133] Fig. 55 illustrates a process for providing secure location information transactions through the use of a user interface controlled filter.

[00134] Fig. 56 illustrates a process for providing secure location information transactions through the use of an automatic filter for unwanted requests (e.g. a spam filter).

[00135] Fig. 57 illustrates a process for providing secure location information in coordination with a key facility.

[00136] Fig. 58 illustrates an embodiment involving user approval prior to providing location information from the user's mobile communication facility.

[00137] Fig. 59 illustrates a cell phone tower communication progression method and system according to the principles of the present invention.

[00138] Fig. 60 illustrates an improved telephone answering system according to the principles of the present invention.

[00139] Fig. 61 illustrates an improved telephone answering process according to aspects of the present invention.

[00140] Fig. 62 illustrates a method of communicating with a telephone answering system and or a web service.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT(S)

[00141] The description below pertains to several illustrative embodiments of the invention. Although many variations of the invention may be envisioned by one skilled in the art, such variations and improvements are intended to fall within the compass of this disclosure. Thus, the scope of the invention is not to be limited in any way by the disclosure below.

[00142] An aspect of the present invention relates to providing maps, routes, directions, navigation, and other information relating to routes and or locations. In embodiments, maps, locations, routes and other information is provided to assist a user in assessing such information before, during, after and or in compilation of traveling. For example, improved methods and systems for providing travel time estimates and alternate

routes are provided. These systems methods include, among other things, route generation in a real time mode and in a typical traffic condition mode. The typical conditions may include, among other things, travel conditions during a certain time of day, week, and or year to provide an improved estimate of travel time during these periods.

[00143] Fig. 1 illustrates a map 100 according to the principles of the present invention. In an embodiment, the map includes representations of highways 102A and 102B as well as secondary roads 108 and access ramp 104. The map may also include one or more landmarks, buildings, facilities and the like 110. A map according to the present invention may be used for a road map, trail map, facility map, store map, personal location map, traffic map, or other map as may be useful to a user. In an embodiment, the map may be used to facilitate setting directions, informing of congestion, informing of population, informing of attractions, or provide other information useful to a user.

[00144] Fig. 2 illustrates a method for generating a map using a computer to facilitate the generation 200 according to the principles of the present invention. The method 200 includes obtaining map information 202. For example, map information may be gathered through manual sources, reference sources, computer sources, online sources, or other sources where map information may be found. The method 200 includes generating a map facilitated by a computer 204. For example, the information gathered may be used by a computer program to generate a map 100. The method 200 includes displaying the map on a computer screen, mobile communication device screen, or other screen adapted to display information to be available to a user 208. The method 200 includes a step of manipulating the map through the processing facility 210. For example, a user may interact with the map by zooming in and out, moving center of the map to another location, or other interactions. In an embodiment, a user may request a route from location to location and the computing facility may provide a suggested route. In an embodiment, the computing facility may provide an estimated travel time associated with the route.

[00145] Fig. 3 illustrates a mobile mapping facility 302 in an automobile 300 according to the principles of the present invention. The automobile 300 includes a cluster of performance meters 304 (e.g. speedometer). In an embodiment, the mobile

mapping facility 302 may be affixed to another facility (e.g. an automobile). In an embodiment, the mobile mapping facility 302 may be a hand held or otherwise mobile for personal mobility. The mobile mapping facility 302 includes a display facility where a map 100 may be displayed. The mobile mapping facility 302 may include a computer operating facility to display the map as well as allow a user to interact with the map. The mapping facility 302 may also include a gps or other locating facility to provide location information to the computing facility. In an embodiment, location information may be used to update the map, provide warnings, or other information. In an embodiment, a user may request a route from location to location and the mobile mapping facility 302 may provide a suggested route. In an embodiment, the computing facility may provide an estimated travel time associated with the route. In an embodiment, the computing facility may regenerate new route suggestions based on route information provided by the user, gps facility, locating facility, external data or internal data.

[00146] Fig. 4 illustrates a networked mapping facility 400 according to the principles of the present invention. The networked mapping facility 400 includes a display facility 402 where a map 100 may be displayed for example. The display may be associated with a local computing facility (not shown) and the computing facility may be associated with a server computing facility 404 through a network 408. In an embodiment, the network 408 may be a local area network, wide area network, world wide web, personal network or other network. For example, a user may use a client application to access a website (e.g. mapquest.com) to request a map or directions. The server application may respond by providing the client application with the desired map and or directions from location to location. In an embodiment, the networked mapping facility 400 may regenerate new route suggestions based on route information provided by the user, gps facility, locating facility, external data or internal data.

[00147] Fig. 5 illustrates a local mapping facility 500 according to the principles of the present invention. The local mapping facility 500 includes a display facility 402 where a map 100 may be displayed for example. The local mapping facility 500 includes a computing facility 502 that is associated with the display facility 402. The computing facility 502 may generate maps according to the principles of the present invention. In an embodiment, a user may interact with the computing facility to display,

manipulate or otherwise interact with a map and or the mapping software used to generate the map. In an embodiment, the local mapping facility 500 may regenerate new route suggestions based on route information provided by the user, gps facility, locating facility, external data or internal data.

[00148] Fig. 6 illustrates a local mapping facility associated with information facility 602. In an embodiment, the information facility may be associated with the computing facility 502 through a network, or be locally accessible either internal or external to the computing facility 502. In an embodiment, the information facility 602 may be adapted to provide information to be used to generate a map or portion of a map. For example, the information facility may be a gps facility to generate location information, a database to supply route information, or other information required and or desired for map and or direction generation and or modification.

[00149] An aspect of the present invention involves locating vehicles, people or other things and using that information to facilitate travel. In an embodiment, mobile phones, or other transmitters, are located through triangulation (e.g. TruePosition triangulation software for 911 locations offered by TruePosition, Inc., King of Prussia, PA) or other techniques to locate vehicles on roadways. In an embodiment, the locations may be used to estimate roadway congestion and or travel speed. For example, cell phones in an area may be located and mapped against a known roadway map to determine roadway congestion levels. In another example, the position of the cell phone locations over a period of time may be tracked to estimate route speed. In an embodiment, cell phone locations are tracked while the cell phone is otherwise in normal use. In another embodiment, cell phones in an area are requested to transmit so their positions can be determined.

[00150] Fig. 7 illustrates a location facility 700 according to the principles of the present invention. In an embodiment, a cell phone 710, or other transmitting device, is located through a triangulation system. For example, a user may be using their cell phone 710 and the triangulation system with cell towers 702A, 702B and 702C may locate and or track the position of the cell phone. The cell phone location may be mapped onto a roadway map to provide location, speed and or other travel information. In an embodiment, the cell phone 710 may be requested to make a transmission so the

triangulation, or other locating system, can locate and or track the position of the cell phone or mapping on a roadway or route 704. The triangulation system may use a plurality of cell phone towers 702 and the plurality of towers may listen to a cell phone 710 transmissions 712. The transmissions 712 may be timed or power measured to determine the position of the cell phone. While many of the embodiments described herein refer to cell phones and cell phone triangulation techniques, the inventors envision many alternate transmission and location systems and the present invention encompasses such alternate transmission and location systems and methods. For example, a vehicle, cell phone or other device may be equipped with a gps locating facility and the device may transmit its location to another facility, or another facility may locate such device or transmission.

[00151] Fig. 7a illustrates the location system 700 according to the principles of the present invention tracking the position of a vehicle. The location system 800 includes a process for tracking the position of the cell phone 710 through second measurement of position 714. In an embodiment, the location system is used to track position and or estimate travel speed.

[00152] Fig. 8 illustrates a process for locating a cell phone or other transmitting device 800 according to the present invention. The process involves requesting a cell phone to make a transmission 802. In an embodiment, cell phones in an area may be requested to make a transmission. For example, a single cell tower may transmit a request to all cell phones within its reception area. In an embodiment, specific cell phone(s) may be requested to make transmissions. For example, known phone numbers (e.g. a block of known numbers) may be requested. In an embodiment, blocks of cell phones may be requested to make transmissions through staggered times to avoid an over-flow of information. The process of locating 800 further includes determining the cell phone(s) location through triangulation, or other means 804. The process also includes recording the cell phone locations 808. in an embodiment, recordation may be used to track the location and or determine the speed of the cell phone position change. In another embodiment, recordation 808 may not be accomplished. For example, a picture of cell phone locations may provide a congestion map whereby traffic conditions, or other parameters, are determined without needing an indication of speed.

[00153] Fig. 9 illustrates a process for determining the speed, distance, direction, velocity or other parameter from a cell phone or other transmitting device according to the principles of the present invention. The process involves determining a first position of the cell phone 902, determining a second position of the cell phone 904, and determining the distance difference between the first and second positions and estimate the speed based on the known time between measurements 908.

[00154] Fig. 10 illustrates a process for locating global positioning devices (gps) according to the principles of the present invention. The process involves several satellites 1004 and transmissions 1010 between the satellites and the gps chip 1002.

[00155] Fig. 11 illustrates a process for determining the speed, distance, direction, velocity or other parameter from a gps device according to the principles of the present invention. The process involves determining a first position of the gps device 1102, determining a second position of the gps device 1104, and determining the distance difference between the first and second positions and estimate the speed based on the known time between measurements 1108.

[00156] Fig. 12 illustrates a traffic pattern map 1200 according to the principles of the present invention. In this embodiment, the traffic map 1200 includes an indication of a roadway 1202 and on-ramp to the roadway 1204. The traffic map 1200 also includes an indication of traffic patterns where the congestion is light 1208 and relatively heavy 1210.

[00157] Fig. 13 illustrates a traffic monitoring system 1300 according to the principles of the present invention including a camera 1304. In an embodiment, the camera 1304 may be used to track traffic and or traffic patterns on a roadway 1302.

[00158] Fig. 14 illustrates a traffic monitoring system 1400 according to the principles of the present invention including a counting system 1404. In an embodiment, the counting system 1404 includes a counting facility 1408 that lays on, in, under, or over the roadway 1402 to track traffic.

[00159] Fig. 15 illustrates a traffic monitoring system 1500 according to the principles of the present invention, wherein the monitoring is accomplished through tollbooth monitors 1504. The tollbooth monitors 1504 may be people, transponders,

transponders receivers or other devices to monitor the flow of traffic through the tollbooth.

[00160] Fig. 16 illustrates a traffic monitoring system 1600 according to the principles of the present invention, wherein the monitoring is accomplished through transponders 1608 which may be in a vehicle 1604 with readers 1602 associated with the roadway. In this example, the readers are mounted near the roadway.

[00161] Fig. 17 illustrates a traffic monitoring system 1700 according to the principles of the present invention, wherein the monitoring is accomplished through transponders 1608 which may be in a vehicle 1604 with readers 1702 associated with the roadway. In this example, the readers are mounted in the roadway. In an embodiment, traffic may be monitored through manual counting or other means controlled by a human's 1704 interactions.

[00162] Fig. 18 illustrates a traffic monitoring system 1800 according to the principles of the present invention, wherein the monitoring is accomplished through transponders 1608 which may be in a vehicle 1604 with a reader 1804 associated with a roadway sign 1802.

[00163] Fig. 18A illustrates a traffic monitoring system according to the principles of the present invention, wherein the monitoring is accomplished through a radar 1810 system.

[00164] Fig. 19 illustrates a map of traffic density 1900 according to the principles of the present invention. In an embodiment, various traffic patterns are represented by various symbols, lines, line widths, and the like. For example, a thick line 1908 may represent relatively heavy congestion, a thin line 1904 may represent light congestion, and a medium weight line 1902 may represent a typical congestion condition.

[00165] Fig. 20 illustrates a map of traffic flow 2000 according to the principles of the present invention. In an embodiment, various traffic flow patterns are represented by various symbols, lines, line widths, and the like. For example, a thick line 2008 may represent relatively slow traffic flow, a thin line 2004 may represent quick moving traffic, and a medium weight line 2002 may represent a typical flow pattern.

[00166] An aspect of the present invention relates to estimating travel time based on travel conditions. In an embodiment, the estimations are based on typical travel conditions. In an embodiment, the estimations are based on real time travel conditions.

[00167] Fig. 21 illustrates a process for predicting traffic performance within a route 2100. The process includes selecting a route portion 2102, selecting a statistic to predict route performance 2104, applying the statistic to route portion data to calculate a prediction of route performance 2108, and presenting the route performance to a user 2110. In an embodiment, the step of selecting a statistic 2104 may involve selecting any number of statistics such as average, mean, mode, median, standard deviation, or other statistic to be applied to the data associated with the traffic on the route. In an embodiment, the statistic may be applied to data over a given period. For example, the data for the route may be provided during the course of an hour in a given day and the statistic (e.g. median) may be applied to the hours worth of data to predict travel time during the hour.

[00168] Fig. 22 illustrates a process for predicting traffic performance within a route 2200. The process includes selecting a route portion 2202, selecting a typical statistic to predict route performance 2204, applying the typical statistic to route portion data to calculate a prediction of route performance 2208, and presenting the route performance to a user 2210. In an embodiment, the step of selecting a typical statistic 2104 may involve selecting any number of statistics such as average, mean, mode, median, standard deviation, or other statistic to be applied to the data associated with the traffic on the route. In an embodiment, the statistic may be applied to data over a given period. For example, the data for the route may be provided during the course of an hour in a given day and the statistic (e.g. median) may be applied to the hours worth of data to predict travel time during a like the hour.

[00169] Fig. 23 illustrates a process for predicting traffic performance within a route 2300. The process includes selecting a route portion 2302, selecting a statistic to predict real time route performance 2304, applying the statistic to route portion data to calculate a prediction of route performance 2308, presenting the route performance to a user 2310, and repeating the steps 2304, 2308, and 2310 to update the information.

[00170] Fig. 24 illustrates a process for presenting a shortest route using speed limits and a shortest route using typical route conditions 2400. In an embodiment, the process involves selecting a route portion 2402, selecting speed limit(s) on the route portion 2404, applying the speed limit(s) to the route portion 2408, and presenting route performance (e.g. predicted route travel time) based on speed limits 2410. In an embodiment, the process also involves selecting a statistic to measure the performance of the route portion 2412, applying the statistic to the route portion to predict route performance 2414, and presenting route performance based on the statistic

[00171] 2418. For example, a user may want to see information relating to a desired route regardless of the traffic conditions as well as seeing information relating to the shortest route given normal or typical route conditions.

[00172] Fig. 25 illustrates a process for presenting a plurality of routes based on typical times in each route 2500. In an embodiment, the process involves calculating a first route and associated first route travel time 2502, calculating a second route and associated second route travel time 2504, and presenting first and second routes including respective travel time 2508. For example, a user may want to see more than one suggested travel route based on typical travel conditions.

[00173] An aspect of the present invention relates to travel time prediction based on typical conditions. In an embodiment, the travel time prediction is based at least in part on a projected start time of the travel and or when a traveler will reach a particular point along a travel route. For example, travel conditions change through a day, depending on the day of the week, week of the month or whether the travel day lands on a holiday, typical vacation or light travel time or during a period where there is an event, sporting event or other condition that tends to increase travel time on a particular route. An embodiment of the present invention involves estimating travel time based on travel periods.

[00174] Fig. 26 illustrates a process for presenting a route based on starting time 2600. In an embodiment, the process involves selecting a start travel time, starting point and destination 2602, calculating a first route and associated first route travel time based on a start time 2604, and presenting the first route and associated route travel time based on a start time 2608. For example, a predicted route time may be dependant on

when the travel is going to begin and or when the traveler is going to reach a certain portion of the route, so the user may be interested in route performance based on start time, end time, time of arrival at a particular point along the travel, day of the week, week of the year, holiday status, or the like.

[00175] Fig. 27 illustrates a display facility where information to guide travel is presented, including a provision of selecting start time 2700. In an embodiment, the information includes a map 2702 with a route 2722. In an embodiment, the information also includes an indication of travel time if started at a particular time, 7am Monday, January 5, 2003, 2704, an indication of travel time if started one hour earlier, and an indication of travel time if started one hour later. In an embodiment, the information presented also includes the travel start time 2712 along with a toggle up 2714 and toggle down 2718 to move the start time back or forward. In an embodiment, the information also includes an indication of the month and day 2720. In embodiments, a graph of estimated route travel time 2274 is presented. The graph may include the time of day the traveler intends to leave 2732, estimated travel time 2728, and an plot of travel time estimates 2730.

[00176] Fig. 28 illustrates a display facility where information to guide travel is presented, including information relating to the shortest travel time based on speed limits, shortest travel time based on typical travel conditions, and shortest travel time based on present travel conditions 2800. In an embodiment, the information includes a map with representations of the routes with the shortest travel time based on speed limits 2802, shortest travel time based on typical travel conditions 2804, and shortest travel time based on present travel conditions 2808. In an embodiment, the information also includes the predicted times associated with the shortest travel time based on speed limits 2810, shortest travel time based on typical travel conditions 2812, and shortest travel time based on present travel conditions 2814.

[00177] Fig. 29 illustrates a display facility where information to guide travel is presented, including presenting alternate route based on traffic information 2900. In an embodiment, the information includes a map with a route 2902 and an alternate route based on traffic condition information 2904.

[00178] In embodiments, the systems and methods described in connection with figures 21 through 29 may be deployed while using a mobile communication facility (e.g. cell phone, mobile phone, satellite phone, internet phone, network phone, portable communication facility, wireless phone, pda, combination pda/mobile phone, Palm® system, Blackberry® system, in-vehicle communication facility, in-vehicle navigation facility, in-vehicle information facility), desktop computing facility, laptop computing facility, portable computing facility, client-server facility, local computing facility, networked based computing facility, internet appliance, internet computing facility or other such system useful in displaying and or interacting with such information.

[00179] While many of the embodiments describe the use of transponders and or transmitters, the present invention is not limited to a particular device or method of communication. For example, a transmitter may be used in place of a transmitter in an embodiment.

[00180] An aspect of the present invention is a user alert system. In an embodiment, a user loads a route to be taken and an automated system provides information to the user to give the user an update as to travel conditions for the route. For example, the route of Rt.95 south into NYC is loaded to be traveled, and or being traveled, on Wednesday. Congestion occurs (e.g. as a result of an accident or construction) in the route and the route information system sends a alert to the user. The alert may come in the form of calls, emails, text messages, voice messages, video messages or otherwise provides information to the user relating to the alert. The alert may be communicated to the users mobile communication facility (e.g. cell phone, mobile phone, satellite phone, internet phone, network phone, portable communication facility, wireless phone, pda, combination pda/mobile phone, Palm® system, Blackberry® system, in-vehicle communication facility, in-vehicle navigation facility, in-vehicle information facility), desktop computing facility, laptop computing facility, portable computing facility, client-server facility, local computing facility, networked based computing facility, internet appliance, internet computing facility or other such system useful in displaying and or interacting with such information. The alert may contain information to relating to identifying the accident and or congestion, time estimates for clearing the congestion, travel time estimates, alternate route information,

alternate route suggestions, time estimates associated with alternate routes or other information related to the alert. In an embodiment, the alert system take the form of a call system that calls the user's mobile communication facility. In an embodiment, the user may use a web based routing system (e.g. mapquest.com) and load a mobile phone number into the web based routing system and the routing system may call the user with periodic updates as to the route conditions and or call the user with information relating to abnormal route conditions. In an embodiment, the call back system may suggest alternate routes and or predict the impact of abnormal conditions. For example, the call back system may call the user and inform the driver of a fifteen minute delay due to an accident and provide no alternate route or provide information indicating it is not worth seeking alternate routes. In an embodiment, the call back system may call the user with information relating to alternate routes. In embodiments, the user may preload route and or destination information, prior to or during travel, into a system and the user may be provided with information relating to the route and or destination prior to or during travel. For example, the user may be alerted through his mobile communication facility prior to leaving on the trip. For example, the user may have loaded a work destination into the system and the system may call him (email, or otherwise (e.g. an alert as described herein)) an hour prior to the trip to inform the user of travel conditions, alternate route suggestions or other information (e.g. route, direction, navigation information). The system may be programmed to send the alert, or update, only when problems, congestion, or other abnormalities occur, or the system may be programmed to provide information everyday, every workday, or periodically, or based on some other parameter.

[00181] Fig. 29A illustrates systems and methods for communicating route information according to aspects of the present invention. In embodiments, a user may use a mobile communication facility (e.g. cell phone, mobile phone, satellite phone, internet phone, network phone, portable communication facility, wireless phone, pda, combination pda/mobile phone, Palm® system, Blackberry® system, in-vehicle communication facility, in-vehicle navigation facility, in-vehicle information facility) 2908 to access route, direction, navigation or other travel information. While these embodiments are described in connection with mobile communication facilities, it should

be understood that other computing facilities, such as desktop, laptop, internet appliance, and others, are contemplated by the present invention and are encompassed by the present invention. Elements 2910A – 2910E represent various screen shots according to the principles of the present invention from mobile communication facility 2908. Screen shot 2910A represents an embodiment where various routes, destinations, directions, traffic information, congestion information, route information, navigation information, or other information relating to travel may be stored. For example, the mobile communication facility may include links, buttons, connections or other such facilities 2912A- 2912D. In this embodiment, connection 2912A may represent a menu connection to route information, traffic information, congestion information, directions, navigation information or other such information relating to a destination the user labeled or the system labeled "school," while 2912B may related to such information pertaining to a place of work, 2912C may be a connection to information pertaining to the user's home, and 2912D may relate to another destination of interest to the user "NYC." In embodiments, the user may load destinations, directions, route information, navigation information, and the like in connection with such menu items to make for convenient retrieval at a later time.

[00182] Figure 29A illustrates a screen shot 2910B according to the principles of the present invention. Screen shot 2910B illustrates an embodiment where a user may track his route, route performance (e.g. speed, distance, time of day) or otherwise collect information relating to his route. In this embodiment, the user may have the option to choose a function (e.g. possibly from a menu) to start the recordation of the route and or route information 2914B. The user may also be presented with an option to end the recording 2914C. The user may also be presented with an option to name the recording 2914D.

[00183] Figure 29A illustrates a screen shot 2910C according to the principles of the present invention. Screen shot 2910C illustrates an embodiment where a user may set a time when he expects to start on a route or head to a destination. For example, a user may set the time he expects to start his travel through a menu style option 2918C and select a route and or destination through a menu 2918B or other facility (e.g. typing in the destination, calling a voice recognition system to load the destination, using voice

recognition in the phone to load the destination, receiving the destination from an automated telephone answering system as described below in connection with the principles of the present invention). In an embodiment, the user may set the time to begin travel to a destination at some time before travel begins (e.g. the night before going to work) and an alert notification system as described herein in connection with the principles of the present invention (e.g. a voice mail, email, text message, video message or the like) may provide traffic alerts, route information, alternate route suggestions, alternate route information, or other information pertaining to the trip the traveler has planned. In an embodiment, the user may be presented with options to save times and routes as recurring. For example, the user may set the time he normally travels to and or from work along with his work destination and or route as a recurring to be provided with recurring route information, before during or following his trip. The recurring stored information may relate to work, home, periodic travel plans, school, activities or other destinations, routes, directions, navigation, or other route information. In an embodiment, the recurring alert system may be set to provide alerts continually, at set times, recurring at set times everyday, during week days, during weekends, if the route conditions are not typical, if it is typical, if there are problems expected, at a specified time before travel is expected, or otherwise.

[00184] Figure 29A illustrates a screen shot 2910D according to the principles of the present invention. Screen shot 2910D illustrates an embodiment where a user may display information pertaining to route performance, direction, navigation or other information relating to travel. In this embodiment, the screen shot contains a graph of route performance similar to that described in connection with figures 27 – 29.

[00185] Figure 29A illustrates a screen shot 2910E according to the principles of the present invention. Screen shot 2910E illustrates an embodiment where a user may select a link, button, menu selection, or other connection 2920A to obtain route and or navigation information. For example, the connection 2920A may be selected to check traffic on a given route and or the route the user is currently traveling. The user may be sitting in traffic and want to know how long the delay will be, what is causing the delay, alternative route information, number of miles until the congestion breaks up, or other information relating to the route. In another situation, the user may be moving along the

route at expected speeds and want an update as to the route performance ahead, traffic ahead, alternative route, expected delays, or other information. In an embodiment, the phone may connect with a route information service upon selection of the connection 2920A. The route information service may already have the route information for the route or road the travel has chosen to check or the road the traveler is on. In another embodiment, the route information service may gather the information upon the request. For example, the route information service may monitor the traffic on main roads and highways in a real time or near real time manner, but the service may not track performance of smaller, less traveled, secondary or other roads or areas. Upon request, the route information service may 'ping' cell phones or other transmitters in the area of the user to assess the traffic condition and then report back to the user. In an embodiment, the service may provide updates on a periodic basis.

[00186] In embodiments, a data collection facility may be incorporated into a, or associated with a, mobile communication facility. The data collection facility may be adapted to collect information pertaining to the user's habits and apply the data collected through algorithms to help determine future performance. For example, the collection facility may collect information on the user's travel habits (e.g. how fast he typically drives as compared to speed limits and or other traffic) and this information may be used in the prediction or estimates of future travel times. For example, when predicting the travel time based on the time of day, or other parameter, the fact that the user normally exceeds speed limits by five to ten miles per hour may be factored into the travel estimate (e.g. applied to the sections of travel where light traffic is expected).

[00187] An aspect of the present invention relates to warning of traffic conditions. In an embodiment, a traffic tracking facility may be used to generate a warning signal and the warning signal may be transmitted to a vehicle in close proximity to a traffic condition. For example, a tracking facility may track traffic patterns and locate an abnormal traffic condition (e.g. an accident, construction, traffic congestion, or vehicles traveling a significantly slower rates than a speed limit or predicted speed) and a warning facility may be used to warn vehicles in close proximity to the abnormal traffic condition.

[00188] Fig. 30 illustrates warning through an on-dash signal 3002 according to the principles of the present invention. In an embodiment, a driver may be warned of a traffic condition through the on-dash signal 3002. The on-dash placement of the signal is one example of a useful placement of a visual warning facility, the present invention encompasses other types and placements of visual warning facilities as well as audio facilities and warning through physical contact methods (e.g. vibration). For example, an external signal may be received by the warning facility in the vehicle and the external signal may provide warning information to alert the driver. In an embodiment, a traffic tracking system may monitor the traffic conditions in an area and the tracking system may generate warning signals to vehicles in close proximity to a particular traffic condition. For example, the tracking system may detect an unusual traffic condition indicating abnormally slow traffic in close proximity with traffic that is moving at significantly higher speeds. The tracking position system may ascertain information relating to the traffic in the higher speed portion (e.g. through cell phone identification, through on-board vehicle identification, through gps identification) and communicate to the vehicles in the higher speed traffic portion information indicating the abnormal traffic condition.

[00189] Fig. 31 illustrates warning facility 3102 through on board mapping system 302 according to the principles of the present invention. In an embodiment, the on board mapping system 302 may display a warning indication 3102 to provide a driver with information pertaining to traffic conditions. For example, the on board mapping system may receive information relating to slower traffic in the planned route or route currently traveling, and the mapping system may generate an indication on the map 100 indicating the slower traffic. In an embodiment, an audio warning may accompany a display indication.

[00190] Fig. 32 illustrates a process for warning of traffic conditions based on cell phone locations 3200 according to the principles of the present invention. In an embodiment, the process involves tracking vehicle position based on cell phone locations 3202, identifying a traffic condition based on the cell phone locations 3204, identifying vehicles in close proximity to the traffic condition through cell phone identification 3208,

and warning the vehicles in close proximity to the traffic condition through a warning facility based on the cell phone identification 3210.

[00191] Fig. 33 illustrates a process for warning of traffic conditions based on cell phone speed 3300 according to the principles of the present invention. In an embodiment, the process involves tracking vehicle speed based on cell phone locations 3302, identifying a traffic condition based on the cell phone speeds 3204, identifying vehicles in close proximity to the traffic condition through cell phone identification 3208, and warning the vehicles in close proximity to the traffic condition through a warning facility based on the cell phone identification 3210.

[00192] Fig. 34 illustrates a process for warning based on gps locations and or speeds 3400 according to the principles of the present invention. In an embodiment, the process involves tracking vehicle position and or speed based on gps locations 3402, identifying a traffic condition based on the gps locations 3404, identifying vehicles in close proximity to the traffic condition through cell phone identification, transmission identification and or gps facility transmission 3408, and warning the vehicles in close proximity to the traffic condition through a warning facility 3410.

[00193] Fig. 35 illustrates a system and method for communicating from a vehicle with transmitter to a vehicle with a receiver according to the principles of the present invention 3500. In an embodiment, a first vehicle 3502A includes a transmitter 3504 and a second vehicle 3502B includes a receiver 3510. In an embodiment, the first vehicle 3502A may transmit information relating to its performance (e.g. speed, acceleration, deceleration, braking, temperature) to the second vehicle 3502B. For example, the transmission range of the transmitter 3504 may be short range (e.g. 100 yards) and the first vehicle may generate and communicate information relating to its speed or rate of change in speed through its transmitter 3504. A vehicle within the transmitter range, for example the second vehicle 3502B, may receive the information. In and embodiment, the second vehicle 3502B may automatically respond to the information (e.g. by decelerating if the indication is the first vehicle 3502A is decelerating) or a warning facility in the second vehicle 3502B may generate and communicate a warning or other indication to the driver of the second vehicle 3502B. In an embodiment, the transmitter 3504 may have a long range (e.g. one mile). The

transmitter 3504 may transmit information relating to the performance of the vehicle and vehicles within the transmission range may receive the information. For example, the speed of the first vehicle 3502A may be abnormally slow, or significantly slower than the speed of a following second vehicle 3502B. The second vehicle may include a warning facility and the warning facility may generate a warning for the driver of the second vehicle of slower up coming traffic. A method of communicating information over a relatively long range may be useful to warn up coming traffic of abnormal traffic conditions such as an accident, construction, or other congestion. In an embodiment, construction equipment (e.g. machines, trucks, barriers, signs) are equipped with such transmitters to warn of construction activity.

[00194] Fig. 36 illustrates a vehicle with transponder according to the principles of the present invention 3600. In an embodiment, a vehicle 3502 may include a transponder 3602 that may be activated by another vehicle in close proximity.

[00195] Fig. 37 illustrates a process flow diagram for determining warning based on received information 3700 according to the principles of the present invention. In an embodiment, the process involves transmitting an indication of a vehicle condition from a first vehicle 3702, receiving the indication at a second vehicle 3704, and communicating a warning in the second vehicle 3708.

[00196] Fig. 38 illustrates a process flow diagram for maintaining vehicle speed based on received information 3800 according to the principles of the present invention. In an embodiment, the process involves transmitting an indication of a vehicle speed from a first vehicle 3802, receiving the indication at a second vehicle 3804, and controlling and or modifying the speed of the second vehicle based on the indication 3808.

[00197] An aspect of the present invention relates to systems and methods of providing route information, navigation, and or directions. In embodiments, a traveler may use a mobile communication facility, cell phone, or other communication facility to connect with a route information system. The route information system may locate the traveler through a location facility in coordination with route or mapping information. The traveler may request information relating to routes and or directions from the route information facility, for example through cell phone interaction. The traveler may

request information relating to a preloaded route for example. In embodiments, the route information system may automatically provide route information pertaining to the apparent route the traveler is on. The traveler may be provided with an opportunity to select route options or alternatives. In an embodiment, the traveler may activate the route information facility through use of a cell phone. Similar to the cell phone activated 411 telephone information system (where phone number information is provided), the traveler may dial an access code (e.g. 411, 511, * 71, etc.) to be connected with the system. Once connected, the traveler may request direction and or route information relating to a destination. For example, he may request directions to the "YMCA in Danvers, MA". The route information system may then look up, or be used to look up, the destination address, locate the traveler (e.g. through cell phone triangulation), and provide the traveler directions to the destination. In embodiments, the traveler may request directions to a type of destination (e.g. gas station, hotel, ATM) or landmark (e.g. State House) or activity (e.g. arcade).

[00198] Figure 39 illustrates a travel information system 3900 according to the principles of the present invention. As described herein in connection with fig. 7, a cellular tower system may be associated with a location facility 3902. The location facility 3902 may provide location, speed, or other information relating to a transmitter (e.g. cell phone). The travel information system 3900 may also include a route information facility 3904. The route information facility 3904 may be associated with a destination database 3912, a route database 3914 and a traffic information database 3918. In an embodiment, the destination database 3912 may include information relating to destination locations. For example, it may be a database with associations between phone numbers, street addresses, towns, states, countries, type of destination, type of landmark, type of activity or other information relating to destinations. The destination database may also include information relating to preloaded destination(s). For example, a traveler may load information relating to a destination to be later retrieved.

[00199] In an embodiment, the route information database 3914 may include information relating to travel routes. For example, it may include maps, map information, traffic information, travel condition information, travel times, travel time predictions, or other information regarding to routes, navigation, and or directions. In an

embodiment, the traffic information database 3918 may include information relating to route traffic, alternate routes, route times, route time predictions, typical route performance or other information relating to routes and or directions.

[00200] While the destination database 3912, route database 3914, and traffic information databases are illustrated as separate databases, it should be understood that these and other databases may be combined or further separated, and associations may be made between the data in the databases.

[00201] The route information facility 3904 may use information in the databases (e.g. databases 3912, 3914, 3918) as well as information from the location facility 3902 to provide information to the traveler. In embodiments, a traveler connects with the route information facility 3904 through a cell phone, or other communication facility, transmission 3910. For example, the traveler may initiate a connection by dialing an access code (e.g. 411 or *73). Once connected, the route information facility 3904 may gather information from the location facility 3902 or databases 3912, 3914, and 3918 to provide information to the traveler.

[00202] In an embodiment, route information may be preloaded into a route information facility 3904, or associated facility or database, and the route information facility 3904 may provide traffic information pertaining to the route given a travelers location. For example, a traveler may dial a specific phone number or code (e.g. *73) on his cell phone to access the route information facility 3904. The route information facility 3904 may then locate the traveler's position (e.g. using cell phone triangulation, or gps location) and associate the position with the preloaded route information. The traveler may then be provided with route specific travel conditions (e.g. congestion, travel time estimates or predictions).

[00203] In an embodiment, the traveler may also be informed about alternate routes or alternate route performance. For example, the traveler may be traveling on I-93S towards Boston when initiating the call. The route information facility 3904 may recognize his position as being close to the Sullivan Square exit. The traffic conditions on the highway to downtown may be such that taking the Sullivan Square exit and corresponding alternative route to downtown may cut time off the traveler's trip. The

traveler may be informed of the route performance, comparison of times estimated, predicted times, or the like.

[00204] In an embodiment, the traveler may take the alternate route and make an indication (e.g. key stroke) telling the route information facility 3904 of his decision. In an embodiment, the traveler stays engaged with the route information facility 3904, the system monitors his position and recognizes the new route. The route information facility 3904 may then communicate new route instructions. The new route instructions may be provided as complete instructions, stepwise, or otherwise.

[00205] In an embodiment, a route information facility 3904 identifies a traveler's position (e.g. through cell phone triangulation), associates the position with a roadway, and predicts the route the traveler is taking. For example, the traveler may initiate a call to the route information facility 3904 while traveling on I-93S towards Boston. The route information facility 3904 may recognize the traveler's position, associate a roadway with the traveler's position and predict he is traveling I-93S to Boston or some destination before or after Boston. In an embodiment, traveler would then be informed of traffic conditions on I-93S ahead of the traveler. For example, the traveler may be informed of traffic conditions up to and or through Boston.

[00206] In an embodiment, a traveler may select route options to instruct the route information facility 3904 of the travelers route intentions. For example, the route information facility 3904 may identify the traveler as traveling on I-93S towards Boston (e.g. through cell phone triangulation) and provide route options to the traveler to select a route other than continuing on I-93S towards Boston. The options may be menu driven (e.g. select one for I-495S, two for I-495N), exit driven (e.g. type in your exit number), or otherwise driven for indicating a desired or intended route (e.g. voice recognition indications). In an embodiment, the traveler may be provided information relating to the selected route.

[00207] In an embodiment, a traveler may load route and or destination information into a route information facility 3904 and later activate a direction system through his mobile communicator (e.g. cell phone, on-board transmitter). For example, the traveler may load destination and or route information into a computing system via the internet or other means. The traveler may then connect with the route information

facility 3904 to obtain directions. The monitoring system may locate the traveler through triangulation or other means and provide directions per the preloaded route information and or preloaded destination information. The information may be provided in a stepwise, complete or other fashion.

[00208] In an embodiment, voice recognition software may be employed to provide the traveler with a convenient way of loading route and or destination information. For example, a traveler may be on the road and call into a monitoring system to load a destination facilitated by voice activation. The destination may include a street address, phone number or other indication of the destination. In an embodiment, the traveler may use a phone keyboard to load the phone number of the desired destination. The monitoring system may then look up the corresponding address to provide route and or destination information. Once the route and or destination information are loaded, the traveler may connect with the monitoring system for directions, time estimations, traffic conditions or other information.

[00209] In an embodiment, a traveler may request directions to a type of destination (e.g. gas station, coffee shop, Dunkin Donuts, Star Bucks, shopping center, Hotel) to a monitoring system. The system may locate the traveler and provide directions to the destination chosen. For example, the system may accept voice commands to identify the destination type. The voice commands may direct a menu and or be recognized as types of destinations. In another example, keys of a phone may be used to select types of destinations from a menu.

[00210] In an embodiment, a user may call into a information system, identify a destination, and provided directions or other route information. For example, the user may use a cell phone to call an information system (e.g. 411), identify a business or residence along with approximate location (e.g. state and town), and then be provided directions to the specific location. In an embodiment, the directions may be provided from the user's cell phones location. For example, a traveler may be traveling to the YMCA in Danvers, Massachusetts and require assistance in getting to the location. The traveler may use his cell phone to call 'information' asking for directions to the YMCA in Danvers, Massachusetts. The system may be used to look up the street address of the YMCA, identify the travelers location (e.g. through cell phone triangulation or gps) and

provide directions from the travelers present location to the YMCA destination. In an embodiment, the directions may be provided in total so the traveler can disconnect from the system. In an embodiment, the directions may be provided in stepwise fashion, guiding each sep of the traveler's route (e.g. "take next right at Main St."). In an embodiment, the direction instructions may be altered to accommodate unforeseen obstacles (e.g. the traveler misses a turn, encounters construction, or detours).

[00211] While many of the embodiments illustrate direct communication with the route information facility (e.g. cell phone communication to the route information facility) embodiments may include communication through other facilities. For example, the cell phone communication may occur through the location facility and the location facility may be associated with the route information facility. There are many such variations envisioned by the inventors and such variations are included in various embodiments.

[00212] In embodiments, the route information facility may be associated with a route prediction facility. A route prediction facility may be a facility used to predict route performance based on current and or past route and or associated route performance.

[00213] Fig. 40 illustrates a portable communication facility 4000 according to the principles of the present invention. In embodiments, a portable communication facility 4000 may be a cell phone, mobile phone, walkie talkie, satellite phone, pda, web device, Blackberry device, email device, web browsing facility, in-vehicle communication facility, in-vehicle navigation facility, in-vehicle information facility or other facility used for mobile and or portable communication. In embodiments, the portable communication facility may include a display facility 4006, a keyboard 4008 (e.g. numbered key on a phone, or alpha-numeric keys of a pda), and an antenna 4002 to facilitate communications with other facilities using wireless communication techniques.

[00214] In embodiments, a portable communication facility 4000 may be used to communicate with a route information facility 3904. For example, a cell phone may be used in one or two-way communication with the route information facility 3904. An example of two-way communication may be when the cell phone is used to connect with the route information facility and facilitate communication of a query (e.g. dialing 411

and requesting information pertaining to a location) and the phone is also be used to receive information pertaining to the query. For example, the route information facility may communicate directions to a location from a present location of the traveler through audio communication (e.g. directions the traveler can listen to on his cell phone). The route information system may also communicate directions, or other route information, through display signals. For example, the directions 4010 information may be communicated to be displayed on the display facility 4006 of the cell phone or pda or other facility. This way the traveler has a visual indication of the directions.

[00215] In embodiments, the cell phone, or other portable communication facility, may be used in one-way communications, either sending or receiving. For example, the cell phone may be used to facilitate an initial query (e.g. get me directions to the location) but the directions may be sent to another facility. For example, a vehicle may be equipped with a travel information system, LCD screen, or other facility with a display facility and the direction information may be sent to the vehicles display. In an embodiment, an association between a users cell phone and vehicle system may be made to facilitate communications to the vehicle following a cell phone initiated communication. In an embodiment, the receiving facility may be another portable communication facility (e.g. pda). Again, an association may be made between portable communication facilities to facilitate the directions of the communications.

[00216] In an embodiment, a traveler may request directions or other route information from a route information facility without the assistance of an automatic location facility. For example, a traveler may connect to the route information facility via a portable communication facility (e.g. a cell phone) and request directions or route information from a location the traveler identifies to the route information facility. For example, the traveler may know his location (e.g. corner of Main St. and Elm St., in Danvers, MA) and instruct the route information facility of his present location along with his desired destination. In embodiments, the traveler may speak this information, write, type, key or other communicate the information. In embodiments, the route information facility may receive the information via human interaction, automatically or semi-automatically. For example, a human may receive the information, or a voice recognition facility may be used. The route information facility may be manual,

automatic or semi-automatic itself in an embodiment. For example, it may receive information through human interaction, the person may look up travel, route, or direction information on a computer facility (e.g. www.mapquest.com) for directions per the given location and destination, and the person may communicate the information back to the traveler.

[00217] Fig. 41 illustrates an in-vehicle communication facility 4102 according to the principles of the present invention. In embodiments, the in-vehicle communication facility 4102 is mounted on or in the vehicle, 4100. The in-vehicle communication facility 4102 may include a display facility 4104 where route information and or directions may be displayed. The in-vehicle communication facility 4104 may also include a user interface 4108. For example, the user interface 4108 may be used to initiate contact with a location facility and or a route information facility. The in-vehicle communication facility 4104 may also include an audio system 4110 adapted to receive (e.g. a microphone) and or transmit (e.g. a speaker) audio information.

[00218] An aspect of the present invention relates to systems and methods used to communicate information from a telephone answering facility. In embodiments, information from a telephone answering facility is communicated (e.g. as a result of a user prompt or call) through digital data that can be received and viewed as text, image, and or other visual content through the use of a communication platform (e.g. a mobile communication facility, a cell phone, pda, BlackBerry®, PalmPilot®, remote communication facility, landline communication facility, wireless communication facility, in-vehicle communication facility, in-vehicle navigation facility, in-vehicle information facility, or desktop communication facility.). In embodiments, the information may contain and be formatted to be received and retrievable through an audio reproduction facility (e.g. a cell phone). For example, a user may use a cell phone to call an answering facility to request information. Information may then be communicated by the answering facility to the cell phone. The information received by the cell phone may include text, image and or sound information. The information may then be stored in the cell phone, or in another associated facility (e.g. remote memory location accessible by the cell phone). The user of the cell phone may than be able to

retrieve the information and read the text, view the image, and listen to the audio information provided.

[00219] In embodiments, the information communicated from the telephone answering facility to the communication platform may include information pertaining to a business, retailer, residence, home, or other establishment associated with the telephone answering facility. For example, the information may include information pertaining to the location of a store, directions to a location, sale information, coupon information, hours of operation, inventory, item selection, movie times, cost information or other desired information. For example, a user may call a store to get directions and an answering facility may respond (e.g. automatically or through a user prompt) by sending information to the user's cell phone for user viewing. The user can then view the information and or store the information for later viewing. The user may open a message or file to retrieve the information. In embodiments, directions provided may be generic directions (e.g. from a known landmark, roadway or highway), user location specific directions (e.g. based on the triangulation or gps coordinates of the cell phone), navigation, user specific directions based on typical route conditions, based on current route conditions, based on the telephone answering facilities desired route conditions (e.g. to avoid sending the user on routes that include certain competitors or other undesirable or desirable landmarks), and or based on other relevant information. In embodiments, the information includes links to webpages and or other information pages. In embodiments, the information includes forms, selectors, or other areas where user provided information can be loaded and or selected in order to be communicated back to the telephone answering facility or other facility. For example, a user may call the theater and the answering facility may respond by sending information to the users cell phone. The information may include information pertaining to currently running shows. The user may view and or listen to the stored information and decide to purchase tickets for this evening's show. The user then makes the appropriate selection on his cell phone and transmits his ticket request back to the answering facility or to another facility he is directed to. In response, the user may receive information pertaining to his ticket purchase on his cell phone or at another facility.

[00220] Fig. 42 illustrates a system for communicating with a telephone answering facility 4202 wherein information 4210 is communicated in a format to be viewed and or listened to through the communication platform 4204 (e.g. a cell phone) according to the principles of the present invention. In this embodiment, a user may use the communication platform 4204 to call or otherwise initiate or establish communication with the telephone answering facility 4202. The telephone answering facility 4202 may communicate information to the user through real-time voice communication. The real-time voice communication may include the presentation of menu options (e.g "say or press one for store information) or through an automated information response (e.g. provided information without prompt). For example, the answering facility may respond to the call with a menu indicating the user should press one in order to receive an information download to his cell phone or other communication facility. The user may then communicate the selection of the digit one 4208 to the telephone answering facility 4202. The telephone answering facility 4202 may then communicate information to be received and stored on the cell phone or other facility 4210. This communication may be take place while the user continues on the voice call or at some time following the call. The communication 4210 from the answering facility may be in a form to be received and viewed on the cell phone. For example, it may be a text message, a short message, an email message, a webpost message or other format intended to be viewed through a viewing facility. The information 4210 may also include images (e.g. a .jpeg file), pictures, video, or other image information. The information 4210 may also include audio information (e.g. an mp3 file). In embodiments, the audio information may be associated with the text and or image information provided.

[00221] In embodiments, once the information 4210 is received by the cell phone 4204, the information may be stored in the cell phone for later retrieval. For example, the information may be stored and associated with the address book or other list in the phone. The information may pertain to a store (e.g. a bike store, grocery store) and the user may store the information in a file associated with the cell phone contact list. When the user wants information pertaining to the bike store, he calls it up through the name associated in the contacts list. He may then be able to view all or a portion of the information associated with the name listed in the contact list.

[00222] In embodiments, the information stored on the cell phone may also include a feature for updating the information. For example, the information may include an 'update' button (e.g. a software generated icon) and the user may update the information through a click or otherwise activate the update button. Once activated, the phone may initiate communication with the original answering facility or other update facility to retrieve update information. In embodiments, the information provided may include direction information and the directions may be provided from the cell phones location (e.g. through gps coordinates and map comparison). The user may choose to update the information based on his new location. For example, the user may want to receive written or audio directions to a store or other location, so he calls the answering facility and downloads direction information based on his present location (e.g. based on his cell phone location). Once he is underway, he may review the downloaded information. If he gets lost, runs into traffic or otherwise wants updated information he may select an update feature or call the answering facility again to receive updated directions from his new location.

[00223] In an embodiment, the information may contain sale or coupon information and the user may choose to get updated information pertaining to sales or new coupons from time to time.

[00224] In an embodiment, the telephone answering facility may retain information pertaining to what devices or what persons it has delivered information to and the telephone answering facility or other update facility may communicate updated information to the previously contacted devices with updated information. In embodiments, this update procedure may occur automatically, at predetermined time(s), when information is updated, when there is new sale or coupon information, or at other times determined by either the operators of the answering facility or the user. For example, the telephone answering facility may automatically (e.g. non-caller prompted) communicate updated sale, coupon, direction, phone number or other information to a cell phone that was once used to collect information. In an embodiment, the information may be delivered without notification to the cell phone user. In an embodiment, the information may be delivered along with an alert to the user that new sale information has been loaded. In an embodiment, the new information may be displayed on the screen

of the users communication facility and or stored in the facility for later viewing. By way of example, information pertaining to a sale may be communicated to a users cell phone. Information pertaining to the sale may be displayed, in either summary form or in its entirety, on the cell phone display. The information may also be stored on the cell phone and associated with the information or replace the information already in the cell phone. The information displayed on the screen may also include a link to further information stored on the cell phone or information stored in a remote location. For example, the information may contain a hyper link to the store's website or to a file on the cell phone.

[00225] Fig. 43 illustrates a method of retrieving information from a communication answering facility wherein the download of information is facilitated by a cell network 4302 according to the principles of the present invention. In this embodiment, a communication platform 4204 may be used to communicate a request 4208 through a cell network 4302 to a communication answering facility associated with a business, residence, office, or other such establishment (e.g. a bike store) 4304. The information request 4208 may be communicated through the cell network 4302 and transmitted to the answering facility associated with the bike store 4304. In response to the request, the answering facility may download or otherwise communicate information through the cell network 4302 back to the mobile communication facility (e.g. cell phone) 4204. As previously described, and by way of example, the downloaded information may be in a format to be viewed through the cell phone.

[00226] Fig. 44 illustrates a method of retrieving information from a communication answering facility wherein the information request is fulfilled in coordination with a location-based service 4402 (e.g. a cell phone location triangulation facility, gps location facility) according to the principles of the present invention. In this embodiment, a user uses his cell phone, or other communication platform 4204, to communicate through the cell phone network 4302 to an answering facility associated with the bike store 4304. The ownership of the bike store would like to provide location and direction information to the user, so the answering facility is configured to communicate location and direction information to the users cell phone. The information is formatted to be received and stored and or viewed by the user through the cell phone. In an embodiment, the location and direction information may be provided in a generic

form. For example, the location and direction information may include an address, phone number and directions from a local landmark, roadway or highway (e.g. "when coming from Boston …" or "when coming from the north …" or "when coming from Route 95 …"). In an embodiment, the location and direction information may be provided from a specific location. For example, the location of the cell phone may be determined through a location-based service 4402 (e.g. gps location service, or cell phone triangulation location service) and the directions from the cell phones present location may be determined and provided through a text message or the like. The text message may read like a set of instructions from the users present location. For example, "go straight on Elm St for 1.8 miles, turn right on Main St. for 0.4 miles, take Route 95 north to Exit 38 …" The user may store these directions and call them up to read while in transit. In an embodiment, the cell phone is equipped with an audio system adapted to read the directions back in either complete or stepwise fashion. In an embodiment, the direction page, or associated page, may be equipped with an update facility wherein the user can update the directions. For example, the user may now be in a location in-route, be lost, or coming from another location and want updated information. The user could call the answering facility for updated directions, or activate the update facility to automatically update the directions from the users present location.

[00227] In an embodiment, the location and direction information may be provided from a user specified location. For example, the user may type, speak, or otherwise load a starting location (e.g. 11 Market St., Frenchtown, MI) into the system and the telephone answering facility may send directions based on the loaded location.

[00228] In embodiments, the directions communicated to the cell phone 4204 in coordination with the location based service 4402 are provided in such a way as to provide real-time directions. For example, once the location and destination are determined the location-based service 4402 stays in communication with the cell phone, either directly or in-directly, to provide real-time direction information. The information may be provided in a stepwise fashion to provide real-time directions from street to street for example.

[00229] In an embodiment, the directions may be provided from the users present location (e.g. as determined through cell phone location services) and the

directions may be based on route specific information. For example, the route specific information may include real-time route conditions, quasi real-time route conditions, typical route conditions, fastest route, shortest route, route based on competition's location, route based on the most attractive route or other information. In an embodiment, the destination and origin of the route are determined and the route conditions are determined through the systems and methods described in the present disclosure. The user may be provided with a menu to determine how he would like the direction information presented (e.g. based on typical traffic versus generic directions) or the system may make the determination (e.g. with the intention of driving the customer in a path away from his competitor).

[00230] Fig. 45 illustrates a method of downloading information from a portable communication facility 4204 to an in-vehicle location facility 4102 according to the principles of the present invention. In an embodiment, a user may use his cell phone to download direction, location, map, or other information from a remote source and then download 4502 the information, of part of the information, to an in-vehicle location facility 4102. For example, the user may use his phone to communicate with an answering service to download stored location information pertaining to a store, office, or residence. The user may then want to use that information in his in-vehicle location and mapping facility. The user then downloads 4502 the stored information from the cell phone to the in-vehicle system such that the in-vehicle system can use the information. In an embodiment, a user may also download maps, map files, or other map information to be communicated to the in-vehicle system.

[00231] Fig. 46 illustrates an answering service facility 4600 according to the principles of the present invention. In an embodiment, the answering service facility 4600 includes a facility for receiving calls from a communication platform 4604 (e.g. a cell phone). For example, the answering service facility 4600 may include a receiving facility for receiving calls through a cell phone network facility, land-line facility, computer network facility, voice-over-IP facility, or other facility designed to provided connectivity between the answering service facility and a communication platform 4604. The communication platform 4604 may include a database 4608. In embodiments, the answering service facility 4600 may in a database 4610. In embodiments, the answering

service facility 4600 may be associated with a network and or other computer system 4614.

[00232] In embodiments, a user may use a communication platform 4604 (e.g. a cell phone) to communicate with an answering service facility 4600. The user may initiate communication with the answering service facility 4600 by calling an access number (e.g. phone number of a store) and the answering service facility may respond by presenting an automated menu of options to be listened to and or selected. One such menu option may be to download information. For example, the option number one may be to download information relating to the dialed number (e.g. store information, business information, or residence information). The user may select this menu option and the information may be downloaded to the cell phone. The information may be downloaded as a text file, email file, short message file, voice file, image file, picture file, cookie or other file or message. The information may pertain to store information, residential information, business information, corporate information, sale information, weather information, show information, time information, distance information, location information, direction information, congestion information, airport information, wait time information, security information, advertisement information, phone number information, web information, map information, closest store information, inventory information, store item information, price information, coupon information, coupon with expiration information, or other information.

[00233] In embodiments, the communication platform 4604 is associated with a sensor or location based facility (e.g. a gps location system, cell phone triangulation system). The location based facility may provide information pertaining to the location of the communication platform and or information pertaining to another facility's location. The location based facility may also provide information pertaining to routes, directions, route conditions, map information, or other information desirable by the user.

[00234] In embodiments, the communication platform 4604 includes a database 4608. The database 4608 may be an internal or external database adapted to store and retrieve information. For example, the user may download certain information (e.g. directions) from an answering service facility 4600 and store the information on the database 4608. The user may also later retrieve the information stored on the database

4608. In embodiments, the data stored on the database 4608 may be text, image, picture, voice, or other data.

[00235] In embodiments, the answering service facility 4600 includes a database 4610. The database 4610 may be used to store and or retrieve information. For example, the database 4610 may be used to store and retrieve information pertaining to competitors locations, traffic congestion, roadwork information, web information, customer information, customer purchasing habit information, wealth information, personal preference information, store preference information, advertisement information, coupon information, sale information, inventory information, item information, hours of operation, location information, general information, ticket information, event information, residence information, office information, emergency information, weather information, attendance information, crowd information, delay information, menu information, option information, financial information, text information, visual information, audio information, or other information.

[00236] In embodiments, the answering service facility 4600 communicates to another computing facility 4614. The communication to the other computing facility 4614 may be through wired, wireless, networked, direct connection or other method of communication. The other computing facility 4614 may be used to calculate, process, derive or otherwise manipulate data. For example, the other computing facility 4614 may be used to process information retrieved from the answering service facility's 4600 database 4610 or from the communication platform 4604 or other facility.

[00237] In embodiments, communication between the communication platform 4604 and the answering service facility 4600 may include data over voice communication. For example, a user may be communicating with the answering service facility 4600 via voice communication while at the same time receiving, or transmitting, data from (or to) the answering service facility 4600. This technique may be used to facilitate perceived quick downloads. In embodiments, the information download may start automatically such that even prior to the request for information, information is being downloaded.

[00238] In embodiments, the answering service facility 4600 communicates via a separate data transfer or file transfer. In embodiments, the transfer may follow the

termination of the voice call. For example, a user calls the answering service facility 4600, requests information, and then terminates the call. The answering service facility 4600 may then follow with a separate text message, or some other form of message, to the phone that was used to make the request (or to another facility if so directed).

[00239] An aspect of the present invention relates to an answering service facility adapted to respond in a pre-configured manor upon recognition of a caller identification. In embodiments, an answering service facility is adapted to recognize certain callers through their caller id number (e.g. their phone number). Once an answering service facility recognizes the caller id, it may react in certain pre-loaded ways. For example, a user may use his cell phone to call his home answering service facility and the home answering facility may recognize the phone number as the home owner. The answering service facility may then communicate with the user as the homeowner by, among other things, presenting the user with a menu of items or actions that can be performed. For example, the provided menu may allow the playback of messages, personal messages, record a message, receive a data download, receive location information, associate the answering service facility with another facility, direct calls, forward calls, direct saved messages, re-direct saved messages or provide for other actions.

[00240] In embodiments, an answering service facility is configured to download information to a users portable communication facility upon the recognition of an access code. In embodiments, the access code is determined through caller id, or other automatic recognition methods. In embodiments, the access code is entered by a user. For example, the user may speak, type, or otherwise enter an access code that the answering service facility is adapted to recognize.

[00241] In embodiments, the answering service facility is adapted to access another computing facility and download information from the other computing facility. For example, a person may load information on his home computer and want to access it at a later time. By calling the answering service facility and entering the access code, or having it automatically recognized, the user may be able to instruct the answering service facility to access the information and have it downloaded. A user may store a packing list, grocery list, personal list, word file, text file, excel file, data file, image, picture,

graphics, or other information on the second computing system for retrieval through the answering service facility. In embodiments, such information may be stored directly on the answering service facility or a database associated with it.

[00242] Referring again to fig. 46, the communication platform 4604 may communicate with the answering service facility 4600 and access information from the computing facility 4614. In an embodiment, the computing facility 4614 may be integrated into the answering service facility. A user may use this communication method to access, review, send, redirect or otherwise use the information on the computing facility. For example, the user may access the computing facility and send a file (e.g. shopping list) to another facility (e.g. store, ordering facility or website).

[00243] An aspect of the present invention relates to systems and methods of communicating digital information associated with print advertisements and other print material. In embodiments, a communication platform is used to receive digital information from another communication facility associated with the print material. For example, a print advertisement (e.g. a magazine advertisement) may include an RFID transmitting facility and a portable communication facility (e.g. a cell phone) may be used to interrogate the RFID transmitting facility to receive information stored in the RFID transmitting facility.

[00244] Fig. 47 illustrates a communication platform 4702 that includes an RFID interrogation facility to communicate an interrogation signal 4708 according to the principles of the present invention. The interrogation signal 4708 may be directed to activate an RFID tag 4712 associated with a print advertisement 4704. The print advertisement 4704 may be an advertisement, or other information, in a newspaper, magazine, book, paper, or other print. The information stored in the RFID tag may include advertising information, location information, coupon information, store information, access information, ticket information, phone information, direction information, web information, instruction information, or other information. For example, a user may open a phone book and find a business he is looking for. He uses the interrogation facility in his cell phone to extract information from the RFID tag associated with the business' advertisement and store it on his phone. The information may then be associated with the address book in the phone and retrieval of the

information may be obtained through the address book. In another example, a person may be reading a magazine or newspaper and he may see some information he would like to save or otherwise use. He then uses his interrogation facility to extract the information stored on an associated RFID tag for use and or later retrieval.

[00245] Fig. 48 illustrates an electronic information repository with a display 4802 and a communication platform 4804 adapted to communicate with the information repository 4802 according to the principles of the present invention. In embodiments, the communication platform 4804 may communicate directly with the information repository (e.g. through wireless, IR, RF, flashing sequences on the display). In embodiments, the communication platform 4804 may communicate in-directly with the information repository (e.g. through a computer network or cell network). The information repository may include information pertaining to advertisements, locations, directions, or other information.

[00246] Fig. 49 illustrates an embodiment where a telephone answering service facility 4202 is in communication with other systems to facilitate the communication of information. For example, the telephone answering facility 4202 may be associated with the internet 4902 or other network. The telephone answering service facility may access information or provide information to a number of other facilities associated with the internet 4902. For example, one or more distributed navigation servers 4402 (e.g similar to that disclosed in connection with U.S. patent 6,615,131 and or 6,405,123, both of shich are incorporated by reference herein) may be associated with the internet and may provide and or receive information from the telephone answering service facility 4202. One or more other computing facilities 4904 may be associated with the internet and provide or receive information from the telephone answering service facility 4202. In embodiments, a mobile communications network 4302 may be associated with the telephone answering service facility directly and or through the internet 4902. While this embodiment is described in connection with communications facilitated through the internet, or network in general, it should be appreciated that one or more or all of the described facilities may be combined and or directly associated in an embodiment and such variants are encompassed by the present invention.

[00247] Continuing the discussion related to figure 49, by way of example, a user may use his mobile communication facility 4204 (e.g. cell phone, mobile phone, satellite phone, internet phone, network phone, portable communication facility, wireless phone, pda, combination pda/mobile phone, Palm® system, Blackberry® system, in-vehicle communication facility, in-vehicle navigation facility, in-vehicle information facility) to call a store, company, residence or the like and the automated telephone answering service facility 4202 may respond to the call. In embodiments, the mobile communication facility may be adapted with navigation software and interact with external computing systems to provide the user with navigation and or directions (e.g. similar to that disclosed in connection with U.S. patent 6,615,131 and or 6,405,123, or similar to the mobile Navigation products offered through Nextel®) The user may then be presented with a menu of options, asked for voice prompts, or otherwise engage in a interaction with the automated telephone answering service facility 4202. One such interaction may be to provide the user with directions, navigation, route information, store information, traffic, inventory or the like (e.g. such as that described herein). Upon request, or through automatic download, the telephone answering service facility 4202 may provide the information in a number of ways. In embodiments, the telephone answering service facility responds by communicating the information directly to the cell phone user (e.g. through text messages, route information, navigation instructions). In embodiments, the telephone answering service facility 4202 may operate locally or within an intranet to collect and communicate the information. In another embodiment, the telephone answering facility 4202 may communicate through the internet 4902, or other network, to gain information from one or more of the distributed navigation servers 4402 and or another computing facility 4902. In another embodiment, the telephone answering service facility 4202 may receive the call from the user's mobile communication facility 4204 and then send the call and or call information, possibly along with other store information, to one or more of the distributed navigation servers 4402. The distributed navigation servers 4402 may then communicate directly with the user through the mobile communication facility 4204. In an embodiment, a traffic information facility may be associated with the network of devices to provide or receive traffic information.

[00248] Figure 49A illustrates a process for presenting a mobile communication facility user with information 4908. In this embodiment, the process begins with a user requesting information 4910. For example, the user may use his mobile communication facility to connect with a navigation facility, other route information facility, telephone answering service facility, or other computer facility. Once the user has requested information (e.g. navigation, route or store information), relevant information is collected 4912. For example, information maybe collected from several sources 4914, such as collecting the user's location (e.g. through a gps location facility) 4914A, collecting store, corporate, or residential information 4914B, route and or traffic information 4914C, navigation information 4914D (which may be interrelated with the traffic and or route information 4914C), and or special information relating to the user's request (e.g. special local navigation instructions, special local information). Once the information is collected, the information may be processed to create a format presentable to the user 4920. Then, the information may be presented to the user 4922. In the presentation of the information, real-time navigation may be presented and or other route information, directions, store information, sale information, contact information, or other desirable information.

[00249] An aspect of the present invention relates to systems and methods of providing navigation systems, route information systems, and the like with destination information. In embodiments, the destination information may be provided through various sources to make it convenient for a user of such route and navigation systems to load the desired destination. In embodiments, these systems and methods maybe useful in providing customers, friends, business colleagues, or others with information pertaining to the destination. For example, figure 50 illustrate several systems and methods for loading destination information into such systems. In this embodiment, the user may call a telephone answering service facility 4202 and the telephone answering service facility 4202 may provide destination information to a navigation or route information facility 4402 (e.g. as described herein above). The information may contain the location of the store, company, residence or the like that the telephone answering service facility 4202 is associated with. In embodiments, the information provided by the answering facility 4202 may include information unrelated to directions, route

information, or navigation information. For example, the answering facility 4202 may provide information relating to the business or residence the answering facility 4202 is associated with (e.g. sales information, inventory, special directions, hours of operation). In embodiments, the user may use his mobile communication facility 4204 to receive a transmission 5010D from another source, scan information 5010C, type or key in information 5010B, and or speak information 5010A and then transmit this information to a navigation and or other route information facility 4402. The information may come from books, print ads, other mobile communication facilities or other sources external to the communication device that contains the desired information.

[00250] In embodiments, a user may use his mobile communication facility 4204 to communicate with websites 5008 and gain information from the websites that can be used by the navigation and or other route information facilities. For example, a user may gain access to websites relating to a restaurant guide, business guide, google.com (or other search engine), a news site, an advertisement, a corporate site, retail site, restaurant site, or other websites that contain destination information. In embodiments, once the site is accessed, the relevant information may be extracted and communicated to the navigation and or other route information facility 4402. The information may flow back to the phone and then to the navigation facility or it may flow without the aid of the phone. Once the destination information is loaded into navigation facility, the navigation facility may assess the location of the cell phone (e.g. through gps and or cell phone triangulation techniques) to then calculate a route, provide navigation, provide traffic information, alternative route information or other information described and or encompassed by the present invention.

[00251] In embodiments, a user may enter location/destination information into an address book in the user's mobile communication facility and the information from the address book may be communicated to a navigation facility and or other route information facility. For example, the user may receive a transmission including the location information from an external source and load it into his address book for later submission to a navigation and or other route information service. In embodiments, the transmission may come from another mobile communication facility, an RFID tag (e.g. an RFID tag associated with a product, advertisement, sales information) or other source

of transmitted information. In an embodiment, the user may use a voice recognition system in the mobile communication facility to recognize the location and or destination information. In embodiments, this information may then be directly transmitted to a navigation and or other route information facility. For example, the information may be recognized and organized in a format compatible with the navigation / route information facility and the navigation / route information facility may provide the user with navigation and or other route information through a transmission to the mobile communication facility. In embodiments, the user may be using a mobile communication facility that is associated with a scanner (e.g. incorporated into the mobile communication facility, or separate from but associated with the mobile communication facility) and the user may use the scanner to scan and load location / destination information into the mobile communication facility for transmission to a navigation and or other route information facility. In embodiments, the scanned information may be loaded into an address book in the mobile communication facility for later transmission to a navigation and or other route information facility.

[00252] Figure 51 illustrates a screen shot 5100 from a mobile communication facility according to the principles of the present invention. In embodiments, a user may use a mobile communication facility to access information from a telephone answering service facility (e.g. as described in connection with other embodiments herein) to download information relating to navigation, route, store, business or other information related to the business, residence, corporation, and or location with which the telephone answering service facility is associated. As described herein above, in embodiments, the telephone answering service facility may then communicate information to the user directly, through a route information and or navigation facility, or in coordination with another facility, such as a route information and or navigation facility. In embodiments, the information provided to the user may include a corporate logo 5102, trademark, service mark and or other tag line 5104, and or a menu of options 5108. In embodiments, the menu of options may be links to websites and or connections to information stored locally (e.g. connections to information that has been downloaded). For example, the menu may include connections to directions / navigation / route information 5108A, store and or corporate or residential information 5108B, sale / inventory information 5108C,

store or corporate directory (e.g. names, departments, contact information) 5108D, video information (e.g. corporate video, retail video, home video, advertisement, sales video) 5108E, contact information 5108F and or other connections to useful information.

[00253] Figure 52 illustrates a screen shot 5200 from a mobile communication facility according to the principles of the present invention. In an embodiment, the content provided may be separated into more then one screen, page, or display. In other embodiments, the content may be provided, or substantially provided, on a single screen, page, or display. In an embodiment, a scrolling facility may be available to allow the user to scroll through the content. In the embodiment illustrated in figure 52, the screen shot contains a logo 5102, trademark, service mark or other tag line 5104, header information 5202, directions, route information, and or navigation information 5204, special local directions, information and or navigation information (e.g. parking garage is located behind the building, enter and go to elevators on right, there is construction on the main road, so enter via secondary route on first avenue) 5208, and store, corporate, residential or other information relating to the location (e.g. sale information, advertisements, store directory, corporate directory, custom information for user) 5210.

[00254] In embodiments, the screen shot 5200 includes special local information 5208. This information may be collected and presented in a many ways, each of which is encompassed by the present invention. For example, a user may call a telephone answering service facility to obtain automated navigation and or other route information and the telephone answering service facility may collect and process the information to be provided to the user and then transmit the information to the user via his mobile communication facility. In embodiments, the telephone answering service facility coordinates the collection process and transmission through other facilities, such as those embodiments described in connection figures 49 and 50. For example, once the call is received by the telephone answering service facility, the telephone answering service facility may communicate the local information 5208, and the other location specific information (e.g. logo, trademark, header, special directions, store information), to the navigation facility and the navigation facility may present all of the information to the user such that it appears presented from a single source, possibly approved by the location he originally called. In another embodiment, the user may call, or otherwise

connect with, the navigation facility to request information on a store, business, residence, landmark or other location and the navigation facility may collect the local information discussed in connection with the embodiment of figures 51 and 52 to present it to the user.

[00255] An aspect of the present invention relates to systems and methods for providing secure location based services. In embodiments, location based services are provided through a mobile communication facility, such as a mobile cell phone or personal digital assistant. The mobile communication facility may be used to provide location information to another facility to complete a transaction, navigate, obtain location information, and or to perform other functions, for example. In embodiments, the mobile communication facility may be adapted with a security facility to provide secure and or limited access to the location information that may be obtained from the mobile communication facility. For example, the security facility may provide the user with a user interface that provides one or more selections of what other facilities, businesses, groups of businesses, people, groups of people, or otherwise identified or unidentified facilities are permitted to access the location information. In embodiments, the user is presented with a menu style option list. In embodiments, the security facility is presented as a spam filter or other similar screening facility. In embodiments, the security facility is implemented through an encryption facility, using, for example, a key system and or public/private key system or other key or permission style facility.

[00256] Fig. 53 illustrates a secure location based service process 5300 according to the principles of the present invention. In embodiments, the flow of location information to a location facility 5302 is regulated through the use of a security facility 5304 and a user interface 5308. In embodiments, the user interface 5308 and the security facility 5304 may be provided in another facility, such as a mobile communication facility for example.

[00257] An aspect of the present invention is a method or system for providing a secure location based service. The method may involve providing a security facility adapted with a user interface; and manipulating the user interface to select one or more security settings related to at least one location based service. In embodiments, the user interface is provided through a mobile communication facility. In embodiments, the

mobile communication facility comprises at least one of a cell phone and a personal digital assistant. In embodiments, the user interface provides a menu of options. In embodiments, the user interface provides a plurality of options wherein the plurality of options relate to at least one of different location based services, different entities, different people, and different locations.

[00258] Fig. 54 illustrates a secure location based service user interface 5400. The user interface 5400 may be presented through a mobile communication facility 5404 by providing a user with a software generated interface. In this embodiment, the user interface is presented with a menu of selectable and or alterable selections 202A-J. For example, link 202 may be provided to enable, disable, or otherwise control the access of the mobile communication facilities location. In embodiments, groups of people or entities are presented through a link. For example, a user may have a 'buddy list' where known people or entities are known and this group may be identified with link 202F. The user may enable or disable this group's access to information in the mobile communication facility (e.g. location information). Other group examples include work, colleagues, home, family, navigation facilities, direction facilities, traffic facilities, friends, agents, travel agent, lawyer, or other groups, entities, and or individuals. Links such as emergency and safety may also be provided to allow the user control of emergency and or safety facilities access to information. In embodiments, links to allow identified access 210 may also be presented. For example, the user may be presented with information that a someone is attempting to obtain information from the user's mobile communication facility and the user may then have the ability to enable or disable the access. The link 210 may also be programmed to provide the user with control over all access. For example, by enabling access through the link, the user may be granting everyone access or certain predetermined groups access to the information. In embodiments, the interface may include a link to control 'keyed' access where a request provided with appropriate key information may be controlled.

[00259] An aspect of the present invention is a method or system for providing a user interface for a secure location based service. The method may involve providing a mobile communication facility; and providing a user interface through the use of the mobile communication facility; wherein the user interface allows the selection of a

plurality of alternative security settings. In embodiments, the plurality of security settings includes categories of at least one of facilities, people, entities, and location services. In embodiments, the categories further provide the user the ability to selectively turn on or off another parties ability to access an associated location. In embodiments, the categories relate to at least one of friends, family, buddy list, address book, safety, emergencies, work, home, navigation, directions, travel agent, local environments, retail stores, corporations, advertisers, list of acceptable facilities to access the associated location, and list of not acceptable facilities to access the associated location.

[00260] An aspect of the present invention is a method or system for providing a user interface for a secure location based service. The method may involve providing a mobile communication facility; and providing a user interface through the use of the mobile communication facility; wherein the user interface provides access to an associated location following identification of a facility requesting access and permission being granted. In embodiments the requesting facility sends a request command to the mobile communication facility in an attempt to gain access to the associated location and the user makes a selection on a portion of the user interface to allow access; wherein upon approval of access, the mobile communication facility provides location information to the requesting facility or provides access to the location information to the requesting facility. In embodiments, the location information is provided through an encryption technique. In embodiments, the encryption technique comprises a public key private key protocol. In embodiments, the encryption technique comprises an encryption key protocol.

[00261] An aspect of the present invention is a method or system for providing a user interface for a secure location based service. The method may involve providing a mobile communication facility; providing a user interface through the use of the mobile communication facility; wherein the user interface provides the user the ability to turn keyed location requests on or off. In embodiments, the keyed location request is a private / public key request. In embodiments, the keyed location request is an encrypted key request.

[00262] Fig. 55 illustrates a process for providing secure location information transactions 5500 through the use of a user interface 5512 controlled filter 5504. In

embodiments, the process involves providing a filter 5504 adapted to filter acceptable location requests and unacceptable location requests. For example, the filter may be adapted to allow location information to be provided to certain facilities (e.g. a navigation facility with the designated key) and the location information (e.g. provided through a gps chip in a mobile communication facility) may be provided upon request 5510. The filter may be adapted to compare the requestor or type of information requested by an external facility with the acceptable conditions under which to provide location information and provide information when the appropriate conditions are met. Likewise, in embodiments, the filter may be adapted to disallow the providing of location information if the filter criteria are not met. In embodiments, the filter may be adapted to log the event and or information relating to the location information request in a notification log when information is requested. In embodiments the log may be set to record all requests, allowed requests, and or disallowed requests. In embodiments, the filter may be adapted to provide the user notification of the event and or information relating to the location information. In embodiments the log may be set to provide notification of all requests, allowed requests, and or disallowed requests. In embodiments, the notification 5510 may communicate a 'de-list' request to the requesting facility to request the location facility to remove the user from it's contact list or otherwise block future access requests. In embodiments, the de-list request may be communicated to another facility for reporting such request activity.

[00263] An aspect of the present invention is a method or system for providing secure location information. The method or system may involve providing a filter adapted to filter location requests; communicating a location request to the filter;

[00264] providing location information when the location request meets specified filter criteria; and not providing location the location information when the location request does not meet the specified filter criteria. In embodiments, the filter is adapted to be modified through a user interface. In embodiments, the filter is adapted to be used in a mobile communication facility. In embodiments, the method or system may further comprises logging information related to the location request. In embodiments, the method or system may further comprises providing an alert that location information was requested. In embodiments, the method or system may further comprises providing

an alert that location information that did not meet the filter criteria was requested. In embodiments, the method or system may further comprises providing an alert that location information that met the filter criteria was requested.

[00265] Fig. 56 illustrates a process for providing secure location information transactions 5500 through the use of an automatic filter 5602 for unwanted requests (e.g. a spam filter). In embodiments, the spam filter may examine the headers and or content of the request, and look for various features. Each feature may be associated with a score (which may be negative). The scores of all the features found may be totalled, and a higher total score may indicate that the message is more likely to be spam and as a result not allowed to pass and or the filter may be used to prevent location information from being communicated to the requestor. In an embodiment a request with a total score over some predetermined amount (e.g. 5) is filtered, and possibly logged or used to provide notification. In embodiments, the user may adjust this predetermined amount higher, to let in more location requests and block fewer legitimate location requests, or lower, to block more spam and risk blocking more legitimate location requests. In embodiments, a user may change the "spam score threshold" on his mobile communication facility, on a related facility, through an associated website facilitating spam filter settings, or the like. In embodiments the spam filter may use location request origin, the software used to send the request, what the request looks like, messages within the request, terms within the request, or other information related to the request as an indication of spam content. In embodiments, if the spam filter passes the request as legitimate, location information may be provided (e.g. from the gps location facility in a mobile communication facility) 5510. In embodiments, if the spam filter does not pass the request as legitimate, a notification may be sent to the user, and or the request may be logged 5508.

[00266] Fig. 57 illustrates a process for providing secure location information 5700 in coordination with a key facility 5704. In embodiments, the process involves receiving a location request with key information 5702, upon receipt of the key information, the key information may be compared with acceptable keys 5704. In the event the keys match, the location information may be provided 5510. In the event the keys do not match, the location information may not be provided and the request may be logged and or a notification of the request may be provided to a user. There are many

techniques envisioned and encompassed by the present invention relating to providing location information to known users or users with approved access. Embodiments involve receiving location information requests through the use of passwords, digital signatures, private keys, public/private keys and or other techniques useful in identifying the source of the request and or identifying the approval level of the request/requestor.

[00267] Embodiments involve encrypting the request and or the location information being requested. For example, a cryptographic system that uses two keys -- a public key known to everyone and a private or secret key known only to the recipient of the request. In embodiments, the private key may be used to accept the in-bound request and or be provided with the requested location information. For example, a location service may request the location of a mobile communication facility and the request may be accompanied by key information 5702. The key information may have been previously obtained from the user of the mobile communication facility or otherwise obtained authorized key information. Once the location information is received by the mobile communication facility along with the key information, the mobile communication facility may compare the received key information with the user's key information 5704. If they match, or otherwise indicate authorized access, the location information associated with the mobile communication facility may be provided to the service requesting the location information 5510. In the event the location request does not come with key information or appropriate key information, the location information may not be sent. The unauthorized request may also be logged and or a notification of the request may be communicated to the user of the mobile communication facility 5508. In embodiments, the key compare may be done through a facility other than the mobile communication facility. For example, the location information request may be communicated through another computing facility where the compare is completed. Once completed, an approved request may be communicated to the mobile communication facility.

[00268] Fig. 58 illustrates an embodiment involving user approval prior to providing location information from the user's mobile communication facility. For example, an external facility may request location information from the mobile communication facility 5802. The user may then be notified of the request 5804. The

user may then review the information request, requestor information, or other information relating to the request to decide if he wants to provide the location information. The user may then interact with a user interface, on the mobile communication facility for example, to either permit or not permit the information to be communicated 5808. If he accepts the request, the information may be provided 5510. If he denies the request, the information may not be provided and the request may be logged and or other notifications may be provided.

[00269] Fig. 59 illustrates a cell phone tower communication progression method and system according to the principles of the present invention. In embodiments, a location facility may locate and or track the location of a mobile communication facility (e.g. a cell phone or in-vehicle communication facility). In embodiments, the methods and systems involve tracking the position of mobile communication facilities and identifying the best cell phone tower to be used. The evaluation of which cell tower to use may involve proximity to the towers and or prediction of progression of proximity to towers. For example, a mobile communication facility may be used in a vehicle and the vehicle 5904 may be traveling on a roadway. A location facility may track the location of the mobile communication facility and compare its location with one or more cell phone towers 5902A-C. The location system may also predict the path of the vehicle (e.g. by assessing what road they vehicle is on and the most likely progression), and predict which tower is going to provide the best service. in embodiments, the hand-off from one tower to another made be made at least in part by considering the mobile communication facility location, progression, and or predicted path.

[00270] Another aspect of the present invention relates to an automated telephone answering system (e.g. an integrated voice response system (IVRS)) with improved communication and navigation. In embodiments, the automated telephone answering system communicates with a web service and can transfer a received phone call to the web service. The web service can likewise transfer the call back to the answering system and or to a human operator for further interaction. For example, a user may use a cell phone to call a movie theater. The call may be answered by an automated telephone answering system and interact with the caller through a menu of options (e.g. "press 1 for …"). One of the options presented may be an option to interact further

through a web page or other graphical network facility. The user may make the web interaction selection (e.g. through voice prompts or through cell phone number interaction). Upon receipt of the instruction, the telephone answering facility may send an instruction to the cell phone and the cell phone may they connect to the targeted website for interaction. The website may contain information much the same as the information that was available through the voice prompts and or other information and or interaction options. For example, the web interaction page may present movie times and upon selection of a movie time, the user may be able to purchase movie tickets. In embodiments, the cell phone has an economic transaction facility incorporated to facilitate making the transaction of buying the tickets. In embodiments, thicket purchase information may also be downloaded to the phone and the phone may be used at the theater to provide the purchased ticket information back. In embodiments, the telephone answering system, and or the associated web interaction facility may present information to the cell phone user based on the cell phone user's location, which may be obtained through a location facility for example.

[00271] Fig. 60 illustrates an improved telephone answering system according to the principles of the present invention 6000. In embodiments, a mobile communication facility (e.g. cell phone) 6002 is used to call an establishment (e.g. business, store, residence, school, government office) and the call is received by an automated answering system (e.g. IVRS) 6004. The telephone answering system may respond to the call by providing an audio menu to the user of the phone (e.g. "press 1 for …"). One of the options presented through the audio menu may be to be connected to a web service for other options and or other and or further interactivity. For example, the answering system may respond by 'speaking' "press 5 to be connected to our web service." In embodiments, upon selection of the appropriate link (e.g. "5" in this example) the telephone answering system may redirect the phones communication to a web service. The web service may then download information to the mobile communication facility. The user of the mobile communication facility may then interact with the web service through the mobile communication facility. In embodiments, the web service may provide a link to transfer the call back to the telephone answering system. In embodiments, the web service may provide a link to be directed to a human

operator for further human interaction. In embodiments, the web service may provide an indication of the expected wait time on the human operator link if chosen.

[00272] In embodiments, a mobile communication facility 6002 may be used to initiate a call to an automated telephone answering system 6004. As illustrated in fig. 60, the mobile communication facility may also be used to directly interact with a web facility 6008 and or a human operator facility 6018. The call, or interaction, with one of the facilities may be passed, redirected, transferred, or otherwise coordinated by and or between the other facilities. For example, when the call is received by the telephone answering system 6004, it may coordinate the transfer of the communication to the web facility 6008 and or the human interaction facility 6018. Likewise, a call received by the human interaction facility 6018 may be transferred to the web facility 6008 and or the auto attendant 6004. Likewise, a web interaction may be transferred to the human interaction facility 6018 and or the auto attendant 6004.

[00273] Fig. 61 illustrates an improved telephone answering process according to aspects of the present invention. In embodiments, a mobile communication facility 6002 may interact with a telephone answering facility and audio information 6102 may be presented to the user of the mobile communication facility 6002. The information may be presented as a menu of options for example. One of the options presented through the audio presentation of menu options may be to be transferred to a web service or other facility where graphics information may be presented. In the example presented in fig. 61, the audible option for the transfer is option five. Once the user of the mobile communication facility selects option five (e.g. through a voice activation system or key activation system), the user may then be presented with information through a web service 6018 or other graphic user interface through the mobile communication facility. The transfer from the phone answering system to the web service may be provided through a connection facility 6104. The connection facility may be a system in the telephone answering facility, web facility, cell network, mobile communication facility or otherwise presented.

[00274] Fig. 62 illustrates a method of communicating with a telephone answering system and or a web service 6008. In embodiments, a mobile communication facility 6002 may be used to connect to an answering facility 6004 through a cell phone

network 6204. The call interactions may be directed to the web service (e.g. through systems an methods described herein). The communications redirection(s) may be handled through the cell network 6204, telephone answering facility 6004, the web service 6008 and or another facility (not shown).

[00275] In embodiments, a mobile communication facility may be associated with a location service (e.g. through a cell phone triangulation location facility, or a gps facility) and a telephone answering facility and or web facility may be adapted to provide information related or based on the location, route, predicted route, or other location information. For example, a caller may call a "1-800" number and be received by a national answering facility. The national answering facility may assess the location of the caller and present information related to his location and or options based on his location. For example, a national retailer, such as the Gap, has stores throughout the US and a national call center may receive a call, assess the location of the caller, and present information (e.g. store locations) based on stores in close proximity to the caller's location. For example, the information provided may include directions, store hours, and or sale information and the information may be presented for the store(s) nearest to the caller.

[00276] While the invention has been disclosed in connection with the embodiments shown and described in detail, various equivalents, modifications, and improvements will be apparent to one of ordinary skill in the art from the above description. Such equivalents, modifications, and improvements are intended to be encompassed by the following claims.

CLAIMS

1. A computer program product that, when executing on one or more computers, performs the steps of:
   - automatically receiving a current location; and
   - presenting a roadway map of an area proximate the current location, wherein the map includes at least one route from the current location to a destination based at least in part on a traffic condition, wherein the traffic condition is at least in part based on a plurality of cell phone speeds on the route, each of the plurality of cell phone speeds estimated through an assessment of multiple locations of each of the plurality of cell phones, as determined through electronic triangulation, wherein each of the plurality of cell phones further has a user initiated permission set to permit a requestor to obtain its location.

2. The computer program product of claim 1, wherein each of the plurality of cell phones communicates its respective locations through a cellular network infrastructure to a server for calculation of the traffic condition.

3. The computer program product of claim 1, wherein each of the plurality of cell phones communicates its respective speed through a cellular network infrastructure to a server for calculation of the traffic condition.

4. The computer program product of claim 1, wherein the current location is received following a confirmation of a user setting permitting the current location to be obtained by a requestor.

5. The computer program product of claim 1, wherein the user initiated permission is set through a user interface presented on a user device.

6. The computer program product of claim 1, further comprising, receiving a navigation request to assist a driver in navigating to the destination.

7. The computer program product of claim 1, wherein the plurality of cell phones is selected from a candidate set of cell phones in an area proximate the route.

8. The computer program product of claim 7, wherein the selection of the plurality of cell phones from the candidate set of cell phones is based at least in part on a comparison of a location of each of the plurality of cell phones to a location of the route.

9. The computer program product of claim 1, wherein the step of receiving a destination comprises automatically receiving the destination from source that is remote from a device on which the roadway map is presented.

10. The computer program product of claim 1, wherein the triangulation system includes a global positioning system (GPS).

11. The computer program product of claim 1, wherein the triangulation system includes cell phone tower triangulation.

12. The computer program product of claim 1, wherein the triangulation system includes both cell phone tower and global positioning system (GPS) triangulation.

13. The computer program product of claim 1, wherein the map includes a visual indication of traffic on the route.

14. The computer program product of claim 1, further comprising, providing an estimation of how much time is predicted to travel through the traffic condition.

15. The computer program product of claim 1, wherein the traffic condition is a historical traffic condition.

16. The computer program product of claim 1, wherein the historical traffic condition includes traffic information based at least in part on an event recorded at a time of the historical traffic condition, and wherein the at least one route from the current location to the destination is further based at least in part on a comparison of the event recorded at the time of the historical traffic condition and a currently occurring event.

17. The computer program product of claim 16, wherein the event is a weather condition.

18. The computer program product of claim 16, wherein the event is a time of day.

19. The computer program product of claim 16, wherein the event is a day of a week.

20. The computer program product of claim 16, wherein the event is a day of a year.

21. The computer program product of claim 16, wherein the event is a holiday.

22. The computer program product of claim 16, wherein the event is a type of road condition.

23. The computer program product of claim 22, wherein the type of road condition is roadwork.

24. The computer program product of claim 22, wherein the type of road condition is an accident.

25. The computer program product of claim 1, wherein the traffic condition is a real time traffic condition that represents traffic on the route at a time when the roadway map is presented.

26. The computer program product of claim 1, wherein the roadway map further comprising a second route to the destination such that a user can select the second route as an alternate route through a user interface.

27. The computer program product of claim 1, further comprising, presenting an estimated time of arrival at the destination based at least in part on the traffic condition.

28. The computer program product of claim 27, further comprising, receiving an intended leave time for the beginning of travel to the destination, and further comprising, presenting a user interface to adjust the intended leave time such that a user can understand an effect of leave time on estimated travel time.

29. The computer program product of claim 1, further comprising, presenting a user interface to save a future destination for future choosing, wherein the future choosing selects the saved future destination and forms the destination.

30. The computer program product of claim 1, wherein the route is further based at least in part on a prior recording of an actual route traveled from a

location proximate the current location to the destination by a user represented by a device at the current location.

31. The computer program product of claim 1, further comprising a warning system adapted to warn a driver traveling on the route of the traffic condition, wherein the warning is based on a proximity of the driver, as determined by the current location, to the adverse traffic condition.

ABSTRACT

[00277] Location technologies are combined with other information systems to provide augmented information for individuals such as a traveler in an automobile.

Document code: WFEE

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CVORACHA	SALE	#00000008	Mailroom Dt:	12/16/2015	503912	14971658
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PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number: 14/971,658

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY FEE($)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	70		N/A	
SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	300		N/A	
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	360		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	31 minus 20 =	* 11	x 40 =	440	OR		
INDEPENDENT CLAIMS (37 CFR 1.16(h))	1 minus 3 =	*	x 210 =	0.00			
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			200			
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				0.00			
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	1370		TOTAL	

APPLICATION AS AMENDED - PART II

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

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

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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
14/971,658	12/16/2015	3661	1370	IPHO-0001-U02-C01-C06-C01	31	1

CONFIRMATION NO. 7270

FILING RECEIPT

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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 submit a written request for a Filing Receipt Correction. 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**

Inventor(s)

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Power of Attorney: The patent practitioners associated with Customer Number 87084

Domestic Priority data as claimed by applicant

This application is a CON of 14/289,370 05/28/2014 PAT 9243927
which is a CON of 13/019,869 02/02/2011 PAT 8744761
which is a CON of 12/391,745 02/24/2009 PAT 7904240
which is a CON of 11/052,547 02/07/2005 PAT 7522995
which claims benefit of 60/541,990 02/05/2004
and claims benefit of 60/578,494 06/10/2004
and claims benefit of 60/617,857 10/12/2004

Foreign Applications for which priority is claimed (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see http://www.uspto.gov for more information.) - None.
Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.

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The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 14/971,658**

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Non-Publication Request: No

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**** SMALL ENTITY ****
Title

METHOD AND SYSTEM FOR PROVIDING TRAVEL TIME INFORMATION

Preliminary Class

701

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
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The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

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(Not for submission under 37 CFR 1.99)

Application Number	14971658
Filing Date	2015-12-16
First Named Inventor	Edward H. Nortrup
Art Unit	3661
Examiner Name	NOLAN, PETER D.
Attorney Docket Number	IPHO-0001-U02-C01-C06-C01

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	6480783		2002-11-12	MYR	
	2	6539080		2003-03-25	BRUCE, et al.	
	3	6539302	B1	2003-03-25	BENDER, et al.	
	4	6594576		2003-07-15	FAN, et al.	
	5	6611750	B2	2003-08-26	MACPHAIL, et al.	
	6	6615130		2003-09-02	MYR	
	7	6810321	B1	2004-10-26	COOK, et al.	
	8	7522995		2009-04-21	NORTRUP	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	14971658
	Filing Date	2015-12-16
	First Named Inventor	Edward H. Nortrup
	Art Unit	3661
	Examiner Name	NOLAN, PETER D.
	Attorney Docket Number	IPHO-0001-U02-C01-C06-C01

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	10	8306746		2012-11-06	NORTRUP	
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	16	8744761		2014-06-03	NORTRUP	
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	18	9014972	B2	2015-04-21	NORTRUP	
	19	9086295	B2	2015-07-21	NORTRUP	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
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	First Named Inventor	Edward H. Nortrup
	Art Unit	3661
	Examiner Name	NOLAN, PETER D.
	Attorney Docket Number	IPHO-0001-U02-C01-C06-C01

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	14971658
	Filing Date	2015-12-16
	First Named Inventor	Edward H. Nortrup
	Art Unit	3661
	Examiner Name	NOLAN, PETER D.
	Attorney Docket Number	IPHO-0001-U02-C01-C06-C01

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	Art Unit	3661
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	Application Number	14971658
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	Examiner Name	NOLAN, PETER D.
	Attorney Docket Number	IPHO-0001-U02-C01-C06-C01

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Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

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Signature	/John A. Monocello/	Date (YYYY-MM-DD)	2017-06-06
Name/Print	John A. Monocello	Registration Number	51022

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor:	Edward H. Nortrup	Examiner:	Peter D. Nolan
Serial No.:	14/971,658	Group Art Unit:	3661
Filed:	December 16, 2015	Confirmation No.	7270
Docket No.:	IPHO-0001-U02-C01-C06-C01		
Title:	METHOD AND SYSTEM FOR PROVIDING TRAVEL TIME INFORMATION		

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
P.O. Box 1450
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In compliance with the duty imposed by 37 C.F.R. § 1.56, and in accordance with 37 C.F.R. §§ 1.97 *et. seq*., the referenced materials are brought to the attention of the Examiner for consideration in connection with the above-identified patent application.

Applicant has included copies of foreign patent documents and/or non-patent literature in accordance with 37 C.F.R. 1.98(a)(2).

Pursuant to 37 C.F.R. §1.97(b), it is believed that no fee is required with the Information Disclosure Statement.

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The Examiner is invited to contact the Applicant's representative at the below-listed telephone number if there are any questions regarding this communication.

Respectfully submitted,

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Customer No. 87084

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By: /John A. Monocello/
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Application Number:	14971658
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First Named Inventor/Applicant Name:	Edward H. Nortrup
Customer Number:	87084
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Application Type:	Utility under 35 USC 111(a)

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Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Foreign Reference	WO2007112366A2.pdf	1637138 d85022a528dda7c5c6a783e5860890c7cd6261a9	no	38

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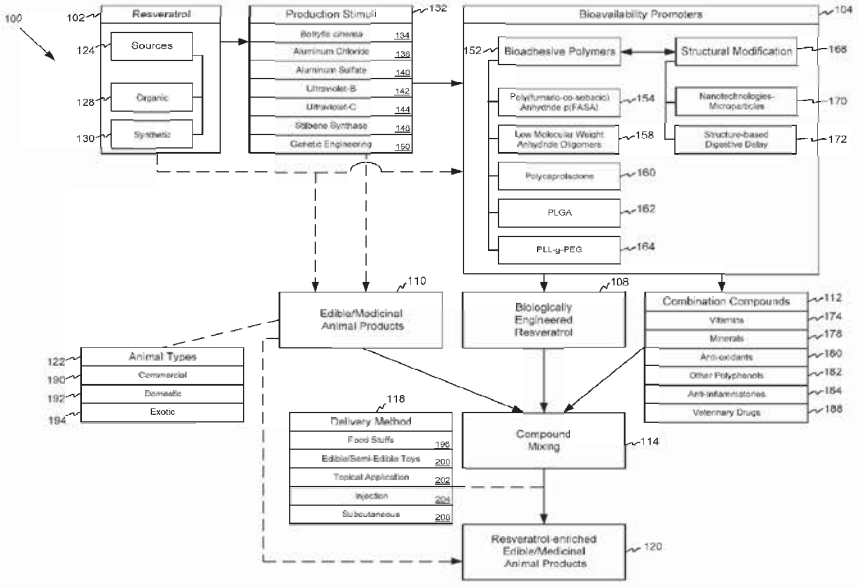
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(54) Title: ANIMAL PRODUCT ENRICHMENT USING RESVERATROL



(57) Abstract: The methods and systems disclosed herein include combining resveratrol with a bioavailability promoter to produce a bioavailable resveratrol, combining the bioavailable resveratrol with a combination compound to produce a bioavailable resveratrol enriched compound, and combining the bioavailable resveratrol enriched compound with an animal delivery method to produce a resveratrol enriched product for use by an animal.

WO 2007/112366 A2

ANIMAL PRODUCT ENRICHMENT USING RESVERATROL

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application claims priority to the following commonly-owned U.S. Provisional Patent Application, which is incorporated herein by reference in its entirety: App. No. 60/785,417 filed on March 24, 2006 and entitled "RESVERATROL."

FIELD OF THE INVENTION

[0002] This disclosure relates to the field of commercial, domesticated, and exotic animal products and more particularly to animal products enriched with resveratrol, including in combination with a bioavailability promoter.

BACKGROUND

[0003] Resveratrol (3,4',5-trihydroxystilbene and 3,4',5-stilbenetriol) has been found in numerous in vitro and in vivo studies to have a wide range of beneficial health effects. Among these, resveratrol has been found to protect against atherosclerosis, hyperlipidemia, and other markers of cardiovascular disease, inhibit cancer cell proliferation, protect against osteoarthritis, and have anti-aging effects. The positive effects of resveratrol have been found in both human studies and animal models. However, although resveratrol is a naturally occurring compound, it's presence in plant derivatives is low, and it is absorbed slowly and eliminated quickly. Thus, to obtain the positive health effects of resveratrol, typically long-term and/or high levels of consumption are necessary. Further compounding the problem for commercial and domesticated animals is the fact that many of the plants from which resveratrol may be extracted (e.g., grape skins) are not included in their diets. A need exists for new techniques and products for providing resveratrol to the animal population and improving the bioavailability of resveratrol for animals.

SUMMARY

[0004] Provided herein are methods and systems for combining resveratrol with a bioavailability promoter to produce a bioavailable resveratrol, combining the

bioavailable resveratrol with a combination compound to produce a bioavailable resveratrol enriched compound, and combining the bioavailable resveratrol enriched compound with an animal delivery method to produce a resveratrol enriched product for use by an animal.

[0005] In embodiments, resveratrol may be organic or synthetic resveratrol. Organic resveratrol may be derived from grapes, berries, pine, Japanese Knotweed, Giant Knotweed, green teas, black tea, Polygonnum cuspidatum, or some other organic source.

[0006] In embodiments, resveratrol may be obtained based at least in part on an artificial production stimulus. Artificial stimuli may include Botrytis cinerea, aluminum chloride, aluminum sulfate, ultraviolet-B, ultraviolet-C, stilbene synthase, or some other production stimulus.

[0007] In embodiments, the resveratrol may be genetically engineered.

[0008] In embodiments, the resveratrol may a plurality of organic resveratrol types.

[0009] In embodiments, the resveratrol may a plurality of synthetic resveratrol types.

[0010] In embodiments, the resveratrol may a plurality of genetically engineered resveratrol types.

[0011] In embodiments, the resveratrol may a combination of organic resveratrol and synthetic resveratrol types.

[0012] In embodiments, the resveratrol may a combination of organic resveratrol and genetically engineered resveratrol types.

[0013] In embodiments, the resveratrol may a combination of synthetic resveratrol and genetically engineered resveratrol types.

[0014] In embodiments, the resveratrol may a combination of organic resveratrol, synthetic resveratrol, and genetically engineered resveratrol types.

[0015] In embodiments, the resveratrol may a combination of organic resveratrol and genetically engineered resveratrol types.

[0016] In embodiments, the resveratrol may be in the form of micronized particles.

[0017] In embodiments, the bioavailability promoter may be a bioadhesive polymer, a microparticle, a nanoparticle, a cationic polymer, a polymeric microsphere, microencapsulation, nanoencapsulation, a structural modification, a plurality of bioavailability promoters, or some other bioavailability promoter or bioavailability promoter combination.

[0018] In embodiments, the bioavailability promoter is at least one selected from the group consisting of polyanhydrides, and polymers and copolymers of acrylic acid, methacrylic acid, and their lower alkyl esters, for example polyacrylic acid, poly(methyl methacrylates), poly(ethyl methacrylates), poly(butylmethacrylate), poly(isobutyl methacrylate), poly(hexylmethacrylate), poly(isodecyl methacrylate), poly(lauryl methacrylate), poly(phenyl methacrylate), poly(methyl acrylate), poly(isopropyl acrylate), poly(isobutyl acrylate), and poly(octadecyl acrylate).

[0019] In embodiments, a cationic polymer may be chitosan, albumin, gelatin, starch, DEAE-Cellulose, cationic guar and DEAE-Dextran. DEAE-Dextran and cationic guar have tertiary amino groups. Cationic guar's INCI name is Guar hydroxypropyltrimonium chloride and DEAE-Dextran is Diethylaminoethyl-Dextran, or some other cationic polymer.

[0020] In embodiments, a bioadhesive polymer is poly(fumaric-co-sebacic) anhydride p(FA-:SA), poly(lactic-co-glycolic acid) (PLGA), PLL-g-PEG, a low molecular weight anhydride oligomer, polycaprolactone, non-biodegradable, biodegradable, non-erodible, or some other bioadhesive polymer.

[0021] In embodiments, a structural modification may be a nanotechnology, a microparticle, a structure-based digestive delay, or some other structural modification.

[0022] In embodiments, a bioavailable resveratrol may be a biologically engineered resveratrol.

[0023] In embodiments, a combination compound may be a vitamin, mineral, antioxidant, polyphenol, anti-inflammatory, veterinary drug, or some other compound.

[0024] In embodiments, the animal delivery method may be a food stuff, edible toy, semi-edible toy, topical application, liquid, injection, subcutaneous delivery, or some other delivery method.

[0025] In embodiments, a resveratrol enriched product for use by an animal may include animal feeds, pet feed, commercial animal feed, dry feed, canned feed, water additive, dog biscuits, gourmet pet feeds, animal strips (e.g., rawhide-type), beef jerky, pepperoni, edible pet toys, bones, animal bones covered/injected with resveratrol, nylon bones with resveratrol, catnip, veterinary medicines, eye drops, ear drops, tongue drops, nasal spray, pill, tablet, capsule, heartworm medication, insulin, tapeworm medicine, vitamins, minerals, dietary supplements, vaccines (e.g., distemper, leukemia, rabies, toxoplasmosis), anti-arthritis/pain meds, carprofen, deracoxib, glucosamine, firocoxib, aspirin, flea/tick medicine (e.g., collar, skin drops, powder), grooming products (e.g., shampoos and soaps), skin care products, intravenous drip, time release patch, topical patch, skin drops, subcutaneous slow-release capsule, or some other product.

[0026] In embodiments, the resveratrol enriched product may include a high does resveratrol. A high dose resveratrol may include a dose equal to the sirtuin activating effect of 18, 25, 50, 100, 250, 500, 750 mg/kg resveratrol, 1, 2, 5 g/kg resveratrol, or some other level of high resveratrol dosage.

[0027] In embodiments, a high does of resveratrol may be delivered in a sustained release formulation.

[0028] In embodiments, an animal may be commercial animals, such as, livestock, cattle, poultry, foul, cows, horses, pigs, bison, buffalo, oxen, sheep, goats, chicken, ducks, pheasant, partridge, emus, llama, ostrich, deer, mink, crocodile, alligator; domestic animals, such as, dog, cat. hamster, fish, gerbil; and exotic animals, birds, rodents, chinchilla, degu, prairie dog, sugar glider, rat, mice, skunk, hedgehog, squirrel, wallaby, iguana, lizard, kimono dragon, ferret, rabbit, hare, guinea pig, possum, fox, pot belly pig, tropical fish, shark, snake, turtle, other reptiles, spiders, or some other animal.

[0029] These and other systems, methods, objects, features, and advantages of the present invention will be apparent to those skilled in the art from the following detailed description of the preferred embodiment and the drawings.

BRIEF DESCRIPTION OF THE FIGURES

[0030] The invention and the following detailed description of certain embodiments thereof may be understood by reference to the following figure:

[0031] Fig. 1 illustrates a method for making a bioavailable resveratrol enriched animal product.

DETAILED DESCRIPTION

[0032] The methods and systems disclosed herein relate to the inclusion of resveratrol in products for commercial, domesticated, and exotic animals, and methods for improving the bioavailability of the resveratrol included in animal products. Fig. 1 summarizes a resveratrol infusion methodology 100 for incorporating resveratrol 102 into products, foodstuffs, and pharmacological agents for animals. Resveratrol 102 (3,4',5-trihydroxystilbene and 3,4',5-stilbenetriol) is an organic 128 polyphenol commonly found in the skins of grapes (e.g., the *Vitis vinifera* variety), the peanut, berries (e.g., within the *vaccinum species* species), pines, knotweed, green and black tea, and *Polygonnum cuspidatum*.

[0033] In embodiments, the terms "sirtuin activator" or "sirtuin activating compound" may refer to a compound, such as resveratrol, that increases the level of a sirtuin protein and/or increases at least one activity of a sirtuin protein. In an embodiment, a sirtuin activator may increase at least one biological activity of a sirtuin protein by at least about 10%, 25%, 50%, 75%, 100%, or more. Exemplary biological activities of sirtuin proteins may include deacetylation, e.g., of histones; extending lifespan; increasing genomic stability; silencing transcription; and controlling the segregation of oxidized proteins between mother and daughter cells, or some other biological activity.

[0034] Resveratrol 102 has been found to protect against atherosclerosis, hyperlipidemia, and other markers of cardiovascular disease, inhibit cancer cell proliferation, protect against osteoarthritis and osteoporosis, have anti-aging effects, anti-inflammatory effects, to speed the clearance of amyloid-beta peptides that are thought to be associated with Alzheimer's Disease, assist the functioning of the pancreas, and many others. The beneficial health effects of resveratrol 102 have been attributed to its antioxidant properties, its anticyclooxygenase activity, and its ability to improve lipid and lipoprotein metabolism. Resveratrol 102 also inhibits platelet aggregation and exhibits

antiestrogenic activity. The proliferation of various human malignant cell lines is slowed by resveratrol 102. The inhibition of malignant cell growth that is associated with resveratrol 102 is accompanied by the accumulation of cells in S and G_2 phases. The effects on cell cycle progression may also be explained by the direct inhibition of ribonucleotide reductase and DNA polymerase. The number and position of the hydroxylic groups in the resveratrol molecule have been suggested to play an important role in the antioxidant activity.

[0035] Resveratrol 102 may be obtained through organic 128 or synthetic 130 means. Resveratrol 102 is produced in plants, in part, as a defense against fungus, environmental stress, or in response to a pathogenic attack. In particular, the fungus *Botrytis cinerea* 134, and two metabolites of *Botrytis cinerea* 134, alginate and mucic acid, have been found to be potent inducers of resveratrol 102 production. Environmental levels of *Botrytis cinerea* 134 are generally higher in colder climates. Grapes (and other plants) from colder climates often produce higher concentrations of resveratrol 102 than similar species growing in warmer climates. Thus, manipulation of the level of the *Botrytis cinerea* 134 fungus in a plant's environment may increase the resveratrol 102 levels of plants. However, studies have found that once the plants produce enough resveratrol 102 to optimize their immunity to the fungus for self preservation, resveratrol 102 production plateaus.

[0036] Resveratrol 102 may occur in the form of trans-resveratrol or cis-resveratrol. Trans-resveratrol is more strongly associated with beneficial health effects than is cis-resveratrol. One molecule of *trans*-resveratrol may be synthesized from one molecule of p-coumaroyl-CoA and three molecules of malonyl-CoA. Various methods may be used to artificially increase the production of resveratrol 102 in plants, including the use of stilbene synthase 148. Artificially treating grape plants with aluminum chloride 138 or aluminum sulfate 140 has been found to increase resveratrol 102 production, as has irradiating resveratrol 102 producing plants with ultraviolet B 142 and ultraviolet C 144 light.

[0037] Methyljasmonate has been shown to be effective an effective synthetic 130 stimulator of both trans- and cis-resveratrol endogenous accumulation, as well as resveratrol 102 release into a culture medium. Similarly, jasmonic acid has been found to

promote endogenous resveratrol 102 accumulation, but less markedly than methyljasmonate. Na-orthovanadate has been shown to promote the production and/or accumulation of cis-resveratrol, but not trans-resveratrol levels. Significantly, experimental evidence exists for ex-novo synthesis of resveratrol using methyljasmonate. For example, gel analysis was performed by Tassoni (Tassoni, A., et al, Jasmonates and Na-orthovanadate promote resveratrol production in *Vitis vinifera* cv. Barbera cell cultures. New Phytologist. 2005; 166 (3), incorporated by reference herein) on Barbera cell suspensions of the cultivar, *Vitis vinifera cv*, treated with 10 μm of methyljasmonate. The results demonstrated an up-regulation of the stilbene synthase 148, evidence that the methyljasmonate stimulated the resveratrol 102 synthesis ex-novo of the protein.

[0038] In embodiments, genetic engineering 150 may be used to manufacture higher quantities of resveratrol 102 naturally found and to manufacture resveratrol in plant varieties where it is not normally produced. For example, resveratrol 102 synthase genes have been isolated, cloned and inserted into potatoes, rice, tomatoes, alfalfa and tobacco.

[0039] In embodiments, resveratrol enriched animal products may be combined with antioxidants in order to minimize the destructive oxidation process which may negatively impact the effectiveness of resveratrol. Oxidation in animal products, such as feeds, is associated with a loss of nutrient quality. During oxidation, heat may be released thereby causing degradation of an animal product. Oxidation may damage fat soluble vitamins, decrease the protein value of the product, decrease the energy store of the product, and or degrade heat labile protein. Oxidation may also increase the formation of free radicals which have been found to negatively impact animals' immune systems, longevity, and product shelf life. The reaction sequence for oxidation can be divided into distinct phases. An initiation phase of the oxidation reaction can be catalyzed by a number of factors including light, metals, surface area, and or exposure to oxygen and temperature. This reaction may be halted with the addition of antioxidants. Antioxidants act as free radical "scavengers," terminating the propagation sequence, and dissipating the reactive energy across their ringed structure. Fat is an ingredient that is highly susceptible to oxidation as a result of its chemical structure. Oxidation occurs most readily in fats with multiple points of unsaturation (double bonds) in their fatty acid

chains. Commonly used fats in animal products, to name but several, include animal fat, poultry fat, animal tallow, animal-vegetable fat blend, and canola oil, all of which are susceptible to degradation by oxidation. Other common animal product ingredients that are susceptible to oxidation include fish meal, fat-soluble vitamins (A, D, E and K) and natural pigments. Antioxidants may limit oxidation in animal products incorporating fats, poultry or fish meal, preserve the vitamin quality, as well as preserve the potential for pigmentation of the product to improve its salability.

[0040] By combining resveratrol with an antioxidant or antioxidant blend in an animal product, the resulting product may have an improved effectiveness for supporting animal health by both preserving the potency of the resveratrol as well as minimizing the degradation of other animal product vitamins and nutrients. A resveratrol enriched animal product that is combined with an antioxidant or antioxidant blend may also have a greater shelf life. A lengthened shelf life may improve logistic and financial efficiencies by permitting longer shipping distances, thereby permitting centralized production, storage in distribution centers, packaging in larger quantities, larger retail inventories, longer consumer use from a single purchased unit, and the like.

[0041] Synthetic and natural antioxidants may be combined with an animal product, such as a resveratrol enriched product, in order to prevent oxidation of the product. One example, selected from several examples, of a natural antioxidant that may be used to prevent oxidation in a resveratrol enriched product is vitamin E. Vitamin E may be used as an antioxidant in the form of alpha-tocopherol, or in the form of mixed tocopherols. Alpha-tocopherol is the biologically active form of vitamin E, but has reduced antioxidant efficacy relative to the delta and gamma forms. The delta and gamma forms generally have greater antioxidant effects; however these forms may be less nutritional. Other sources of natural antioxidants include mixed tocopherols, such as cranberries, blueberries, apples, and other fruits, vitamin C, citric acid and rosemary.

[0042] Synthetic antioxidants are generally more effective than natural antioxidants, such as vitamin E. Synthetic antioxidants may also be less expensive to produce than natural antioxidants. Part of the superiority of synthetic antioxidants derives from the fact that they are more stable, and show better survivability when added

during the rendering process and through feed processing and pelleting of an animal product, such as a feed.

[0043] The incorporation of antioxidants into an animal product may occur in stages and be blended with the incorporation of other animal product ingredients, including resveratrol. Antioxidants may be added to an animal product in a rendering facility. Because the oxidation process involves a rapid reaction, the antioxidant may be added as early in the rendering process as is physically practical. This may be accomplished in the rendering facility within the raw offal stream as the material enters the rendering plant cookers. Fat-soluble antioxidants, such as ethoxyquin, may be proportionately distributed in the liquid fat and fat portion of by-product meal after pressing. Adding an antioxidant like ethoxyquin to the raw offal may adequately stabilize liquid fat. The antioxidant incorporation resulting from such a process with liquid fat may produce protective antioxidant levels. Following the initial incorporation of antioxidants with the animal fat, other materials for the end product may be added prior to and or after the cooking of the product (if cooking is necessary) including resveratrol, vitamins, flavorings, colorings, and the like. Following this, the animal product may be treated one or more additional times with an antioxidant for additional oxidation protection of the final product, including protection of the incorporated resveratrol

[0044] The beneficial effects of resveratrol in a resveratrol enriched animal product may be increased by improving the bioavailability of the resveratrol contained within the animal product. Bioavailability refers to the extent that a compound is available for use by the animal ingesting or coming into contact with that compound. Bioadhesives (e.g., bioadhesive polymers) have been found to improve the bioavailability of numerous compounds based at least in part on prolonging the contact time of a compound with a body tissue and enabling a more controlled release of the compound to the tissue.

[0045] In embodiments, organic 128 or synthetically 130 produced resveratrol 102 may be combined with bioadhesives 152 to improve the bioavailability 104 of the resveratrol 102. Numerous studies have found that absorption of resveratrol 102 in animal models and humans is low. Without adequate bioavailability 104, the beneficial

health effects of resveratrol 102 may be minimized. For example, Walle (Walle, T. High absorption but very low bioavailability of oral resveratrol in humans, Drug Metabolism and Disposition, 2004 (32) 1377-1382, incorporated by reference herein) examined the absorption, bioavailability 104, and metabolism of resveratrol 102 after oral doses in humans. The absorption of a 25-mg oral dose was 70%, with peak plasma levels of resveratrol 102 and metabolites of 491 ± 90 ng/ml (about 2 μM) and a plasma half-life of 9.2 ± 0.6 h. Only trace amounts of unchanged resveratrol 102 (<5 ng/ml) were detected in plasma. Most of the oral dose was recovered in urine. Three metabolic pathways were identified: sulfate and glucuronic acid conjugation of the phenolic groups and, hydrogenation of the aliphatic double bond. The authors concluded that extremely rapid sulfate conjugation by the intestine and liver were the primary rate-limiting step in resveratrol's 102 bioavailability 104. Although the bioavailability 104 of resveratrol 102 was very low, accumulation of resveratrol 102 was found in the epithelial cells along the aerodigestive tract.

[0046] In embodiments, bioadhesive polymers 152 may be used in conjunction with resveratrol 102 to improve to improve its bioavailability 104 by providing additional contact with the digestive tract of an animal ingesting a resveratrol enriched product. Biologically adhesive delivery systems may have advantages over conventional drug delivery systems. Polymers 152 may be engineered to have specific properties that promote strong adhesion to the gastrointestinal mucus and cellular linings. For example, Mathiowitz (Mathiowitz, E. Biologically erodable microspheres as potential oral drug delivery systems. Nature. 1997 Mar 27;386(6623):410-4., incorporated by reference herein) report that engineered polymer microspheres 170 made of biologically erodable polymers 152 may traverse both the mucosal absorptive epithelium and maintain contact with intestinal epithelium for extended periods of time and actually penetrate it, through and between cells. Thus, once such a bioadhesive polymer 152 microsphere 170 is loaded with resveratrol 102, the microspheres 170 may be developed as delivery systems to transfer resveratrol 102 molecules to the animal's circulatory system. The clinical efficacy of the bioadhesive 152 delivery model has been demonstrated in improving the bioavailability 104 of compounds of diverse molecular size, such as, dicumarol, insulin, and plasmid DNA. Such a resveratrol-bioadhesive

combination may, in turn, be further incorporated with other ingredients comprising the resveratrol enriched animal end product (e.g., animal products, vitamins, flavorings, colorings, etc.).

[0047] In embodiments, resveratrol may be combined with a cationic polymer prior to inclusion in an animal product. In embodiments, resveratrol may be combined with a plurality of cationic polymers prior to inclusion in an animal product. A cationic polymer may include a component of the resveratrol delivery system that assists in the release of the active resveratrol agent.

[0048] In embodiments, cationic polymers suitable for combination with resveratrol may include, but is not limited to, those polymers having one positive charge per 100 amu to 2000 amu. Examples of such polymers include albumin, gelatin, starch, DEAE-Cellulose, cationic guar and DEAE-Dextran. DEAE-Dextran and cationic guar have tertiary amino groups. Cationic guar's INCI name is Guar hydroxypropyltrimonium chloride and DEAE-Dextran is Diethylaminoethyl-Dextran.

[0049] In embodiments, resveratrol may be combined with a high viscosity cationic polymer, such as chitosan, prior to inclusion in an animal product. Chitosan may a molecular weight of at least about 100,000 Daltons, more preferably at least about 250,000 Daltons and most preferably at least about 300,000 Daltons. Chitosan is a natural, biodegradable cationic polysaccharide derived by deacetylating chitin, a natural material extracted from fungi, the exoskeletons of shellfish and from algae. Chitosan comprises a family of polymers with a high percentage of glucosamine (typically 70-99%) and N-acetylated glucosamine (typically 1-30%) forming a linear saccharide chain of molecular weight from 10,000 up to about 1,000,000 Dalton. Typically, chitosan used in the invention is 70-100% glucosamine, such as 70-90% glucosamine or 80-100% glucosamine, more typically 85-95% glucosamine. Chitosan, through its cationic glucosamine groups, interacts with anionic proteins such as keratin in the skin conferring some bioadhesive characteristics.

[0050] In embodiments, resveratrol may be combined with micron and sub-micron polymeric microspheres prior to inclusion in an animal product. In an example, phase inversion nanoencapsulation may be used in which a polymer is dissolved in a solvent and the resveratrol to be encapsulated is dissolved or suspended in the polymer

solution. The resulting solution or suspension may be diluted with a solution that is a non-solvent for the polymer, such as an animal food product. The non-solvent may be selected to be sufficiently miscible with the solvent so that a single-phase solution that is a non-solvent for the polymer is formed after the dilution. The spontaneous mixing of the two solutions may occur rapidly and with a small characteristic scale of mixing. As a result, the polymer may precipitate to form particles with a very small diameter, typically in the range of tens to hundreds of nanometers, or in some cases up to several microns in diameter. These particles may be generally uniform in size. The resveratrol may be encapsulated in the nanospheres. Upon administration to an animal, the resveratrol may be released from the nanospheres by diffusion, degradation of the polymer, or a combination of these effects.

[0051] In embodiments, resveratrol may be combined with bioadhesive polymers that target mucosal surfaces, as in the gastrointestinal tract, including polymers, such as polyanhydrides, and polymers and copolymers of acrylic acid, methacrylic acid, and their lower alkyl esters, for example polyacrylic acid, poly(methyl methacrylates), poly(ethyl methacrylates), poly(butylmethacrylate), poly(isobutyl methacrylate), poly(hexylmethacrylate), poly(isodecyl methacrylate), poly(lauryl methacrylate), poly(phenyl methacrylate), poly(methyl acrylate), poly(isopropyl acrylate), poly(isobutyl acrylate), and poly(octadecyl acrylate).

[0052] In embodiments, non-biodegradable or biodegradable polymers may be used to encapsulate the resveratrol. Non-biodegradable polymers may include ethylene vinyl acetate, poly(meth)acrylic acid, polyamides, copolymers and mixtures thereof. Biodegradable polymers may include polymers of hydroxy acids such as lactic acid and glycolic acid, and copolymers with PEG, polyanhydrides, poly(ortho)esters, polyurethanes, poly(butyric acid), poly(valeric acid), poly(lactide-co-caprolactone), blends and copolymers thereof.

[0053] In embodiments, non-erodible polymers may be used for oral administration of a resveratrol enriched animal product.

[0054] In embodiments, resveratrol may be combined with natural polymers, including natural biopolymers that degrade by hydrolysis, such as polyhydroxybutyrate. Natural polymers may include proteins such as albumin, collagen, gelatin and

prolamines, for example, zein, and polysaccharides such as alginate, cellulose derivatives and polyhydroxyalkanoates, for example, polyhydroxybutyrate.

[0055] In embodiments, resveratrol may be combined with synthetic polymers. Synthetic polymers may include: poly(hydroxy acids) such as poly(lactic acid), poly(glycolic acid), and poly(lactic acid-co-glycolic acid), poly(lactide), poly(glycolide), poly(lactide-co-glycolide), polyanhydrides, polyorthoesters, polyamides, polycarbonates, polyalkylenes such as polyethylene and polypropylene, polyalkylene glycols such as poly(ethylene glycol), polyalkylene oxides such as poly(ethylene oxide), polyalkylene terepthalates such as poly(ethylene terephthalate), polyvinyl alcohols, polyvinyl ethers, polyvinyl esters, polyvinyl halides such as poly(vinyl chloride), polyvinylpyrrolidone, polysiloxanes, poly(vinyl alcohols), poly(vinyl acetate), polystyrene, polyurethanes and co-polymers thereof, derivativized celluloses such as alkyl cellulose, hydroxyalkyl celluloses, cellulose ethers, cellulose esters, nitro celluloses, methyl cellulose, ethyl cellulose, hydroxypropyl cellulose, hydroxy-propyl methyl cellulose, hydroxybutyl methyl cellulose, cellulose acetate, cellulose propionate, cellulose acetate butyrate, cellulose acetate phthalate, carboxylethyl cellulose, cellulose triacetate, and cellulose sulfate sodium salt (jointly referred to herein as "synthetic celluloses"), polymers of acrylic acid, methacrylic acid or copolymers or derivatives thereof including esters, poly(methyl methacrylate), poly(ethyl methacrylate), poly(butylmethacrylate), poly(isobutyl methacrylate), poly(hexylmethacrylate), poly(isodecyl methacrylate), poly(lauryl methacrylate), poly(phenyl methacrylate), poly(methyl acrylate), poly(isopropyl acrylate), poly(isobutyl acrylate), and poly(octadecyl acrylate) (jointly referred to herein as "polyacrylic acids"), poly(butyric acid), poly(valeric acid), and poly(lactide-co-caprolactone)- , copolymers and blends thereof. As used herein, "derivatives" may include polymers having substitutions, additions of chemical groups and other modifications routinely made by those skilled in the art.

[0056] In embodiments, bioadhesive polymers 152 may be combined with structural modification 168, such as, nanotechnologies 170 that may reduce the particle size of resveratrol 102, thereby increasing its bioavailability 104 within animals. Experimental evidence has shown that both particle size and polymer 152 composition are important factors affecting the bioavailability 104 of pharmaceutically active

compounds. For example, Thanos (Thanos, C.G., Enhancing the oral bioavailability of the poorly soluble drug dicumarol with a bioadhesive polymer. J Pharm Sci. 2003 Aug;92(8):1677-89., incorporated by reference herein) reduced the particle size of the drug, dicumarol, and combined it with varying sizes of bioadhesive 152 microspheres 170 composed of poly(fumaric-co-sebacic) anhydride p(FA:SA) 154. Swine were catheterized and gavaged, and blood collected for pharmacokinetic analysis. Smaller drug particles showed the highest bioavailability: micronized drug with 7% p(FA:SA) 17:83 polymer 152 had 190% relative bioavailability, and phase inverted p(FA:SA) 154 17:83 microspheres with 31% (w/w) loading had 198% relative bioavailability to spray dried formulation. Formulations with larger drug particles achieved 71% relative bioavailability. A nonadhesive formulation, fabricated with poly(lactic acid) (PLA), showed 91% relative bioavailability. Thus, both particle size 170 and polymer 152 composition play a role in bioavailability and may be used to increase absorption of resveratrol in animals.

[0057] In embodiments, resveratrol may be further combined with nanoparticles prior to inclusion in an animal product. Nanoparticles refers to particles that are smaller than microparticles. Microparticles have a mean diameter of 1 micron to 100 microns, such as from 1 micron to 50 microns, 1 micron to 20 microns or 1 micron to 10 microns. Typically, nanoparticles have a mean diameter of less than 1 micron or less than 500 nm, such as from 20 nm to 500 nm, from 20 nm to 300 nm, from 50 nm to 200 nm or from 50 nm to 150 nm. Preferably, greater than 90%, greater than 95%, greater than 97%, greater than 98% or greater than 99% of the particles fall within one of these ranges. Preferably, particle uniformity is such that particles in a group having a particular mean diameter are have individual diameters that are within 50% of the mean diameter, such as within 25% or even within 10%.

[0058] In embodiments, resveratrol 102 may be combined with anhydride oligomers within polymer microsphere blends. Santos (Santos, C.A., et al, Evaluation of anhydride oligomers within polymer microsphere blends and their impact on bioadhesion and drug delivery in vitro. Biomaterials. 2003 Sep;24(20):3571-83., incorporated by reference herein) found that resveratrol 102 may be combined with blends of low molecular weight anhydride oligomers 158 with thermoplastic poly(fumaric-co-sebacic

anhydride) [p(FASA)] 154 and polycaprolactone 160 to improve bioadhesion and the bioavailability of resveratrol.

[0059] In embodiments, resveratrol 102 may be combined with poly(lactic-co-glycolic acid) (PLGA) 162 and P(FASA) 154 plasmid-loaded nanospheres 170 for drug delivery. (Sandor, M., et al, Transfection of HEK cells via DNA-loaded PLGA and P(FASA) nanospheres. J Drug Target. 2002 Sep;10(6):497-506., incorporated by reference herein).

[0060] In embodiments, resveratrol 102 may be combined with poly(L-lysine)-g-poly(ethylene glycol) (PLL-g-PEG) 164, to produce PLL-g-PEG-coated 164 PLGA 162 microspheres 170 for drug delivery. (Muller, M. Surface modification of PLGA microspheres. J Biomed Mater Res A. 2003 Jul 1;66(1):55-61, incorporated by reference herein). Resveratrol 102 may also be delivered in a physically modified structure 168 that mechanically delays 172 passage through an animals digestive system, thereby increasing the time for resveratrol 102 bioavailability 104.

[0061] Following the combination of resveratrol 102 and other bioavilability promoters 104 including, but not limited to, those bioadhesive polymers 152 and/or structurally modified 168 particles described herein, a biologically engineered resveratrol 108 may be available for further compound mixing 114. For example, the biologically engineered reseveratrol 1028 may be further mixed with compounds, such as, vitamins 174, minerals 178, anti-oxidants 180, other polyphenols 182, anti-inflammatories 184, and/or other veterinary drugs 188. These combination compounds 112 may also be combined with similar bioavailability promoters 104 as used with the resveratrol 102.

[0062] In embodiments, micronized particles of resveratrol may be microencapsulated in one or more polymers, for example, using standard microencapsulation and nanoencapsulation techniques. The micronized particles resveratrol, for example formed by precipitation in alcohol, may serve as a core material in many standard encapsulation processes. The core material typically may encapsulated in a polymeric material. Common microencapsulation techniques include interfacial polycondensation, spray drying, hot melt microencapsulation, and phase separation techniques (solvent removal and solvent evaporation).

[0063] In embodiments, there may be multiple delivery methods 118 for making the resveratrol 102 and combination compounds 112 available to animals within the resveratrol-enriched product 120. For example, the compounds may be mixed with foodstuffs 198, with edible or semi-edible toys 200, made available within a topical application (e.g., a skin crème, or biodelivery patch) 202, produced in injection form 204, and/or for subcutaneous application 208. Alternatively, the resveratrol 102 may be directly incorporated into edible/medicinal animal products 110 in order to derive resveratrol-enriched edible/medicinal animal products 120.

[0064] In embodiments, compound mixing 114 to produce a resveratrol enriched edible/medicinal animal product 120 may include resveratrol 102, biologically engineered resveratrol 108, and or combination compounds 112 then, in turn, combined with a delivery method 118. Delivery methods may include, but are not limited to, food stuffs, edible toys, semi-edible toys, topical applications, injections, subcutaneous delivery means, and the like. For example, this compound mixing may be, to cite only one example, biologically engineered resveratrol 108 that is bound to a veterinary drug 188 both of which have undergone structural modification 168 to reduce the resveratrol 102 and the drug 188 to microparticles 170, with the resulting combination encapsulated within a bioadhesive polymer 154 for improved bioavailability 104. Once the compound mixing 114 is completed, the resulting compound may be mixed, incorporated, or bound with a delivery method 118 to produce a resveratrol enriched edible/medicinal animal product 120.

[0065] In embodiments, "sirtuin activating effect" may refers to the level or extent of one or more therapeutic effects obtained upon administration of a high dose of reservatrol. In embodiments, a high dose of a resveratrol may refer to an amount having a sirtuin activating effect equal to or greater than the sirtuin activating effect of 18 mg/kg resveratrol.

[0066] In embodiments, a high dose of a resveratrol may refer to a quantity having a sirtuin activating effect equal to or greater than the sirtuin activating effect of 18 mg/kg of resveratrol which is administered (i) orally, (ii) released from a sustained release form over 6 to 48 hours, and/or (iii) for an equivalent amount of time.