(54) Title: A NAVIGATION DEVICE AND A METHOD FOR PROVIDING POINTS OF INTEREST

(57) Abstract: A method and a navigation device are disclosed for displaying a rich content document. The navigation device includes a display device to display a point of interest browser including multiple points of interest entries and an input device to receive an input from a user for selecting at least one of the multiple points of interest entries. The display device displays map information including a first icon associated with the selected point of interest entry. Rich content associated with the selected at least one point of interest entry is available to the user via the display device.

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A NAVIGATION DEVICE AND A METHOD FOR PROVIDING POINTS OF INTEREST

Field
The present application generally relates to navigation methods and devices.

Background
Navigation devices were traditionally utilized mainly in the areas of vehicle use, such as in cars, motorcycles, trucks, boats, etc. Alternatively, if such navigation devices were portable, they were further transferable between vehicles and/or useable outside the vehicle, for foot travel for example. These devices provide a user with directions and map information to direct the user from one location to another location. The map information displayed can also include the name and telephone number of one or more points of interest.

SUMMARY
In at least one embodiment of the present application, a navigation device includes a display device to display a point of interest browser including multiple point of interest entries and an input device to receive an input from a user for selecting at least one of the multiple point of interest entries. The display device displays map information including a first icon associated with the selected point of interest entry. Rich content associated with the selected at least one point of interest entry is available to the user via the display device.

In at least one embodiment of the present application, a navigation device includes an input device to receive an input from a user for selecting at least one point of interest entry and a display device to display rich content associated with the selected at least one point of interest entry.

In at least one embodiment of the present application, a method includes displaying a point of interest browser including multiple point of interest entries, receiving an input from a user for selecting at least one of the multiple point of interest entries, and displaying map information including a first icon associated with the selected point of interest.
interest entry. Rich content associated with the selected at least one point of interest entry is available to the user via the display device.

In at least one embodiment of the present application, a method includes receiving an input from a user for selecting at least one point of interest entry and displaying rich content associated with the selected at least one point of interest entry.

In at least one embodiment of the present application, a navigation device includes means for displaying a point of interest browser including multiple point of interest entries, means for receiving an input from a user for selecting at least one of the multiple point of interest entries, and wherein the means for displaying displays map information including a first icon associated with the selected point of interest entry. Rich content associated with the selected at least one point of interest entry is available to the user via the display device.

In at least one embodiment of the present application, a navigation device includes means for receiving an input from a user for selecting at least one point of interest entry and means for displaying rich content associated with the selected at least one point of interest entry.

**BRIEF DESCRIPTION OF THE DRAWINGS**

The present application will be described in more detail below by using example embodiments, which will be explained with the aid of the drawings, in which:

Figure 1 illustrates an example view of a Global Positioning System (GPS);

Figure 2 illustrates an example block diagram of electronic components of a navigation device of an embodiment of the present application;

Figure 3 illustrates an example block diagram of a server, navigation device and connection therebetween of an embodiment of the present application;

Figure 4A illustrates a perspective view of a navigation device separated from an arm of a docking station;

Figure 4B illustrates a perspective view of a navigation device connected to the arm of the docking station;

Figure 5 illustrates an example display of a rich content document with bolded, italicized and underlined text for display;
Figure 6 illustrates an example display of a rich content document with strikethroughs for display; 
Figure 7 illustrates an example display of a rich content document with mixed text and images for display; 
Figure 8 illustrates an example display of a rich content document with a hyperlink for display. 
Figure 9A illustrates an example display of a rich content document for display; 
Figure 9B illustrates an example display of a rich content document of Figure 8A with text size increased for display; 
Figure 10 illustrates an example display of a document browser for display; 
Figure 11 illustrates a method including displaying rich content associated with the selected at least one of point of interest entry; 
Figure 12 illustrates a method including displaying a point of interest browser; 
Figure 13 illustrates an example display of map information including a first icon; 
Figure 14 illustrates an example display of a POI menu for display; 
Figure 15 illustrates an example display of a POI category select menu for display; 
Figure 16 illustrates an example display of a POI category search menu for display; and 
Figure 17 illustrates an example display of a map information with a dial function for display.

DETAILED DESCRIPTION OF THE EXAMPLE EMBODIMENTS
The terminology used herein is for the purpose of describing particular embodiments only and is not intended to be limiting of the present invention. As used herein, the singular forms "a", "an", and "the" are intended to include the plural forms as well, unless the context clearly indicates otherwise. It will be further understood that the terms "includes" and/or "including", when used in this specification, specify the presence of stated features, integers, steps, operations, elements, and/or components, but do not preclude the presence or addition of one or more other features, integers, steps, operations, elements, components, and/or groups thereof.

In describing example embodiments illustrated in the drawings, specific terminology is employed for the sake of clarity. However, the disclosure of this patent specification is
not intended to be limited to the specific terminology so selected and it is to be understood that each specific element includes all technical equivalents that operate in a similar manner.

Referencing the drawings, wherein like reference numerals designate identical or corresponding parts throughout the several views, example embodiments of the present patent application are hereafter described. Like numbers refer to like elements throughout. As used herein, the term "and/or" includes any and all combinations of one or more of the associated listed items.

Figure 1 illustrates an example view of Global Positioning System (GPS), usable by navigation devices, including the navigation device of embodiments of the present application. Such systems are known and are used for a variety of purposes. In general, GPS is a satellite-radio based navigation system capable of determining continuous position, velocity, time, and in some instances direction information for an unlimited number of users.

Formerly known as NAVSTAR, the GPS incorporates a plurality of satellites which work with the earth in extremely precise orbits. Based on these precise orbits, GPS satellites can relay their location to any number of receiving units.

The GPS system is implemented when a device, specially equipped to receive GPS data, begins scanning radio frequencies for GPS satellite signals. Upon receiving a radio signal from a GPS satellite, the device determines the precise location of that satellite via one of a plurality of different conventional methods. The device will continue scanning, in most instances, for signals until it has acquired at least three different satellite signals (noting that position is not normally, but can be determined, with only two signals using other triangulation techniques). Implementing geometric triangulation, the receiver utilizes the three known positions to determine its own two-dimensional position relative to the satellites. This can be done in a known manner. Additionally, acquiring a fourth satellite signal will allow the receiving device to calculate its three dimensional position by the same geometrical calculation in a known manner. The position and velocity data can be updated in real time on a continuous basis by an unlimited number of users.

As shown in Figure 1, the GPS system is denoted generally by reference numeral 100. A plurality of satellites 120 are in orbit about the earth 124. The orbit of each satellite 120 is not necessarily synchronous with the orbits of other satellites 120 and, in fact,
is likely asynchronous. A GPS receiver 140, usable in embodiments of navigation devices of the present application, is shown receiving spread spectrum GPS satellite signals 160 from the various satellites 120. The spread spectrum signals 160, continuously transmitted from each satellite 120, utilize a highly accurate frequency standard accomplished with an extremely accurate atomic clock. Each satellite 120, as part of its data signal transmission 160, transmits a data stream indicative of that particular satellite 120. It is appreciated by those skilled in the relevant art that the GPS receiver device 140 generally acquires spread spectrum GPS satellite signals 160 from at least three satellites 120 for the GPS receiver device 140 to calculate its two-dimensional position by triangulation. Acquisition of an additional signal, resulting in signals 160 from a total of four satellites 120, permits the GPS receiver device 140 to calculate its three-dimensional position in a known manner.

Figure 2 illustrates an example block diagram of electronic components of a navigation device 200 of an embodiment of the present application, in block component format. It should be noted that the block diagram of the navigation device 200 is not inclusive of all components of the navigation device, but is only representative of many example components.

The navigation device 200 is located within a housing (not shown). The housing includes a processor 210 connected to an input device 220 and a display screen 240. The input device 220 can include a keyboard device, voice input device, touch panel and/or any other known input device utilized to input information; and the display screen 240 can include any type of display screen such as an LCD display, for example. In at least one embodiment of the present application, the input device 220 and display screen 240 are integrated into an integrated input and display device, including a touchpad or touchscreen input wherein a user need only touch a portion of the display screen 240 to select one of a plurality of display choices or to activate one of a plurality of virtual buttons.

In addition, other types of output devices 250 can also include, including but not limited to, an audible output device. As output device 250 can produce audible information to a user of the navigation device 200, it is equally understood that input device 240 can also include a microphone and software for receiving input voice commands as well.
In the navigation device 200, processor 210 is operatively connected to and set to receive input information from input device 240 via a connection 225, and operatively connected to at least one of display screen 240 and output device 250, via output connections 245, to output information thereto. Further, the processor 210 is operatively connected to memory 230 via connection 235 and is further adapted to receive/send information from/to input/output (I/O) ports 270 via connection 275, wherein the I/O port 270 is connectible to an I/O device 280 external to the navigation device 200. The external I/O device 270 may include, but is not limited to an external listening device such as an earpiece for example. The connection to I/O device 280 can further be a wired or wireless connection to any other external device such as a car stereo unit for hands-free operation and/or for voice activated operation for example, for connection to an ear piece or head phones, and/or for connection to a mobile phone for example, wherein the mobile phone connection may be used to establish a data connection between the navigation device 200 and the internet or any other network for example, and/or to establish a connection to a server via the internet or some other network for example.

The navigation device 200, in at least one embodiment, may establish a "mobile" network connection with the server 302 via a mobile device 400 (such as a mobile phone, PDA, and/or any device with mobile phone technology) establishing a digital connection (such as a digital connection via known Bluetooth technology for example). Thereafter, through its network service provider, the mobile device 400 can establish a network connection (through the internet for example) with a server 302. As such, a "mobile" network connection is established between the navigation device 200 (which can be, and often times is mobile as it travels alone and/or in a vehicle) and the server 302 to provide a "real-time" or at least very "up to date" gateway for information.

The establishing of the network connection between the mobile device 400 (via a service provider) and another device such as the server 302, using the internet 410 for example, can be done in a known manner. This can include use of TCP/IP layered protocol for example. The mobile device 400 can utilize any number of communication standards such as CDMA, GSM, WAN, etc.

As such, an internet connection may be utilized which is achieved via data connection, via a mobile phone or mobile phone technology within the navigation device 200 for example. For this connection, an internet connection between the server 302 and the
navigation device 200 is established. This can be done, for example, through a mobile phone or other mobile device and a GPRS (General Packet Radio Service)-connection (GPRS connection is a high-speed data connection for mobile devices provided by telecom operators; GPRS is a method to connect to the internet.

The navigation device 200 can further complete a data connection with the mobile device 400, and eventually with the internet 410 and server 302, via existing Bluetooth technology for example, in a known manner, wherein the data protocol can utilize any number of standards, such as the GSRM, the Data Protocol Standard for the GSM standard, for example.

The navigation device 200 may include its own mobile phone technology within the navigation device 200 itself (including an antenna for example, wherein the internal antenna of the navigation device 200 can further alternatively be used). The mobile phone technology within the navigation device 200 can include internal components as specified above, and/or can include an insertable card, complete with necessary mobile phone technology and/or an antenna for example. As such, mobile phone technology within the navigation device 200 can similarly establish a network connection between the navigation device 200 and the server 302, via the internet 410 for example, in a manner similar to that of any mobile device 400.

For GRPS phone settings, the Bluetooth enabled device may be used to correctly work with the ever changing spectrum of mobile phone models, manufacturers, etc., model/manufacturer specific settings may be stored on the navigation device 200 for example. The data stored for this information can be updated in a manner discussed in any of the embodiments, previous and subsequent.

Figure 2 further illustrates an operative connection between the processor 210 and an antenna/ receiver 250 via connection 255, wherein the antenna/ receiver 250 can be a GPS antenna/ receiver for example. It will be understood that the antenna and receiver designated by reference numeral 250 are combined schematically for illustration, but that the antenna and receiver may be separately located components, and that the antenna may be a GPS patch antenna or helical antenna for example.

Further, it will be understood by one of ordinary skill in the art that the electronic components shown in Figure 2 are powered by power sources (not shown) in a conventional manner. As will be understood by one of ordinary skill in the art, different configurations of the components shown in Figure 2 are considered within
the scope of the present application. For example, in one embodiment, the
components shown in Figure 2 may be in communication with one another via wired
and/or wireless connections and the like. Thus, the scope of the navigation device
200 of the present application includes a portable or handheld navigation device 200.
In addition, the portable or handheld navigation device 200 of Figure 2 can be
connected or "docked" in a known manner to a motorized vehicle such as a car or boat
for example. Such a navigation device 200 is then removable from the docked location
for portable or handheld navigation use.

Figure 3 illustrates an example block diagram of a server 302 and a navigation device
200 of the present application, via a generic communications channel 318, of an
embodiment of the present application. The server 302 and a navigation device 200 of
the present application can communicate when a connection via communications
channel 318 is established between the server 302 and the navigation device 200
(noting that such a connection can be a data connection via mobile device, a direct
connection via personal computer via the internet, etc.).
The server 302 includes, in addition to other components which may not be
illustrated, a processor 304 operatively connected to a memory 306 and further
operatively connected, via a wired or wireless connection 314, to a mass data storage
device 312. The processor 304 is further operatively connected to transmitter 308 and
receiver 310, to transmit and send information to and from navigation device 200 via
communications channel 318. The signals sent and received may include data,
communication, and/or other propagated signals. The transmitter 308 and receiver
310 may be selected or designed according to the communications requirement and
communication technology used in the communication design for the navigation
system 200. Further, it should be noted that the functions of transmitter 308 and
receiver 310 may be combined into a signal transceiver.

Server 302 is further connected to (or includes) a mass storage device 312, noting that
the mass storage device 312 may be coupled to the server 302 via communication link
314. The mass storage device 312 contains a store of navigation data and map
information, and can again be a separate device from the server 302 or can be
incorporated into the server 302.
The navigation device 200 is adapted to communicate with the server 302 through
communications channel 318, and includes processor, memory, etc. as previously
described with regard to Figure 2, as well as transmitter 320 and receiver 322 to send and receive signals and/or data through the communications channel 318, noting that these devices can further be used to communicate with devices other than server 302. Further, the transmitter 320 and receiver 322 are selected or designed according to communication requirements and communication technology used in the communication design for the navigation device 200 and the functions of the transmitter 320 and receiver 322 may be combined into a single transceiver. Software stored in server memory 306 provides instructions for the processor 304 and allows the server 302 to provide services to the navigation device 200. One service provided by the server 302 involves processing requests from the navigation device 200 and transmitting navigation data from the mass data storage 312 to the navigation device 200. According to at least one embodiment of the present application, another service provided by the server 302 includes processing the navigation data using various algorithms for a desired application and sending the results of these calculations to the navigation device 200.

The communication channel 318 generically represents the propagating medium or path that connects the navigation device 200 and the server 302. According to at least one embodiment of the present application, both the server 302 and navigation device 200 include a transmitter for transmitting data through the communication channel and a receiver for receiving data that has been transmitted through the communication channel.

The communication channel 318 is not limited to a particular communication technology. Additionally, the communication channel 318 is not limited to a single communication technology; that is, the channel 318 may include several communication links that use a variety of technology. For example, according to at least one embodiment, the communication channel 318 can be adapted to provide a path for electrical, optical, and/or electromagnetic communications, etc. As such, the communication channel 318 includes, but is not limited to, one or a combination of the following: electric circuits, electrical conductors such as wires and coaxial cables, fiber optic cables, converters, radio-frequency (rf) waves, the atmosphere, empty space, etc. Furthermore, according to at least one various embodiment, the communication channel 318 can include intermediate devices such as routers, repeaters, buffers, transmitters, and receivers, for example.
In at least one embodiment of the present application, for example, the communication channel 318 includes telephone and computer networks. Furthermore, in at least one embodiment, the communication channel 318 may be capable of accommodating wireless communication such as radio frequency, microwave frequency, infrared communication, etc. Additionally, according to at least one embodiment, the communication channel 318 can accommodate satellite communication.

The communication signals transmitted through the communication channel 318 include, but are not limited to, signals as may be required or desired for given communication technology. For example, the signals may be adapted to be used in cellular communication technology such as Time Division Multiple Access (TDMA), Frequency Division Multiple Access (FDMA), Code Division Multiple Access (CDMA), Global System for Mobile Communications (GSM), etc. Both digital and analogue signals can be transmitted through the communication channel 318. According to at least one embodiment, these signals may be modulated, encrypted and/or compressed signals as may be desirable for the communication technology.

The mass data storage 312 includes sufficient memory for the desired navigation applications. Examples of the mass data storage 312 may include magnetic data storage media such as hard drives for example, optical storage media such as CD-Roms for example, charged data storage media such as flash memory for example, molecular memory, etc.

According to at least one embodiment of the present application, the server 302 includes a remote server accessible by the navigation device 200 via a wireless channel. According to at least one other embodiment of the application, the server 302 may include a network server located on a local area network (LAN), wide area network (WAN), virtual private network (VPN), etc.

According to at least one embodiment of the present application, the server 302 may include a personal computer such as a desktop or laptop computer, and the communication channel 318 may be a cable connected between the personal computer and the navigation device 200. Alternatively, a personal computer may be connected between the navigation device 200 and the server 302 to establish an internet connection between the server 302 and the navigation device 200. Alternatively, a mobile telephone or other handheld device may establish a wireless
connection to the internet, for connecting the navigation device 200 to the server 302 via the internet.

The navigation device 200 may be provided with information from the server 302 via information downloads which may be periodically updated upon a user connecting navigation device 200 to the server 302 and/or may be more dynamic upon a more constant or frequent connection being made between the server 302 and navigation device 200 via a wireless mobile connection device and TCP/IP connection for example. For many dynamic calculations, the processor 304 in the server 302 may be used to handle the bulk of the processing needs, however, processor 210 of navigation device 200 can also handle much processing and calculation, oftentimes independent of a connection to a server 302.

The mass storage device 312 connected to the server 302 can include volumes more cartographic and route data than that which is able to be maintained on the navigation device 200 itself, including maps, etc. The server 302 may process, for example, the majority of the devices of a navigation device 200 which travel along the route using a set of processing algorithms. Further, the cartographic and route data stored in memory 312 can operate on signals (e.g. GPS signals), originally received by the navigation device 200.

As indicated above in Figure 2 of the application, a navigation device 200 of an embodiment of the present application includes a processor 210, an input device 220, and a display screen 240. In at least one embodiment, the input device 220 and display screen 240 are integrated into an integrated input and display device to enable both input of information (via direct input, menu selection, etc.) and display of information through a touch panel screen, for example. Such a screen may be a touch input LCD screen, for example, as is well known to those of ordinary skill in the art. Further, the navigation device 200 can also include any additional input device 220 and/or any additional output device 240, such as audio input/output devices for example.

Figures 4A and 4B are perspective views of an actual implementation of an embodiment of the navigation device 200. As shown in Fig. 4A, the navigation device 200 may be a unit that includes an integrated input and display device 290 (a touch panel screen for example) and the other components of figure 2 (including but not
limited to internal GPS receiver 250, microprocessor 210, a power supply, memory systems 220, etc.).
The navigation device 200 may sit on an arm 292, which itself may be secured to a vehicle dashboard/window/etc. using a large suction cup 294. This arm 292 is one example of a docking station to which the navigation device 200 can be docked. As shown in Fig. 4B, the navigation device 200 can be docked or otherwise connected to an arm 292 of the docking station by snap connecting the navigation device 292 to the arm 292 for example (this is only one example, as other known alternatives for connection to a docking station are within the scope of the present application). The navigation device 200 may then be rotatable on the arm 292, as shown by the arrow of Fig. 4B. To release the connection between the navigation device 200 and the docking station, a button on the navigation device 200 may be pressed, for example (this is only one example, as other known alternatives for disconnection to a docking station are within the scope of the present application).

According to embodiments of the present application, a navigation device 200 includes a display device 240 to display a point of interest browser including multiple point of interest entries and an input device 220 to receive an input from a user for selecting at least one of the multiple point of interest entries. The display device 240 displays map information including a first icon associated with the selected point of interest entry. Rich content associated with the selected at least one of point of interest entry is available to the user via the display device.

According to embodiments of the present application, a navigation device 200 includes an input device 220 to receive an input from a user for selecting at least one point of interest entry and a display device 240 to display rich content associated with the selected at least one of point of interest entry.

According to embodiments of the present application, a method includes displaying a point of interest browser including multiple point of interest entries, receiving an input from a user for selecting at least one of the multiple point of interest entries, and displaying map information including a first icon associated with the selected point of interest entry. Rich content associated with the selected at least one of point of interest entry is available to the user via the display device.
According to embodiments of the present application, a method includes receiving an input from a user for selecting at least one point of interest entry and displaying rich content associated with the selected at least one point of interest entry.

According to embodiments of the present application, a navigation device 200 includes means for displaying a point of interest browser including multiple point of interest entries, means for receiving an input from a user for selecting at least one of the multiple point of interest entries, and wherein the means for displaying displays map information including a first icon associated with the selected point of interest entry. Rich content associated with the selected at least one of point of interest entry is available to the user via the display device.

According to embodiments of the present application, a navigation device 200 includes means for receiving an input from a user for selecting at least one point of interest entry and means for displaying rich content associated with the selected at least one of point of interest entry.

According to another aspect of the present application, a rich content document is a document which includes something more than plain text. Rich content can include one or more of formatting, mixed text and images, a link to a local document, a link to a document via a network connection. The rich content can be included or embedded in a document or introduced to the document from a different location through a mark-up or a description language.

An example display of a rich content document is shown in Figure 4. The rich content document shown in Figure 4 includes formatted text. As shown, the document includes different sized text. The text has been bolded, italicized, and/or underlined. Also, the text is shown in different colors (only gray scale visible). Text is shown to be left justified and centered in the display. Text can also be right justified in other rich content documents. In still other displays of the present disclosure, different types of fonts can also be used. As illustrated in Figure 5, text can be a superscript or a subscript. The text is also shown with strikethroughs. In other embodiments of the present application, text included in a document can be considered rich content by formatting the text according to the formats listed above and other known to those skilled in the art.

In addition to formatted text, rich content can include mixed text and images, as shown in Figure 6. Mixed text and images can be described as placement of images in
the body of a text document such that the text is ordered around the image without covering and/or changing the substance of the text. The document displayed in Figure 6 is a document in which the images are embedded in the document. When the rich content document is displayed on a display device 240, the document does not call another document. In other words, the entire rich content of the document lives or is stored in the document. Alternatively, an image or another document can be included in a rich content document via a link included in the document. In such a case, the link in the document is rich content. The link can call a document stored in a memory 230 associated with a navigation device 200. When the rich content document is displayed on a display device 240 of the navigation device 200, the link calls the document from memory 230 and displays the document as defined by the link. The link allows a single stored image document, audio document, and/or video document to be included in a number of different rich content documents without being stored in more than one location. Such a link is often referred to as a hyperlink. In addition to documents stored in memory 230 associated with a navigation device 200, a link can also call documents via a network connection.

For a document called through a network connection, a hyperlink defines a location of a document being called by the link. In such a case, a navigation device communicates with the network and retrieves a document specified by the link. The network can be one of several different types of networks. For example, a network can be one of a local area network (LAN), a metropolitan area network (MAN), a wide area network (WAN), a virtual private network (VPN) etc. A network can be one of several different sizes depending of the implementation of the particular navigation device 200. The network can also be a private network, such that it accessibility is limited to a group of users. As an example, a service provider of a navigation device 200 can setup a private network for its subscribers. Each of the subscribers (navigation device users) is able to access documents stored on one or more servers hosted by the service provider, such as the mass storage device 312. The navigation device 200 is able to access a rich content document or a document linked by other documents in the navigation device 200 via the connection to the hosted server(s).

Alternatively, the network can be connected through an internet service provider (ISP) using a TCP/IP connection. In such a case, a rich content document can be a
webpage or a document including a link to a webpage. When a webpage is provided as rich content by a third party, the navigation device 200 processes the webpage. The content has to be reduced to an organized and visible. Each subject in a webpage is aligned and clarified with one or more icons to make the rich content attractive and viewable on the navigation device 200. As illustrated in Figure 8, an example display of a rich content document includes a hyperlink to a webpage for "Victor Hugo." By selecting the hyperlink, a user of the navigation device 200 opens a webpage defined by the link. In this case, the link is a webpage related to "Victor Hugo."

As referenced above, a link can call an image document, an audio document, a video document, and other types of documents. In one implementation, a video document can be a live video link acquired through a network connection provided through an ISP to a navigation device 200. For example, a live video document can be a webpage including a web camera view on an intersection at Washington Street and Main Street. When the rich content document is displayed on the display device, the link calls the web camera video document through the network connection and displays the virtually live video document of the intersection on a display device 240 of the navigation device 200.

Rich content documents can include rich content embedded in a document or be written such that rich content is described in a document. A link to another document is one example of description language. As understood by one skilled in the art, description language can be used to provide rich content as described above. For example, a document can be written in a mark-up language such as HTML to include specific formats and/or links to other documents. When the display device 240 of the navigation device 200 displays the rich content document, the instruction provided in the document dictate how rich content is to be displayed. In addition to HTML, another language in which tags specify the appearance of a document can be used. For example, XHTML (Extensible Hypertext Markup Language), XML (Extensible Markup Language), or a different structure type language may provide rich content to a document.

As shown in Figures 5-8, each example display includes control buttons along the right and bottom edges of the display. The buttons are control inputs for a user of the navigation device 200 on which a display is displayed. The control buttons allow the user to adjust the view of the display by scrolling up and down (arrows), paging up
and down, going to home/top, and going to the end/bottom of a rich content document. The appearance of a control button can be changed to indicate a control button is disabled. For example, when the end of a rich content document is already being displayed, the appearance of the scroll down button can be grayed to indicate the scroll down button is disabled, i.e. the document cannot be scrolled down further. Along the bottom of the example displays in Figure 5-8, three buttons are displayed, which can receive a user input. The find button allows a user of a navigation device to find a word, a part of a word, or phrase in the rich content document. When the user selects the find button, a find display prompts the user to enter a search term. After entering the search term, the navigation device 200 sequentially finds each inclusion of the search term in the rich content document in response to a user input. Along with the find button, the bottom of the display also includes a back button and a done button. The back button allows a user to view the previous display. The done button allows the user to exit the rich content document and return to a menu or prior task, such as some displayed map information.

As shown in Figure 9A and 9B, a user of a navigation device can increase or decrease the size of text displayed on the navigation device. Increasing the text of the document allows the user of the navigation device to see text clearly while possibly distracted by other activities, such as driving or walking. Unlike text displayed on a display device, an image and/or video document is shown as large as the image is provided to the display device when possible. The image or video document is only shrunk when the document includes a format larger that a display device 240 in a navigation device 200.

Control of the rich content document also includes the ability to select or highlight text and/or links. As shown in Figure 8, a user has highlighted "uitzichf within the text of the rich content document. A user can highlight text and/or other rich content within a document for several purposes. For example, a user can highlight a word, as shown in Figure 8, and utilize the find function to find other occurrences of the highlighted word in the rich content document. Also, a user can select a link to another document. In the example display of Figure 8, the hyperlink to "Victor Hugo" can be selected by a user to display the webpage related to Victor Hugo. Additionally, a user can select content of a document and request map information related to the selected content. For example, a user can select a restaurant link within a rich
content document and request a navigation device 200 to plan a route between a current location of the user and the location of the restaurant. Once the route is planned, the planned route is displayed on a display device 240 of the navigation device 200 such that the user can navigate to the restaurant.

Rich content document can be displayed on navigation device 200 as part of a number of different features. A rich content document can be viewed in response to a user request for the specific document. In such a case, a user can select a rich content document from a document browser. An exemplary display of a document browser is illustrated in Figure 10. The document browser can be selected from a menu by a user of a navigation device 200. The document browser allows the user to search and select a document to be displayed on a display device 240 of the navigation device 200. The document browser can list available documents and folders or display the available documents and folders as thumbnails (illustrated in Figure 10). As shown in Figure 10, a user can select a folder in the document browser. By selecting a folder, the documents and/or folders contained in the folder are displayed in the display device. The user is able to provide a further input to select one of the documents and/or folders displayed, and so on. As shown, a title bar is displayed to indicate which folder or document is being displayed.

A user of the navigation device 200 can create a folder and organize documents and/or folders by dragging and dropping the documents and/or folder into/out of a folder. The use can also delete documents and folders. The document browser also includes a search function such that a user can search for a document. As described above with respect rich content documents, a document browser can also include control button, such as scroll up and down.

Apart from the document browser, a rich content document can be displayed according another feature of a navigation device 200. For example, a rich content document can be displayed in the Help, Third Party Document, and/or Tourist Information features of the navigation device. Rich content documents are viewed in response to features described in corresponding applications. In one feature of a navigation device 200, a rich content document associated with a point of interest can be displayed.

According to one implementation of at least one embodiment, a method 1100 includes step 1102 for receiving an input from a user for selecting at least one point of interest
entry. A point of interest can generally be understood to be a location, place and/or event that someone may find useful or interesting. The method 1100 also includes the step 1104 for displaying rich content associated with the selected at least one of point of interest entry. An example display of rich content associated with a selected point of interest entry is illustrated in Figure 7, above. The point of interest is the Notre Dame Cathedral.

It should be noted that each of the aforementioned aspects of an embodiment of the present application have been described with regard to the method of the present application. However, at least one embodiment of the present application is directed to a navigation device 200, including an input device 220 to receive an input from a user for selecting at least one point of interest entry and a display device 240 to display rich content associated with the selected at least one of point of interest entry. Thus, such a navigation device 200 may be used to perform the various aspects of the method described with regard to Figures 7-17, as would be understood by one of ordinary skill in the art. Thus, further explanation is omitted for the sake of brevity. Accordingly to another implementation of at least one embodiment of the invention, a method 1200 includes step 1202 for displaying a point of interest browser including multiple point of interest entries and step 1204 for receiving an input from a user for selecting at least one of the multiple point of interest entries. The method 1200 also include step 1206 for displaying map information including a first icon associated with the selected point of interest entry. As shown in Figure 13, an example display illustrates map information including a first icon associated with an inn, Tulip Inn. It should be noted that each of the aforementioned aspects of an embodiment of the present application have been described with regard to the method of the present application. However, at least one embodiment of the present application is directed to a navigation device 200, including a display device 240 to display a point of interest browser including multiple point of interest entries and an input device 220 to receive an input from a user for selecting at least one of the multiple point of interest entries. The display device also displays map information including a first icon associated with the selected point of interest entry. Rich content associated with the selected at least one of point of interest entry is available to the user via the display device. Thus, such a navigation device 200 may be used to perform the various aspects of the method.
described with regard to Figures 7-17, as would be understood by one of ordinary skill in the art. Thus, further explanation is omitted for the sake of brevity.

As shown in Figure 13, the rich content associated with the point of interest entry is available to the user via the display device 240. The user provides an input a detail button. When the user provides an input to the detail button, the navigation device 200 displays rich content associated with the POI entry.

A variety of points of interest can be made available to a user of a navigation device 200. A point of interest can be any one of a government office, a mountain peak, open parking, a parking garage, a petrol station, a railway station, a rest area, an airport, a car dealership, a casino, a church, a cinema, a city centre, a company, a concert hall, a courthouse, a cultural centre, an exhibition centre, a ferry terminal, a border crossing, a golf course, a hospital/clinic, a hotel, a motel, a tourist attraction, a mountain pass, a museum, an art gallery, an opera house, an opera, a place of worship, a post office, a shipping company, a car rental facility, a restaurant, a shop, a mall, a shopping centre, a stadium, a sports arena, a theatre, a tourist information office, a zoo, a sports centre, a police station, a firehouse, an embassy, a college or university, a cash dispenser, a beach, a ice skating rink, a tennis court, a water sport, a doctor, a dentist, a veterinarian, nightlife, an amusement park, a library, a care repair/ garage, a pharmacy, a scenic view, a panoramic view, a swimming pool, a winery, a distiller, a camping ground, a park and recreation area, a convention center, a leisure centre, a marina, a yacht basin, a postcode, a legislator, a lawyer, a solicitor, a counselor, etc.

The rich content can be several different types of information associated with the POI entry. The following examples are presented for illustration purposes. The scope of the rich content associated with the POI entry is not intended to be limited to these explicitly examples of point of interest. Any type of information associated with the POI entry can be included as rich content.

According to at least one embodiment of the present application, a user of a navigation device 200 may decide to find a restaurant as the user travels along a planned route. The user can provide an input, which is received by the navigation device 200, to command the navigation device to display POI entries along the planned route. The user can specify criteria for displaying the POI entries as related to the planned route, e.g. within one kilometer of the planned route. As displayed, the POI entries include a
name of each restaurant POI entry. When the user selects a restaurant from the POI entries displayed, the user can select a detail button (as shown in Figure 13). When the navigation device 200 receives an input at input device 220, the navigation device 200 displays rich content associated with the POI entry for the restaurant. The rich content document can include a menu for the restaurant, an average price per entree, a brief description of the restaurant, and/or hours in which the restaurant is open. In some cases, the rich content can even include reviews of the restaurant, such as reviews by customers and/or critics. After viewing the details associated with the POI entry, the navigation device can receive a user input to plan a route to the point of interest or alter the current planned route to include the point of interest. Alternately, the user can select a different POI entry and view rich content associated with the different POI entry. The navigation device 200 can continue displaying different POI entries until the user finally selects one of the POI entries or exits the POI browser and/or map information including the POI entries.

In another example, a POI entry can be a movie theatre. When a user selects the detail button, rich content associated with the movie theatre can include names of movies being shown, movie times, and ticket prices. In yet another example, a POI entry is a hotel with rich content associated being pictures of the hotel, a description of hotel amenities, rates and availability of rooms at the hotel, etc. In still another example, a POI entry can be a fuel/gasoline station with rich content being hours of operation and current fuel prices at the station. In other implementations, rich content associated with a point of interest entry can include hours of operations of a POI entry, times of events at a POI entry, pictures of a POI entry, reviews of a POI entry, costs and/or prices at the POI entry, news related to the POI entry, smoking permitted at the POI, or any other useful information related to a POI entry. Rich content can also include copyright information for rich content and/or plain text displayed on the navigation device 200.

Several other options for selecting a POI entry exist. As illustrated in the example display of Figure 14, a user can select a POI entry near the user's current location, a POI entry along a route (as above), a POI entry in a city, a POI entry near a home location, or a POI entry near a destination. The user can select a POI entry based on these options before a route is planned, after a route is planned, or without planning a route. In one implementation, a user can specify one or more points of interest to be
included in a planned route. For example, if a user was driving from northern California to southern California, the user could search the POI entries included in a beach category. The user can provide inputs to the navigation device such that a route planned by the navigation device 200 includes the beach POI entries selected by the user. Additionally, a user can plan a route on a navigation device 200 based on the location of a point of interest. Once the POI entry is selected, the user can direct the navigation device 200 to display a planned route to the POI entry. As the user proceeds to the point of interest, the navigation device 200 can also display a distance from the point of interest on the display device and provide an audible and/or visible warning when the user is a distance from the point of interest entry, such as one mile. A point of interest can also be selected from a POI browser. An exemplary display of a POI browser is shown in Figure 15. The POI browser is displayed such that a user is able to select a POI category. As shown in the example display of Figure 15, a user can select from categories including beach, border crossing, camping grounds, etc. The POI browser includes scroll up and scroll down control buttons to scroll up/down to view additional categories. As shown in Figure 16, a user can also input the category through keying the spelling or initial letters of a category in a keypad displayed a navigation device 200. After selecting a POI category, the user is able to select one or more POI entries within the POI category. In one implementation of at least one embodiment, a user can select all POI entries in a POI category displayed on a navigation device 200. The navigation device 200 then displays each of the POI entries sequentially on a display device 240 of the navigation device 200. The user steps through the POI entries until the user selects one. As the user steps through the POI entries, each is displayed along with map information and the option to view rich content associated with the POI entry. In another implementation of at least one embodiment, all of the selected POI entries can be displayed in the map information at one time. Of course, only the POI entries within the boundaries of the displayed map information are displayed on a display device 240 of the navigation device 200. The other POI entries are included as the view on the display device 240 is changed to include map information in which the POI entries are included. The user is then able to individually select each POI entry to view rich content associated with POI entry. In either implementation, the navigation device 200 can further received a selection of a POI entry and include processor 210 to plan a route including the point of interest.
An advanced search for a point of interest can also be completed on a navigation device 200. For example, a user may specify a particular car service, such as an oil change. The navigation device 200 performs a search of the POI entries, specifically the associated rich content. The navigation device 200, then, displays POI entries that conform to the search entered by the user, i.e. oil change services. The user can provide an input received by the navigation device 200 to select one or more of the POI entries displayed. When a user selects one of the POI entries, the navigation device 200 can plan a route to the POI entry or include the POI entry in an existing planned route.

In a number of implementations of at least one embodiment, a navigation device 200 displays map information along with at least one POI entry. The map information generally gives the user an idea the relative location of the POI entry as compared to the current location of the user, some other location, or a planned route. As shown in Figure 17, when map information is displayed along with a POI entry, a first icon associated with the POI entry is displayed in the map information. The first icon generally indicates the location of the point of interest as included in the map information displayed. As shown in Figure 17, a name and/or a description of the point of interest can also be included in the map information or in a title bar displayed along with the map information. Also, a phone device can be included in a navigation device to connect with the point of interest. As shown in Figure 17, a dial button in the bottom border of the display invokes a dial function to initiate a voice call with the point of interest based on contact information included in the POI entry. POI entries can be stored in memory 230 associate with a navigation device 200.

When the POI entries are stored in memory 230 associated with the navigation device 200, a user of the navigation device 200 can control the view and organization of the POI entries as store in memory 230. Alternatively, POI entries can be accessed via network communication. When accessed through a network connection, the user retains some control of the view and organization of the POI entries.

As stated above, when a selected POI entry is included with map information, a first icon is also displayed in the map information. As shown in Figure 15, a second icon is displayed in the POI browser. The first icon as shown in Figure 13 is visibly smaller than the second icon included in the POI browser shown in Figure 15. If both the first icon and second icon are displayed from a single image document, the first icon would
have to be stretched to be included in the POI browser or the second icon would have to be shrunk to be included in the map information. In either case, stretching or shrinking the icon distorts the image as displayed. In one implementation of at least one embodiment, a first icon and a second icon are stored in different locations, as separate image documents, in a memory 230 associated with the navigation device 200. The image documents are displayed on the navigation device 200 without distortion at a size determined by the user and/or navigation device 200.

Also, a user can change the size of an icon. The user can change the size of an icon as displayed in the POI browser or as included in map information. By changing the size of the icon, a user can differentiate the POI entry from other POI entries displayed by a navigation device. For example, a user can change an icon associated with a restaurant to a smaller icon in the POI browser based on the user's experience at the restaurant. In another implementation of at least one embodiment, a user can change the image of an icon associated with a POI entry. An icon related to the point of interest can be used instead of the generic icon initially assigned to the POI entry. For example, a company logo can be used as an icon for a gasoline station rather than the generic gas pump icon. By allowing a user to change an image and size associated with an icon, icons included in a single category can be different icons, by size and/or image.

A user can also organize POI entries included in POI categories by moving one or more POI entries from one category to another category. Alternatively, the user can copy the POI entries from one category to another category allowing the POI entry to exist in multiple categories. For example, a POI entry for a hotel can be placed in a category called "Favorite Hotels in New York." The user can also allow the hotel to remain in the general "Hotel" category such that the POI entry is included in more than one category. By allowing a POI entry in multiple categories, a navigation device 200 ensures that a POI entry is not omitted from a routine category search of a generic category, such as Hotel in the example above.

In addition to changing the icon of a POI entry, a user can create a POI entry. For example, if a new hotel opens, a user can create a POI entry for the hotel. The user can provide the name and contact information of the hotel and specify an icon for the hotel. The user can also associate rich content with the POI entry, such as content from a webpage publicized by the hotel. When a webpage is provided by a hotel or
another third party, the navigation device 200 processes the webpage. The content has to be reduced to an organized and visible. Each subject in a webpage is aligned and clarified with one or more icons to make the rich content attractive and viewable on a displayed device 240 to a user of the navigation device 200. The rich content can be any of the different types of rich content disclosed above. The user can also associate rich content from a different POI entry included and/or accessible in/by the navigation device 200. Further, a user can associate rich content with existing POI entries.

In another example, a user of a navigation device 200 can create a point of interest entry from a received location message. A location message is a message including a location. When the point of interest entry is created by a user, the location provides a position for a first icon associated with the point of interest entry to be included in the map information. The user can provide further information and rich content to the entry create from the location message. Also, the user can provide an input to the navigation device 200 such that the navigation device 200 plans a route to the location.

In addition to changes made by a user, a navigation device 200 can also update point of interest entries at an interval to account for changes in the points of interest. For example if a restaurant closes, a user of a navigation device would prefer up-to-date information regarding the closing of the restaurant. In one implementation, a navigation device 200 can update the POI entries stored in memory 230 associated with the navigation device 200 automatically. A user of a navigation device 200 can, for example, enroll in a program available through a service provider of the navigation device 200. The enrollment provides the user of the navigation device 200 with monthly updates sent to the navigation device 200 by the service provider. Other intervals, such as weekly or semi-annually, can be used.

The methods of at least one embodiment expressed above may be implemented as a computer data signal embodied in the carrier wave or propagated signal that represents a sequence of instructions which, when executed by a processor (such as processor 304 of server 302, and/or processor 210 of navigation device 200 for example) causes the processor to perform a respective method. In at least one other embodiment, at least one method provided above may be implemented above as a set of instructions contained on a computer readable or computer accessible medium,
such as one of the memory devices previously described, for example, to perform the respective method when executed by a processor or other computer device. In varying embodiments, the medium may be a magnetic medium, electronic medium, optical medium, etc.

Even further, any of the aforementioned methods may be embodied in the form of a program. The program may be stored on a computer readable media and is adapted to perform any one of the aforementioned methods when run on a computer device (a device including a processor). Thus, the storage medium or computer readable medium, is adapted to store information and is adapted to interact with a data processing facility or computer device to perform the method of any of the above mentioned embodiments.

The storage medium may be a built-in medium installed inside a computer device main body or a removable medium arranged so that it can be separated from the computer device main body. Examples of the built-in medium include, but are not limited to, re-writable non-volatile memories, such as ROMs and flash memories, and hard disks. Examples of the removable medium include, but are not limited to, optical storage media such as CD-ROMs and DVDs; magneto-optical storage media, such as MOs; magnetism storage media, including but not limited to floppy disks (trademark), cassette tapes, and removable hard disks; media with a built-in re-writable non-volatile memory, including but not limited to memory cards; and media with a built-in ROM, including but not limited to ROM cassettes; etc. Furthermore, various information regarding stored images, for example, property information, may be stored in any other form, or it may be provided in other ways.

As one of ordinary skill in the art will understand upon reading the disclosure, the electronic components of the navigation device 200 and/or the components of the server 302 can be embodied as computer hardware circuitry or as a computer readable program, or as a combination of both.

The system and method of embodiments of the present application include software operative on the processor to perform at least one of the methods according to the teachings of the present application. One of ordinary skill in the art will understand, upon reading and comprehending this disclosure, the manner in which a software program can be launched from a computer readable medium in a computer based system to execute the functions found in the software program. One of ordinary skill
in the art will further understand the various programming languages which may be employed to create a software program designed to implement and perform at least one of the methods of the present application.

The programs can be structured in an object-orientation using an object-oriented language including but not limited to JAVA, Smalltalk, C++, etc., and the programs can be structured in an object-orientation using a procedural language like COBOL, but not limited to COBOL, C, etc. The software components can communicate in any number of ways that are well known to those of ordinary skill in the art, including but not limited to by application of program interfaces (API), interprocess communication techniques, including but not limited to report procedure call (RPC), common object request broker architecture (CORBA), Component Object Model (COM), Distributed Component Object Model (DCOM), Distributed System Object Model (DSOM), and Remote Method Invocation (RMI). However, as will be appreciated by one of ordinary skill in the art upon reading the present application disclosure, the teachings of the present application are not limited to a particular programming language or environment.

The above systems, devices, and methods have been described by way of example and not by way of limitation with respect to improving accuracy, processor speed, and ease of user interaction, etc. with a navigation device 200.

Further, elements and/or features of different example embodiments may be combined with each other and/or substituted for each other within the scope of this disclosure and appended claims.

Still further, any one of the above-described and other example features of the present invention may be embodied in the form of an apparatus, method, system, computer program and computer program product. For example, of the aforementioned methods may be embodied in the form of a system or device, including, but not limited to, any of the structure for performing the methodology illustrated in the drawings.

Example embodiments being thus described, it will be obvious that the same may be varied in many ways. Such variations are not to be regarded as a departure from the spirit and scope of the present invention, and all such modifications as would be obvious to one skilled in the art are intended to be included within the scope of the following claims.
CLAIMS

1. A navigation device for providing point of interest information to a user, the navigation device comprising:
   an input device to receive an input from a user for selecting at least one point of interest entry; and
   a display device to display rich content associated with the selected at least one point of interest entry.

2. The navigation device of claim 1 wherein the input device and the display device are included in an integrated input and display device.

3. The navigation device of any preceding claim further comprising memory to store multiple point of interest entries including the selected at least one point of interest entry.

4. The navigation device of any preceding claim wherein the rich content is acquired via a network connection.

5. The navigation device of claim 4 wherein the rich content is stored on a server associated with a service provider for the navigation device.

6. The navigation device of claim 4 or 5 wherein the network connection is an Internet connection.

7. The navigation device of any of claims 4-6 wherein the rich content is a webpage.

8. The navigation device of claim 3 or any claim dependent thereon wherein said memory additionally stores the rich content.

9. The navigation device of any preceding claim wherein the rich content includes one or more of a show time, hours of operation, a price, an image, an
event, an address, contact information, a detailed description of the point of interest
entry.

10. The navigation device of any preceding claim further comprising a processor to plan a route to the selected at least one point of interest entry.

11. The navigation device of claim 10 wherein the display device displays map information including the planned route and a first icon associated with the selected at least one point of interest entry.

12. A navigation device according to any preceding claim wherein the display device causes display of a point of interest browser including multiple point of interest entries, the selection of one of which results in the display device displaying map information including a first icon associated with the selected point of interest entry together with the rich content associated with the selected at least one of point of interest entry.

13. The navigation device of claim 12 wherein each of the multiple point of interest entries is associated with a second icon, the second icon being included in the point of interest browser.

14. The navigation device of claim 13 wherein the first icon and the second icons are stored in different memory locations.

15. The navigation device of claim 13 or 14 wherein the user is able to change one of the first icon and the second icon associated with a point of interest entry.

16. The navigation device of claim 3 or any claim dependent thereon wherein the multiple point of interest entries are organized into one or more categories.

17. The navigation device of claim 16 wherein the input selects a category, the category including one or more point of interest entries.
18. The navigation device of claim 11 or any claim dependent thereon wherein multiple first icons are included in the map information, one or more of the first icons is displayed large to indicate a special status, and the remaining first icons are displayed small.

19. The navigation device of any preceding claim further comprising output means for warning the user when a point of interest is within a distance.

20. A method for providing point of interest information to a user of a navigation device, the method comprising:
   receiving an input from a user for selecting at least one point of interest entry;
   and
   displaying rich content associated with the selected at least one point of interest entry.

21. The method of claim 20 further comprising storing the multiple point of interest entries in a memory associated with the navigation device.

22. The method of claim 20 or 21 further comprising acquiring the rich content via a network connection.

23. The method of any of claims 20-22 wherein the rich content is a webpage.

24. The method of any of claims 20-23 wherein the rich content includes one or more of a show time, hours of operation, a price, an image, an event, an address, contact information, a detailed description of the point of interest entry, and copyright information.

25. The method of any of claims 20-24 further comprising planning a route to the selected at least one point of interest entry.
26. The method of any of claims 20-25 further comprising receiving a second input from a user to display the rich content associated with the selected at least one point of interest entry.

27. The method of claims 20-26 further comprising displaying map information including a first icon associated with the selected point of interest entry.

28. The method of any of claims 20-27 wherein the multiple point of interest entries are organized into one or more categories by the user.

29. The method of claim 28 wherein each of the multiple point of interest entries is associated with a second icon, the second icon being included in the point of interest browser.

30. The method of claim 29 further comprising receiving an input to change to one or more of the first icon and the second icon associated with a point of interest entry.

31. The method of claim 27 or any claim dependent thereon wherein the map information includes a planned route to a destination selected by the user.
Fig. 3

NAVIGATION DEVICE

COMMUNICATIONS CHANNEL

SERVER

MASS DATA STORAGE

GP5
DISPLAY
RECEIVER
TRANSMITTER

PROCESSOR
MEMORY
TRANSMITTER
RECEIVER

302
308
304
306
310
314
312
318
Mijn broer
Ibra hiem
die eerst Daniel heette.

Fig. 5

DEL
NORMAL Tag ON NORMAL internally.
Making line with this tag on italic bold underline strikethrough small BIG emphasis strong inserted deleted normal H2O rod bromo done.

A
NORMAL Tag ON NORMAL internally.
Making line with this tag on italic bold underline strikethrough small BIG emphasis strong inserted deleted normal H2O rod bromo done.

UL/LI

Fig. 6
De Notre-Dame

De Notre-Dame is een imposante, in vroeggotische stijl opgetrokken kathedraal op het eiland van de Seine, "ile de la Cité" in het centrum van Parijs. De kathedraal werd in opdracht van bisschop Maurice de Sully gebouwd in de tijd van Lodewijk VII. De eerste steen werd in 1163 door paus Alexander III geplaatst. De bouw werd in 1345 voltooid. Ze onderging vanaf 1845 een 23-jarige restauratie door E.E. Viollet-le-Duc, nadat ze beschadigd werd tijdens de Franse Revolutie. Sinds 1991 is er een nieuwe restauratie aan de gang die bijna beëindigd is. De Notre-Dame is 130 meter lang, de twee niet-afgebouwde torens, die een hoogte hebben van 69 meter, kunnen beklimmen worden en bieden een uitzicht over de stad. Elk jaar komen meer dan een miljoen toeristen kijken hoe...

Fig. 7

De Notre-Dame vanuit het zuidoosten

Het boek "De Klokkenluiders van de Notre Dame" dat Victor Hugo in 1831 schreef, speelt zich bijna volledig af in de kathedraal en gaf de Notre Dame de Parijs wereldberoemdheid. Het gaat over de liefde van de...

Fig. 8
Fig. 10

1100

receiving an input from
a user for selecting at least
one point of interest entry

1102

displaying rich content
associated with the selected
at least one of
point of interest entry.

1104

Fig. 11
displaying a point of interest browser including multiple point of interest entries

receiving an input from a user for selecting at least one of the multiple point of interest entries

displaying map information including a first icon associated with the selected point of interest entry
Fig. 17
INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER

INV. G01C21/32 G01C21/36 G01C21/20

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

B. RELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

GOIC

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 practical, search terms used)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
<thead>
<tr>
<th>Category</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No</th>
</tr>
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<tbody>
<tr>
<td>X</td>
<td>US 2004/070602 A1 (KOBUYA NAOSHI [JP] ET AL) 15 April 2004 (2004-04-15) page 1, paragraph 7 - page 18, paragraph 302; claim 1; figures 1,5,8-10</td>
<td>1-31</td>
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<tr>
<td>X</td>
<td>US 6 321 158 B1 (DELMER DAVID M [US] ET AL) 20 November 2001 (2001-11-20) column 1, line 22 - column 2, line 31 column 8, line 12 - column 14, line 27; figures 1A-1A5</td>
<td>1-31</td>
</tr>
<tr>
<td>P,X</td>
<td>EP 1 788 495 A (NAVTEQ NORTH AMERICA LLC [US]) 23 May 2007 (2007-05-23) column 3, line 26, paragraph 10 - column 11, line 18, paragraph 46; figures 1,2,4</td>
<td>1,2,4,9, 10,20, 22,24,25</td>
</tr>
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</table>

Further documents are listed in the continuation of Box C

See patent family annex

Special categories of rated documents:

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

'E' earlier document but published on or after the international filing date

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

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

‘P’ document published prior to the international filing date but later than the priority date claimed

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

‘X’ document of particular relevance, the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

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

‘X’ document member of the same patent family

Date of the actual completion of the international search: 30 January 2008

Date of mailing of the international search report: 12/02/2008

Name and mailing address of the ISA/ European Patent Office P B 5818 Patentlaan 2 NL - 2280 HV Rijswik Tel (+31-70) 340-3440, Tx 31 651 epo nl, Fax (+31-70) 340-3016

Authorized officer: Springer, Oliver
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<th>Relevant to claim No</th>
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<tr>
<td>A</td>
<td>US 2004/243307 A1 (GEELEN PIETER [NL]) 2 December 2004 (2004-12-02) the whole document</td>
<td>1-31</td>
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<td>Patent document cited in search report</td>
<td>Publication date</td>
<td>Patent family member(s)</td>
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