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[Continued on next page]

(54) Title: LOCATION BASED INFORMATION ACCESS SYSTEM AND METHOD

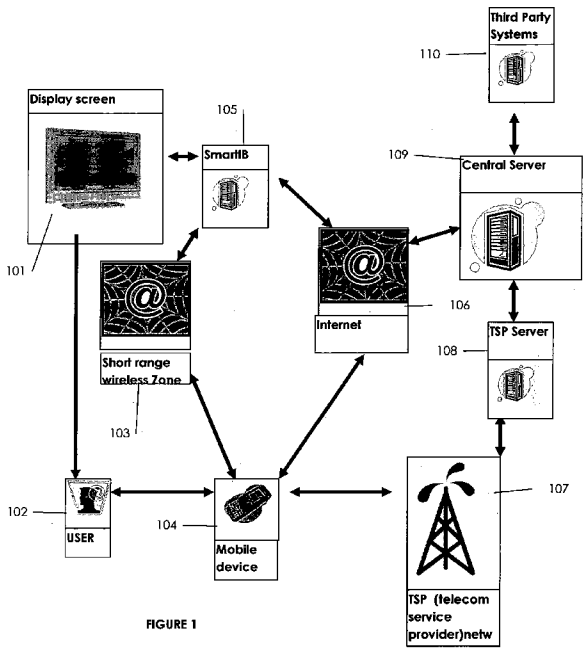

FIGURE 1

(57) Abstract: Method and system for aggregating and delivering information to a user device using positioning data are described. The instant invention facilitates aggregation and delivery of highly customized information from one or more central servers to a user device using the positional information of the user device connected in a communication network, more specifically in short range radio communication network such as Bluetooth and/or the like.

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SYSTEM AND METHOD FOR AGGREGATING AND DELIVERING INFORMATION

Cross reference to related application:

This application is related to Indian Provisional Patent Application No. 2514/CHE/2007 filed on November 4, 2007 . The entire contents of which are incorporated herein by this reference. The applicant hereby claims the benefit of this earlier pending provisional application

Field of Invention

The instant invention relates to a method and system for aggregating and delivering information to a user device that uses positioning data. More particularly, the instant invention relates to aggregating and delivering information that is customized using amongst other things a user's preference and positioning data of the user device over a short range network such as via Bluetooth and the like.

Background of the Invention

Travel and exploration is not just a great way to unwind but have always been a means of commerce and acquiring knowledge. However, obtaining local information with respect to places of historical or commercial interest or information regarding the local population necessitates a tour guide or unreliable searches on the net. Further, most of the information is scattered and hardly categorized to be of any great use.

Devices with built in GPS have been used in current times to use this positional information of the user device to

display relevant information and places of interest in the vicinity. However, information retrieved may be from one or few sources only. Moreover, the retrieved information is not customized according to the user's preferences. Generally, an explicit pulling of information from the user is required for the type of information that is delivered this way.

Hence, there is a need for a system and method to deliver useful information to the users through an inexpensive and secure communication network. Further, said system and methods should be able to accurately identify location of each user device and deliver highly customized information which may be used for further processing by the user.

Further limitations and disadvantages of conventional and traditional approaches will become apparent to one skilled in the art, through comparison of such systems with some aspects of the present invention. The novel and inventive features believed characteristics of the invention are set forth in the appended claims. The invention itself, however, as well as preferred modes of use, further objects and advantages thereof, will be best understood by reference to the following detailed description of illustrative embodiments when read in conjunction with the accompanying drawings.

Summary of the Invention

Method and system for aggregating and delivering information to a user device using positioning data are described. The instant invention facilitates aggregation and delivery of highly customized information from one or more central servers to a user device using the positional information of the user device connected in a communication network, more

specifically in short range radio communication networks such as Bluetooth and the like.

Briefly, one exemplary embodiment relates to a method for aggregating and delivering information to a user device using positioning data, the method comprising the steps of detecting a user device in a short range wireless zone, receiving a request from the user's device for certain information, forwarding said request to smart-IB coupled with the central server, forwarding the said request to said central server, interpreting the request and retrieving the data/information, sorting the data/information based on the preferred mode of request, aggregating and arranging data/information using positioning data/information in a preferred format, transmitting said data/information to the user's device.

Another exemplary embodiment relates to a system for aggregating and delivering information to a user device using positioning data, the system comprising a telecommunication network having interactive means coupled with local area network and world wide web, a mobile communication device having interactive means in a short range wireless zone, a telecom service provider server capable to send receive data/information, a smart - IB box capable of sending and receiving data/information, a central server capable of interpreting received messages from Smart - IB and user's mobile communication device, a display screen having display means operable to display data/information.

It is an objective of the instant invention to detect an active user device in a service location serviced by the

central server and deliver customized information to the user based on at least the positional data acquired from the device and the detected characteristics of the user device.

It is also an objective of the instant invention to determine if information about the detected user is present in the central server/or service location and use said information to customize the information to be delivered to the user device..

It is yet another objective of the instant invention to aggregate location specific information and services form a plurality of sources and customize and deliver to a specific user according to at least pre determined user's preference, details and location coordinates of the user device.

It is yet another objective of the instant invention to deliver customized information to the user device through permission based interactive mechanism.

Brief description of accompanying Drawings

Non-limiting and non-exhaustive features of the present invention together with its objects and advantages are described with reference to the accompanying drawings, like reference numerals refer to like elements throughout the various figures unless otherwise specified and wherein:

FIG. 1 illustrates a schematic diagram of a system for aggregating and delivering information to a user device using positioning data according to a preferred embodiment of the present invention.

FIG. 2 and 3 depict a block diagram of the method for aggregating and delivering information to a user device using positioning data according to a preferred embodiment of the present invention.

FIG. 4 illustrates the hardware elements of the smart- IB employed in a preferred embodiment of the present invention.

Detailed description of the Invention

Method and system for aggregating and delivering information to a user device using positioning data are described. The instant invention facilitates aggregation and delivery of highly customized information from one or more central servers to a user device using the positional information of the user device connected in a communication network, more specifically in short range radio communication network such as Bluetooth and the like.

In the following description for purposes of explanation, specific details are set forth in order to provide a thorough understanding of the present invention. It will be evident, however, to one skilled in the art that the present invention may be practiced without these specific details. In other instances, well known methods, procedures, components and circuits have not been described in detail so as not to obscure the present invention.

The present invention now will be described more fully hereinafter with reference to the accompanying drawings, which form a part hereof, and which show, by way of illustration, specific exemplary preferred embodiments by which the invention may be practiced. This invention may,

however, be embodied in many different forms and should not be construed as limited to the embodiments set forth herein; rather, these embodiments are provided so that this disclosure will be thorough and complete, and will fully convey the scope of the invention to those skilled in the art. The following detailed description is, therefore, not to be taken in a limiting sense.

Referring to Fig. 1, it depicts a system for aggregating and delivering information to a user device using positioning data. The system comprises a telecommunication network 107 having interactive means coupled with local area network and world wide web 106, a mobile communication device 104 having interactive means in a short range wireless zone 103, a telecom service provider server 108 capable to send receive data/information, a smart - IB box 105 capable of sending and receiving data/information, a central server 109 capable of interpreting received messages from Smart - IB 105 and user's mobile communication device 104, a display screen 101 having display means operable to display data/information.

In an embodiment, user device 104 is a wireless hand-held electronic device such as a mobile communication device having means to accurately determine its location. Said mobile communication device being able to connect and receive and transmit information over a short range communication network 103 such as via Bluetooth and the like. Said mobile communication device 104 may also have encoded instructions to enable a central server 109 connected to a service location to detect and authenticate the said phone. The central server 109 can have pre-stored information such as user authentication details, user preferences, transaction history of the user and so on.

The central server 109 can use this information along with the location and details regarding the user device 104 to aggregate relevant location specific information from a plurality of sources to be delivered to the user over a short range communication network such as 103 via Bluetooth and the like. The retrieval and delivery of location specific information is operator independent. Further, the access to information is realized over an inexpensive communication such as via Bluetooth and the like. The user device may be encoded with selectable menu options for authentication of the user and subsequently facilitate explicit information retrieval by a user.

Referring now to Fig. 2 and 3, which illustrate the method for aggregating and delivering information to a user device using positioning data, it comprises the steps of detecting 201 a user device in a short range wireless zone, receiving 204 a request from the user's device for certain information, forwarding said request to smart-IB 205 coupled with the central server, forwarding the said request to said central server 207, interpreting the request 208 and retrieving 301 the data/information, sorting 302 the data/information based on the preferred mode of request 303, aggregating and arranging 304 data/information using positioning data/information in a preferred format, transmitting 305 said data/information to the user's device.

The moment user enters a short range wireless zone the system detects and may ask for the enabling means 202. These means safely reside in the mobile communication device of the user and are installed only once unless a new version with more features is required to be installed. In such a

case the enabling means are automatically upgraded to latest version.

In absence of the enabling means in the user's device the user is prompted to download 203 the enabling means to access the interaction application in such device.

Once these means are identified in the mobile device of the user , the interactive system allows the user to interact with different functions, the user can either interact with the various options shown on the out of home display screen or options shown on the screen of the mobile communication device.

The user while interacting may ask for certain information about the location etc.

The request for such information is transmitted to the central server. Along with such information the location ID of the IB box is also transmitted. This helps in determining the exact location of the user, since short range wireless network such as Bluetooth and the like is active only in limited area, the accuracy level increases with the transmittal of location specific details of smart-IB.

In a preferred mode, such transmission of request preferably may also be made through Bluetooth, GPRS, short messaging services (SMS) request or the like.

The user's request depending on the data/information sought may further be sent to third party servers through the central server. The central server retrieves the information so desired from such third party server. The central server

schedules the data/information according to the preferred mode of request. It then packages the information in a presentable format and transmits the said information to the mobile device.

The transmission of data/information may be done using short range wireless medium such as Bluetooth and/or the like, which may also include the World Wide Web media or the telecommunication network.

The user may then optionally send his/her preferences or rate the data/information so received. Based on the feedback of the user, the system is updated with improved data/information and whenever the user subsequently requests for information, the system utilises the stored feedback and sends preferred/more useful information.

The information so send to the user comprises the advertisement content.

Reference now will be made to Fig. 4, wherein the hardware elements of the smart-IB employed in a preferred embodiment of the present invention are illustrated. said smart-IB further includes receiving means 401 to receive requests, transmitting means 402 to transmit data/information, storage means 403 to store data/information, short range wireless zone enabling means 405 to support short-range wireless media, display screen controlling means 406 to schedule the display content, scheduling means 407 to schedule the data/information.

The smart IB also has a location ID, and other geographic information. The smart-IB enables the system network to detect the exact and accurate location of the user's mobile device. It also enables the area to support short range wireless such as Bluetooth and the like. The enabling means for the application to interact with the system is also stored in the IB box which may be installed into the user's device on request. To connect with smart-IB box the handheld communication device may use short range wireless communication such as Bluetooth, wireless communication such as WLAN or WIFI and/or the like.

In one of the preferred embodiments of the instant invention, to enable such interactivity, the system transmits enabling means on to the handheld communication device of the user which subject to the permission of the user reside on the communication device.

These enabling means are useful having features which further promote interactivity.

Although, the invention has been described with reference to specific examples, it would be appreciated by those skilled in the art that the invention may be embodied in many forms without departing from the broader spirit and scope of the invention as set forth in the invention. Preferred embodiments of this invention have been described herein, including the best mode known to the inventor for carrying out the invention. Variations of those preferred embodiments may become apparent to those of ordinary skill in the art upon reading the foregoing description.

Accordingly, this invention includes all modifications and equivalents of the subject matter recited in the claims appended hereto as permitted by applicable law. Moreover, any combination of the above-described elements in all possible variations thereof is encompassed by the invention unless otherwise indicated herein or otherwise clearly contradicted by context. Accordingly, the specification and drawings are to be regarded in an illustrative rather than a restrictive sense without departing from the spirit and scope of the invention, the invention resides in the claims hereinafter appended.

WE CLAIM:

1. A method for aggregating and delivering information to a user device using positioning data, the method comprising the steps of:

detecting a user device in a short range wireless zone;

receiving a request from the user's device for certain information;

forwarding said request to smart-IB coupled with the central server;

forwarding the said request to said central server;

interpreting the request and retrieving the data/information;

sorting the data/information based on the preferred mode of request;

aggregating and arranging data/information using positioning data/information in a preferred format;

transmitting said data/information to the user's device.

2. The method as claimed in claim 1, wherein user device recalls a previously installed application with enabling means to forward a request.

3. The method as claimed in claim 1, wherein user device downloads an application with enabling means using short range wireless media.

4. The method as claimed in claim 1, wherein smart-IB forwards the user's request to the central server along with smart-IB details.

5. The method as claimed in claim 1, wherein said method further comprising the step of:

interacting with third party system servers to retrieve relevant data/information.

6. The method as claimed in claim 1, wherein central server sorts the data/information based on user's profile using location specific data/information.

7. The method as claimed in claim 1, wherein central server aggregates and arranges the most relevant information based on the location of smart-IB.

9. The method as claimed in claim 1, further comprising the step of interaction with the system network wherein the user interacts with the system server through short messaging service (SMS), GPRS and/or the like.

10. A system for aggregating and delivering information to a user device using positioning data, the system comprising:

a telecommunication network having interactive means coupled with local area network and world wide web;

a mobile communication device having interactive means in a short range wireless zone;

a telecom service provider server capable to send receive data/information;

a smart - IB box capable of sending and receiving data/information;

a central server capable of interpreting received messages from Smart - IB and user's mobile communication device;

a display screen having display means operable to display data/information.

11. The system as claimed in claim 10, further comprising:

a third party server having means capable of sending and receiving data/information on request.

12. The system as claimed in claim 10, wherein said central server comprised of pre-stored information including user authentication details, user preferences, transaction history of the user and the like information.

13. The system as claimed in claim 10, wherein said Smart-IB further includes:

receiving means to receive requests;

transmitting means to transmit data/information;

storage means to store data/information;

short range wireless zone enabling means to support short-range wireless media;

display screen controlling means to schedule the display content;

scheduling means to schedule the data/information.

14. The system as claimed in claim 10, wherein smart-IB comprises the location-ID information and/or relevant geographic data/information.

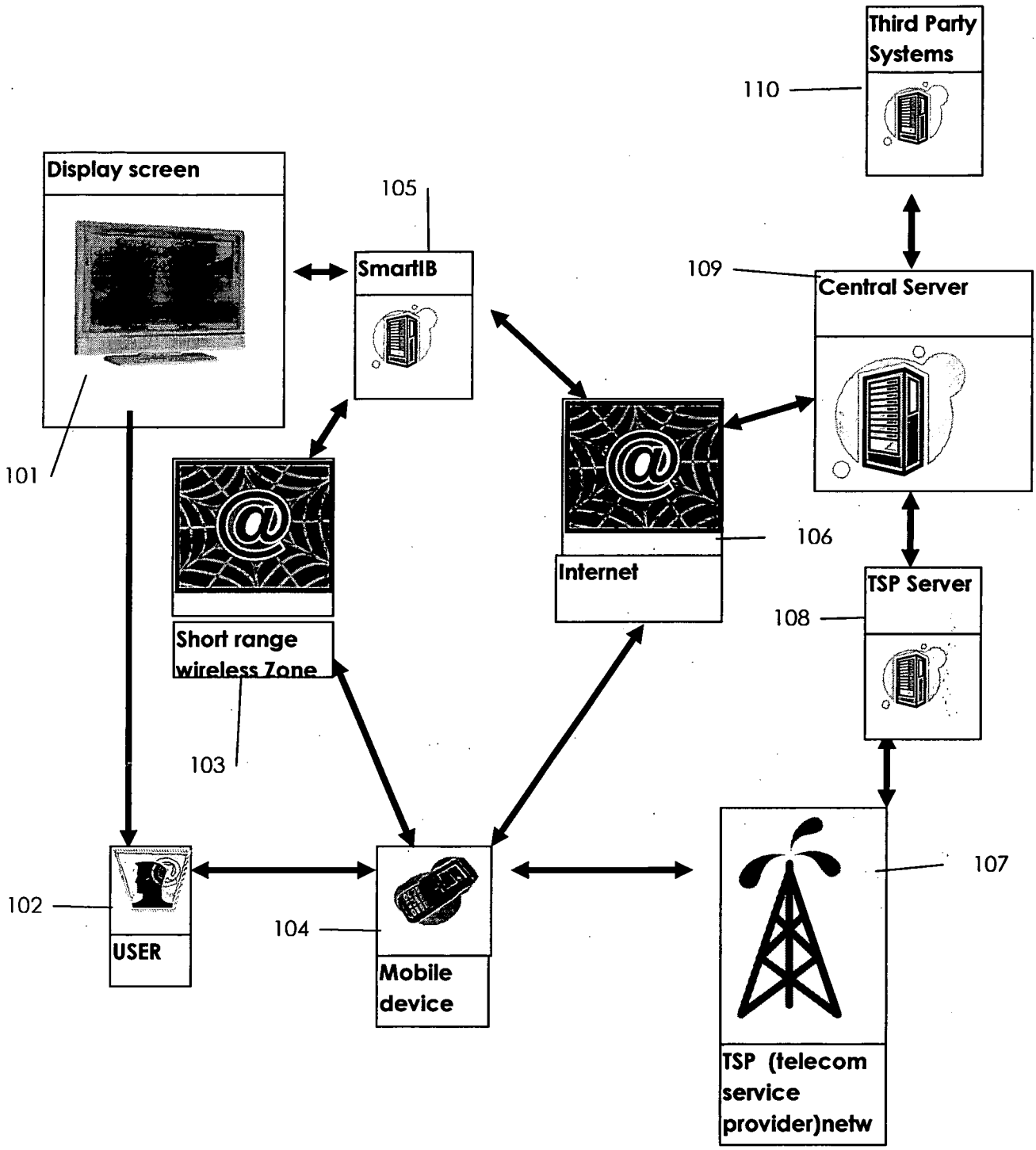
Third Party Systems
110
Display screen
105
SmartIB
109
Central Server
101
Internet
106
Short range wireless Zone
TSP Server
108
103
102
USER
104
Mobile device
107
TSP (telecom service provider)netw

FIGURE 1

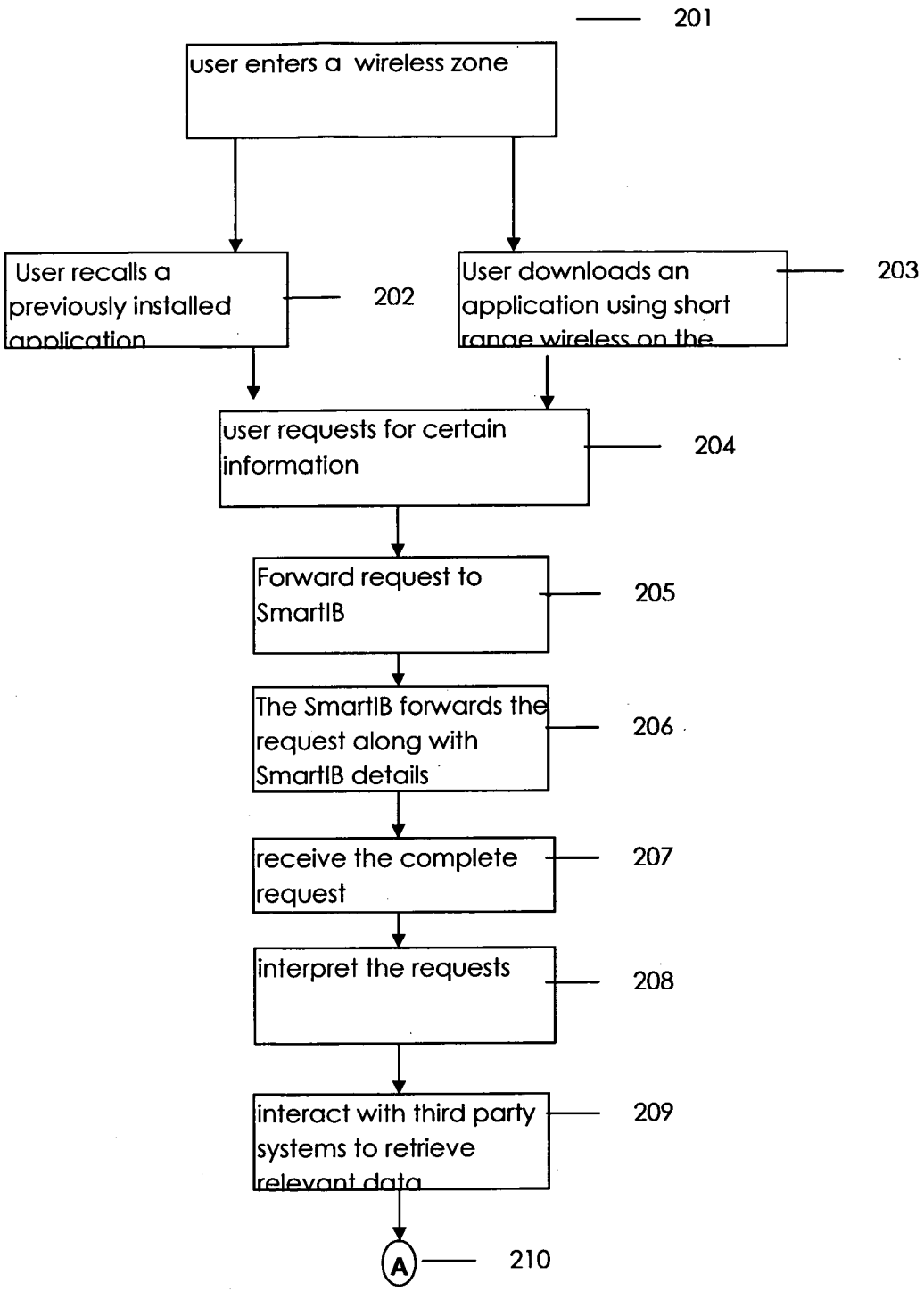
201
user enters a wireless zone
User recalls a previously installed application
202
User downloads an application using short range wireless on the
203
user requests for certain information
204
Forward request to SmartIB
205
The SmartIB forwards the request along with SmartIB details
206
receive the complete request
207
interpret the requests
208
interact with third party systems to retrieve relevant data
209
A
210

FIGURE 2

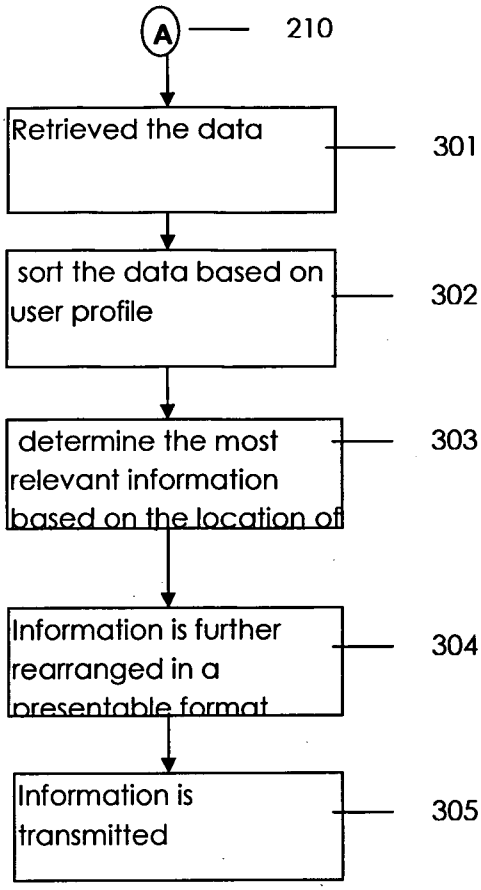
A
210
Retrieved the data
301
sort the data based on user profile
302
determine the most relevant information based on the location of
303
Information is further rearranged in a presentable format
304
Information is transmitted
305

FIGURE 3

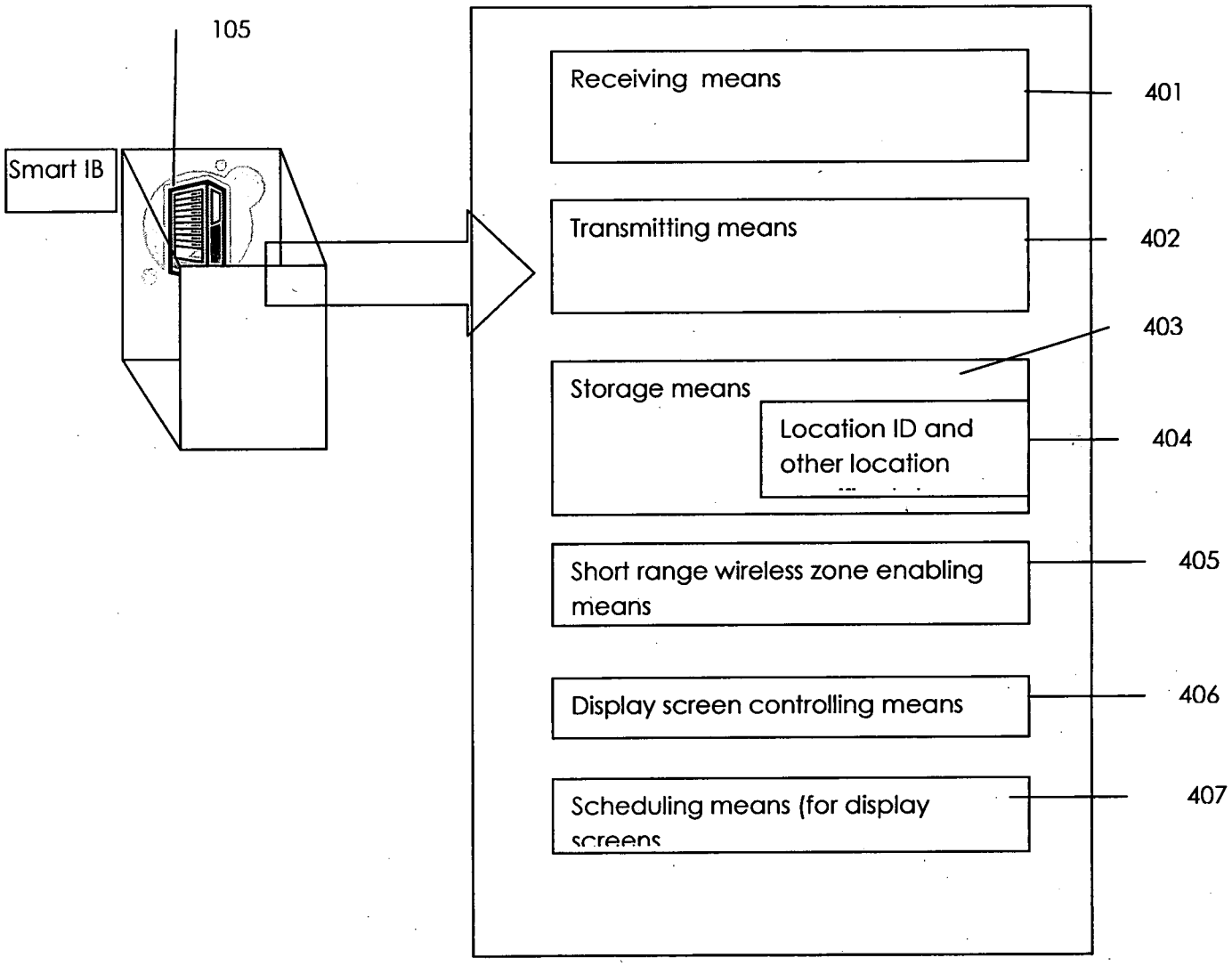
105
Smart IB
Receiving means
401
Transmitting means
402
403
Storage means
Location ID and other location
404
Short range wireless zone enabling means
405
Display screen controlling means
406
Scheduling means (for display screens
407

FIGURE 4