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(54) **Title:** IN-CAR SYSTEM AND METHOD FOR COMMUNICATION OF VOICE WITH LOCATION INFORMATION

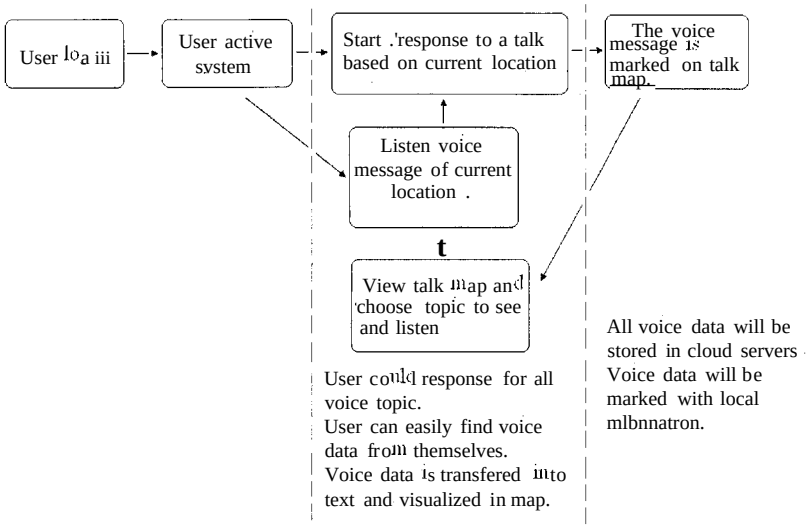

Fig.l

(57) **Abstract:** An in-car system for communication of voice with location information, includes a data collecting device, a data transferring device, a server, and a video display, wherein the in-car system also includes a virtual map creating device, the data col - lecting device includes a voice input device and a real time location information collecting device. An in-car method for communica - tion of voice with location information is also provided. The said in-car system and method for communication can provide a fast, friendly, fun way to communicate anonymously among the drivers, enhancing and enriching driving experience, and the user is also able to experience a new concept of map.

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In-Car System and Method for Communication of Voice with Location Information

Technical Field

The invention relates to the field of vehicle communication, particularly relates to an in-car system and method for communication of voice with location information which can provide a fast, friendly, fun way to communicate anonymously among the drivers. The in-car system and method can also enhance and enrich driving experience, providing the user with new experience with driving and map concept.

Background Art

In big cities, as an intuitive way to communicate, voice input is one of the most important and common functions of modern personal communication. Voice control is also widely used in human-machine interaction system in-car. The increasingly use of internet access in-car certainly promotes the prospects for the future application of inter-vehicle online messaging communication.

In recently years, GPS-based navigation systems have grown in popularity and are now widely available in a variety of forms, including different types of vehicle-installed units as well as hand-held portable units. For example, Chinese application No. 201 010617458.3 discloses a pretreatment method and system for navigation voice.

However, there is a lack of connection and interaction between car systems, whose function is limited only to be a transfer tool with little

communication or entertainment features. In the current in-car system, voice data cannot be recorded with location and time based information and visualized in real time map.

Summary of the Invention

The object of the invention is to provide an in-car system for communication of voice with location information.

Another object of the invention is to provide an in-car method for communication of voice with location information.

The in-car system for communication of voice with location information according to the invention includes a data collecting device, a data transferring device, a server, and a video display, wherein the in-car system also includes a virtual map creating device, the data collecting device includes a voice input device and a real time location information collecting device.

In the above in-car system, the data transferring device connects with the data collecting device and the server.

In the above in-car system, the server connects with the virtual map creating device and the video display.

In the above in-car system, the server is a cloudy server.

In the above in-car system, the data collecting device collects voice information and real time location information, and the data transferring device transfers them to the cloudy server.

In the above in-car system, the virtual map creating device receives voice information and real time location information from the cloudy server and creates a virtual map.

The in-car method for communication of voice with location

information according to the invention includes the following steps:

1) a voice input device collecting voice information, and a real time location information collecting device collecting real time location information;

2) a data transferring device transferring the above information to a server;

3) a virtual map creating device receiving the above information from the server and creating a virtual map;

4) the virtual map being stored in the server.

In the above in-car communication method, the in-car communication method also includes the following step:

5) a video display displaying the virtual map stored in the server.

In the above in-car communication method, the server is a cloudy server.

The advantages of the invention lie in that:

This invention use combination technology of LBS (Location based service), GPRS, data connection and transfer to cloudy server, and voice recognition and voice command control.

The in-car system and method according to the invention can realize very good function of communicating of voice with location information and provide a fast, friendly, fun way to communicate anonymously among the drivers. Meanwhile, Voice communication is direct and the best way for communication. Embedded with geographical information, voice message has the potential to become a new way of communication. In addition to enhance and enrich driving experience, user will also be able to experience a new concept of interactive map.

This in-car system can collect real time installation with projection

and ongoing data from the users, and use a virtual map to locate what users have talked about at a certain spot in this place. All data will be transferred to cloudy server to be stored. Viewers of this virtual map can also interact with it by speaking to the system. The talk just generated will be tagged on the virtual map and then available for other users to listen, or respond. Or, viewers can just listen or respond to some already existed talks through control device (multi-touch screen or other hardware device to move cursor and confirm). In addition, Voice control of the system can be supported.

Take an example to describe the advantage of interacting with the message in real time map. One user is driving to destination A, during the journey, the user see a new voice message added on the talk map for street B, which is on his plan route to destination A. And the user selects it which says there is a strike on street B and it is crowded of people. That is important information to this user, then he will avoid street B. With this visualized voice message shown in map, user could have the benefit of quick response to emergency and easy communication with others.

Brief Description of the Drawings

The following description includes discussion of figures illustrating example of implementations of embodiments of the invention.

Figure 1 is a flow diagram illustrating a process for user interacting with the system;

Figure 2 is a front view of a framework of user interface for a display screen or portion thereof showing the embodiments;

Figure 3 is a front view of a framework of user interface for a display screen or portion thereof showing the embodiments;

Figure 4 is a flow diagram illustrating a process for producing voice

message into the system and present in map according to various embodiments;

Figure 5 is a block diagram illustrating a suitable computing environment for practicing various embodiments described herein.

Embodiments

The contents of the invention will be described in details with reference to the drawings of the description; however, it should not be understood to limit the scope of the invention. A person skilled in the art may make various modifications and changes to the following embodiments without departing from the spirit and scope of the invention.

All of personal information is loaded from the user's identity number, when the user buy a car, this number will be provided. Meanwhile users can also manually set up their own personal information considering different privacy preferences.

The in-car system for communication of voice with location information includes a data collecting device, a data transferring device, a server, and a video display, wherein the in-car system also includes a virtual map creating device, the data collecting device includes a voice input device and a real time location information collecting device.

FIG.1 is a flow diagram illustrating a process for user interacting with the in-car system. As dialog box 1, the in-car system is already embedded in car and once log in, this function will allow user to active it. As dialog box 2, once users select this function, voice control is automatically initiated. As dialog boxes 3 and 4, the function will allow any user to start a talk or response to an existed talk without any click while driving, through the in-car voice control system. As dialog box 5,

all micro voice messages will be automatically located and tagged on the virtual map of a city. When other users pass this spot of talking, they can receive the voice message through this in-car system. As dialog box 6, each message is located on the virtual map and can only be listened to or replied on the same spot on the virtual map, which is called 'talk map'.

The visualization of all the talk tags in the city is very helpful, and also a beautiful way of showing the users a lively talking city.

FIG. 2 is a front view of a framework of user interface for a display screen or portion thereof showing the virtual map. It is designed to give user a visual preview of their location based voice talk, and also help user to keep record. All the talk users started or responded to would be loaded into this section, where users can track what they have listened to or talked over a period of time.

Generally, user could take a visual preview of all voice messages in the map. Voice messages can be category into different group, e.g., talk that one user has listened, talk that one user has taken response, or fresh talk user hasn't listened to. In the settings, user could select different category to display in the map. That will avoid heavy searching for users. User could switch among different locations to view the latest voice message.

The voice messages will be tagged more often at the cross road, or during a traffic jam. And the in-car system can automatically detect the drivers' complaints, questions, sighs, exclamation and put it on that very spot on the map, and other cars can receive and respond to those voice messages by will.

The interesting feature of this function would be that each talk can be considered as a life. When more people respond to one talk, the very

talk would live longer. Those talks that receive not many response for a while would die and disappear on the map. That is an efficient way to help user filter useful and valuable information. Hot spot issue will get more response, so it will be shown in talk map for longer time.

FIG.3 is a front view of a framework of user interface for a display screen or portion thereof showing the virtual map. There are more details which present more features in FIG. 3 than FIG. 2.

According to the selected message, there are several option buttons, with which users can easily respond to this message, clear this history, share/save them into other media platform, private or public, or even share the talks on other social networks. User also can control to play/ stop this message.

FIG.4 is a flow diagram illustrating a process for producing voice message into system and present in map according to various embodiments.

A voice message input request can be received by two ways, voice control to active or by other control hardware. In response to the request, a modal dialog is opened to allow voice input from the user. As discussed herein, the modal dialog can be any box or display that has a field for text entry display. Voice input is received and the message is then supplied to group of websites (Cloudy server) with location information tagged. The cloudy server includes a side component. In the side component, the voice messages will be transferred to text messages which can be visualized. Then the server will send the data back to the car system to display.

FIG. 5 is a block diagram illustrating a suitable computing environment for practicing various embodiments described herein. FIG. 5

illustrates a diagrammatic representation of a machine in the exemplary form of a computer system within which a set of instructions, for instructing the machine to perform any one or more of the methodologies discussed herein, may be executed. The exemplary computer system includes a processor, a main memory, a static memory, and a secondary memory, which communicate with each other via a bus. Various components described herein may be a means for performing the functions described herein.

In the present application, the data transferring device connects with the data collecting device and the server, the server connects with the virtual map creating device and the video display, and the server is a cloudy server.

The data collecting device collects voice information and real time location information, and the data transferring device transfers them to the cloudy server. The virtual map creating device receives voice information and real time location information from the cloudy server and creates a virtual map.

The voice input device collects voice information, and the real time location information collecting device collects real time location information. The data transferring device transfers the above information to the cloudy server. Then the virtual map creating device receives the above information from the cloudy server and creates a virtual map. The virtual map is stored in the cloudy server, according to the instruction of the users, the video display can display the virtual map stored in the cloudy server.

Industrial applicability

This in-car system and method for communication of voice with

location information according to the invention can provide a fast, friendly, fun way to communicate anonymously among the drivers, enhancing and enriching driving experience, and the user is also able to experience a new concept of map. It is suitable to widely apply in the field of vehicle communication.

Claims

1. An in-car system for communication of voice with location information, includes a data collecting device, a data transferring device, a server, and a video display, wherein the in-car system also includes a virtual map creating device, the data collecting device includes a voice input device and a real time location information collecting device.

2. The in-car system according to claim 1, wherein the data transferring device connects with the data collecting device and the server.

3. The in-car system according to claim 1, wherein the server connects with the virtual map creating device and the video display.

4. The in-car system according to any one of claims 1-3, wherein the server is a cloudy server.

5. The in-car system according to claim 4, wherein the data collecting device collects voice information and real time location information, and the data transferring device transfers them to the cloudy server.

6. The in-car system according to claim 5, wherein the virtual map creating device receives voice information and real time location information from the cloudy server and creates a virtual map.

7. An in-car method for communication of voice with location information, wherein the in-car communication method includes the following steps:

1) a voice input device collecting voice information, and a real time location information collecting device collecting real time location information;

2) a data transferring device transferring the above information to a

server;

3) a virtual map creating device receiving the above information from the server and creating a virtual map;

4) the virtual map being stored in the server.

8. The in-car communication method according to claim 7, wherein the in-car communication method also includes the following step:

5) a video display displaying the virtual map stored in the server.

9. The in-car communication method according to claims 7 or 8, wherein the server is a cloudy server.

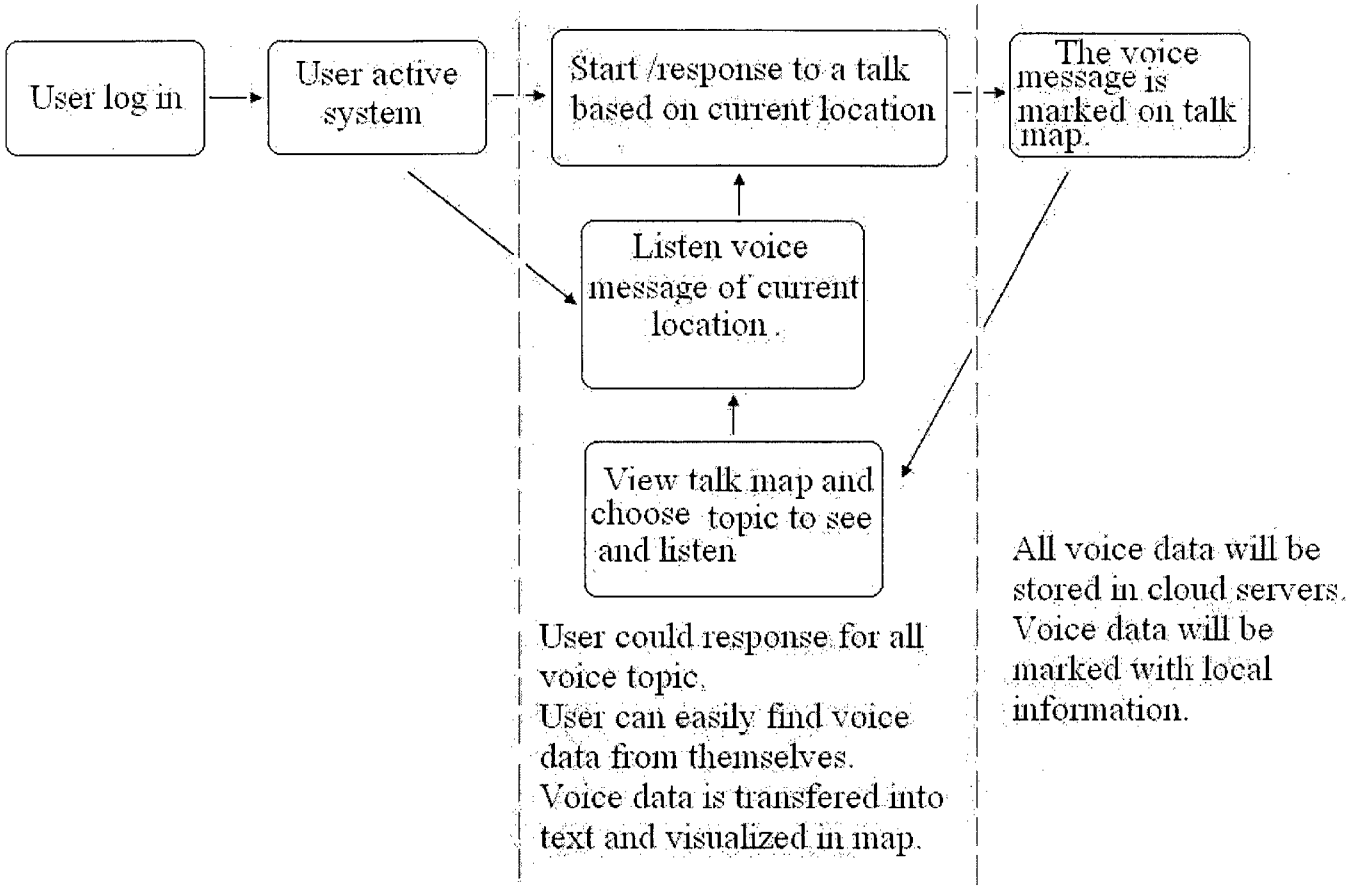
User log in
User active system
Start /response to a talk based on current location
The voice message is marked on talk map.
Listen voice message of current location .
View talk map and choose topic to see and listen
User could response for all voice topic.
User can easily find voice data from themselves.
Voice data is transfered into text and visualized in map.
All voice data will be stored in cloud servers.
Voice data will be marked with local information.

Fig.1

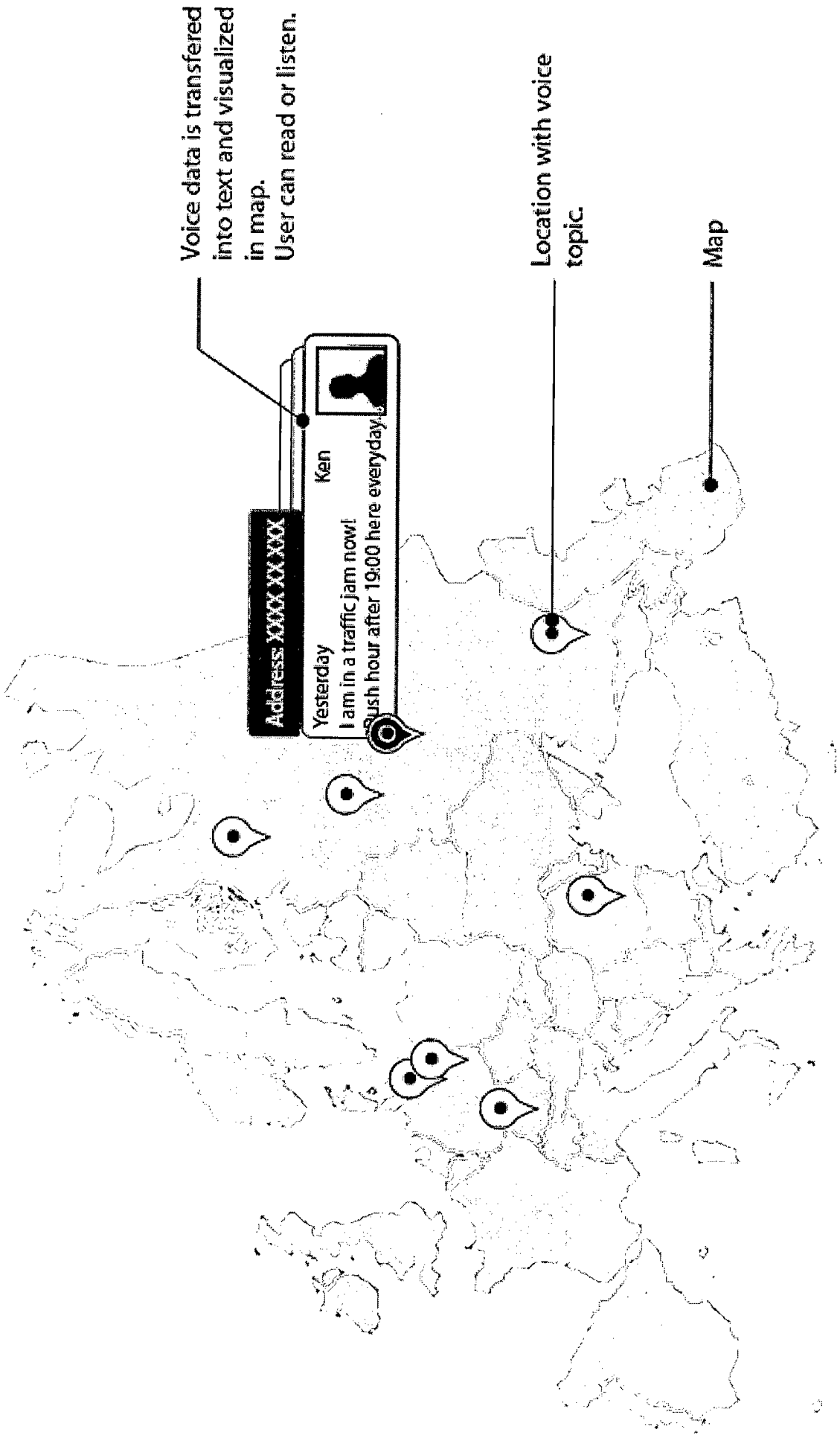
Voice data is transfered into text and visualized in map.
User can read or listen.
Location with voice topic
Map
Address XXXX XX XXX
Ken
Yesterday
I am in a traffic jam now!
Rush hour after 19:00 here everyday!

Fig.2

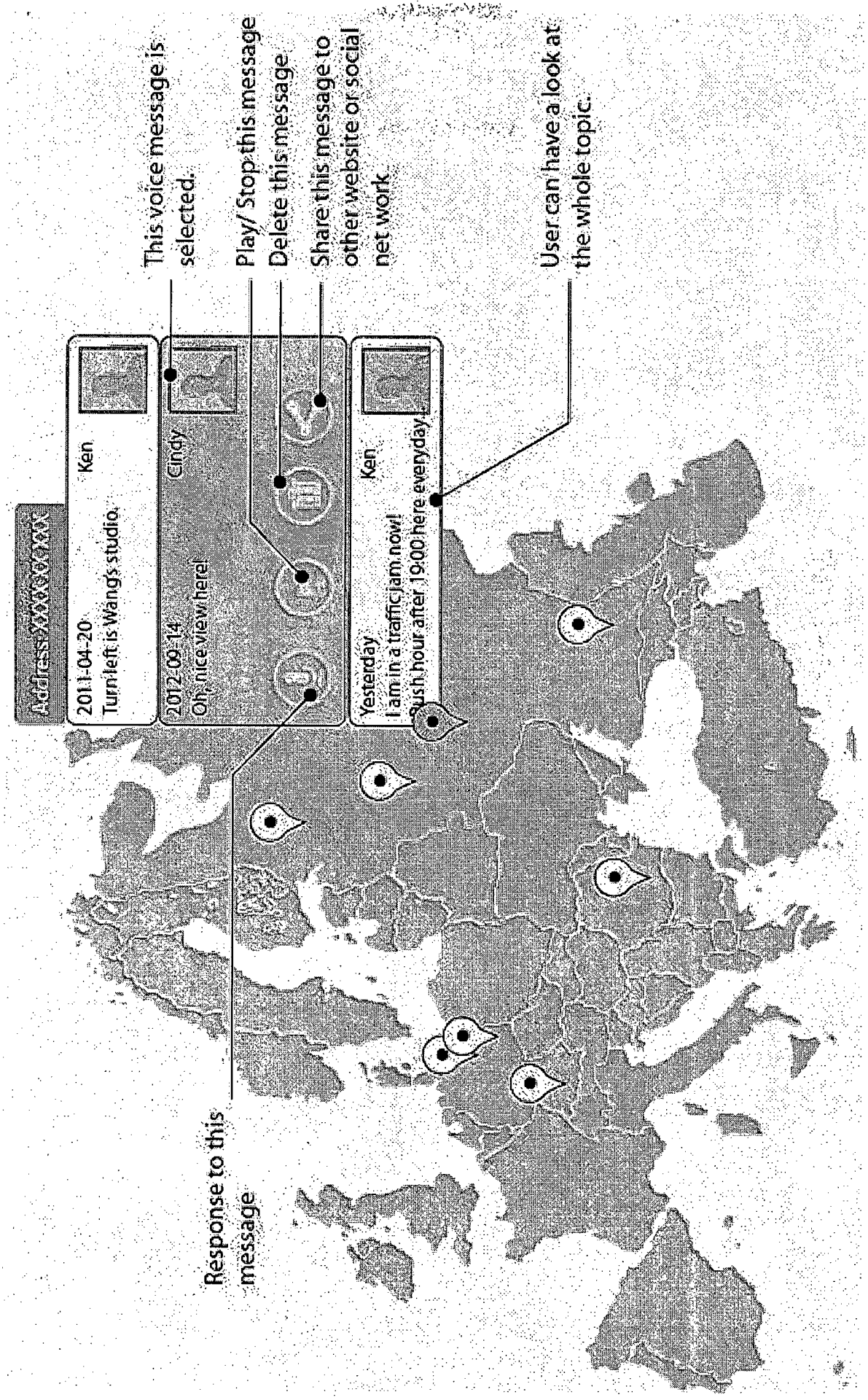
Address:xxxxxxxxxxxx
2011-04-20
Ken
Turn left is Wang's studio.
2012-09-14
Cindy
Oh, nice view here!
Yesterday
Ken
I am in a traffic jam now!
Rush hour after 19:00 here everyday.
This voice message is selected.
Play/ Stop this message
Delete this message
Share this message to other website or social net work
User can have a look at the whole topic.
Response to this message

Fig.3

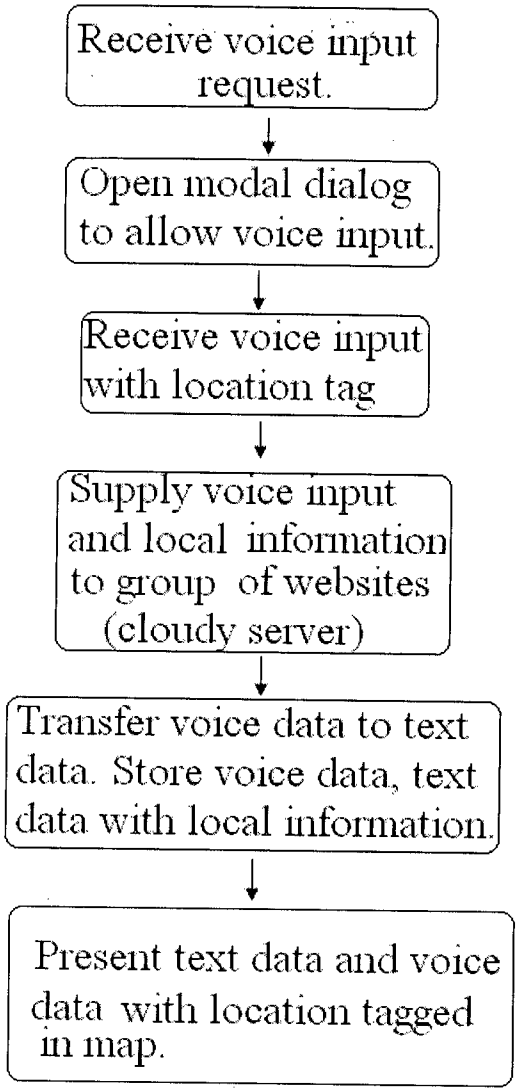
Receive voice input request.
Open modal dialog to allow voice input.
Receive voice input with location tag
Supply voice input and local information to group of websites (cloudy server)
Transfer voice data to text data. Store voice data, text data with local information.
Present text data and voice data with location tagged in map.

Fig. 4

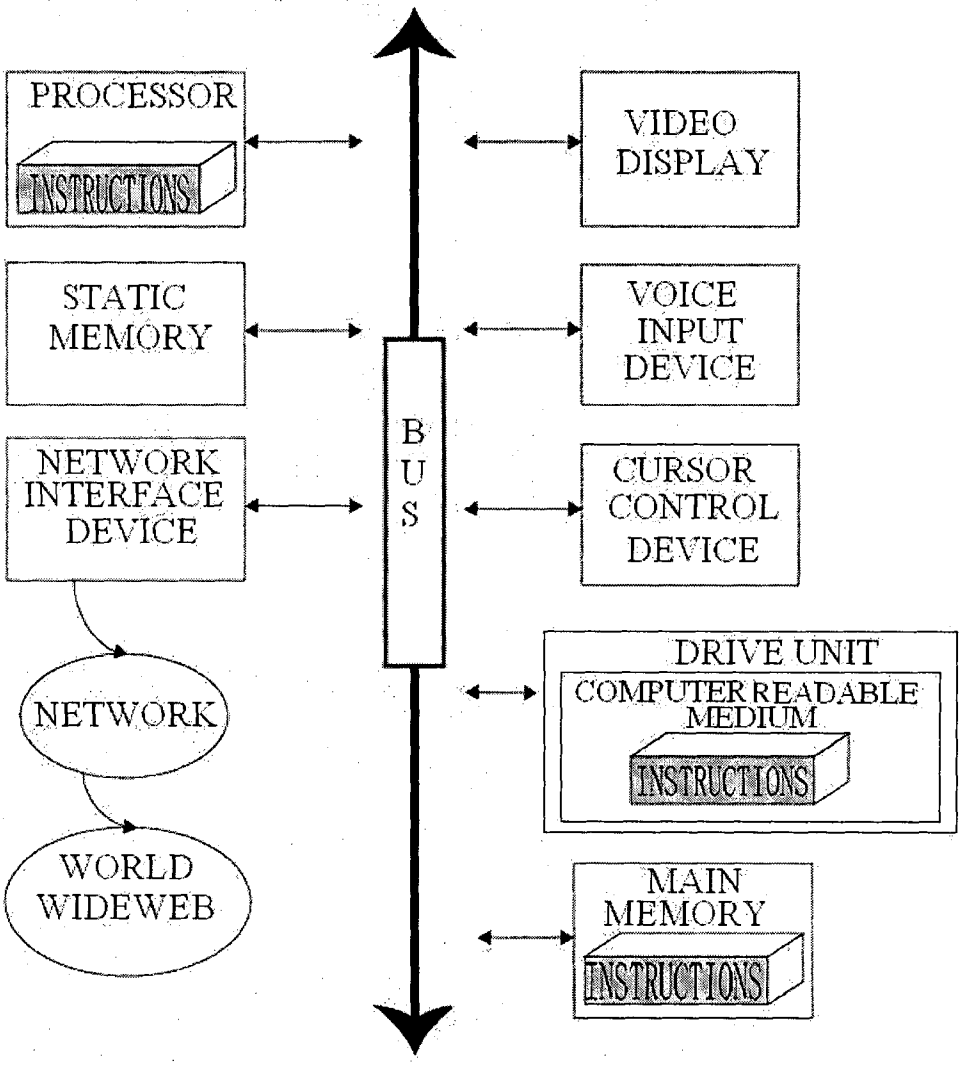
PROCESSOR
INSTRUCTIONS
STATIC MEMORY
NETWORK INTERFACE DEVICE
NETWORK
WORLD WIDEWEB
B U S
VIDEO DISPLAY
VOICE INPUT DEVICE
CURSOR CONTROL DEVICE
DRIVE UNIT
COMPUTER READABLE MEDIUM
INSTRUCTIONS
MAIN MEMORY
INSTRUCTIONS

Fig.5

INTERNATIONAL SEARCH REPORT

International application No
PCT/IB2012/0O2275

A. CLASSIFICATION OF SUBJECT MATTER
INV. G01C21/36 H04L12/58 H04W4/02
ADD.

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

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
H04L G01C H04W G1QL B60W

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
EPO-Internal , WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2011/100307 Al (GOOGLE INC [US] ; SONI PUNIT [US] ; LEE STEVEN J [US] ; MAVINKURVE SANJAY) 18 August 2011 (2011-08-18) paragraphs [0005] - [0011] , [0056] ; figure 2A	1-8
X	US 2009/254840 Al (CHURCHILL ELIZABETH F [US] ET AL) 8 October 2009 (2009-10-08) paragraph [0036] ; figure 1	1-8

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

☒ See patent family annex.

* Special categories of cited documents :

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"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
4 July 2013	17/07/2013

Name and mailing address of the ISA/	Authorized officer
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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/IB2012/002275

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2011100307 A1	18-08-2011	EP 2534553 A1	19-12-2012
		US 2011238762 A1	29-09-2011
		WO 2011100307 A1	18-08-2011
US 2009254840 A1	08-10-2009	NONE	