(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
17 July 2008 (17.07.2008)

PCT

(10) International Publication Number
WO 2008/083758 A1

(51) International Patent Classification:
G01C 21/34 (2006.01) *G08G 1/0969* (2006.01)

(21) International Application Number:
PCT/EP2007/008752

(22) International Filing Date: 5 October 2007 (05.10.2007)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

60/879,523	10 January 2007 (10.01.2007)	US
60/879,549	10 January 2007 (10.01.2007)	US
60/879,553	10 January 2007 (10.01.2007)	US
60/879,577	10 January 2007 (10.01.2007)	US
60/879,599	10 January 2007 (10.01.2007)	US
60/879,529	10 January 2007 (10.01.2007)	US
60/879,601	10 January 2007 (10.01.2007)	US

(71) Applicant *(for all designated States except US)*: **TOMTOM INTERNATIONAL B.V.** [NL/NL]; Rembrandtplein 35, NL-1017 CT Amsterdam (NL).

(72) Inventor; and

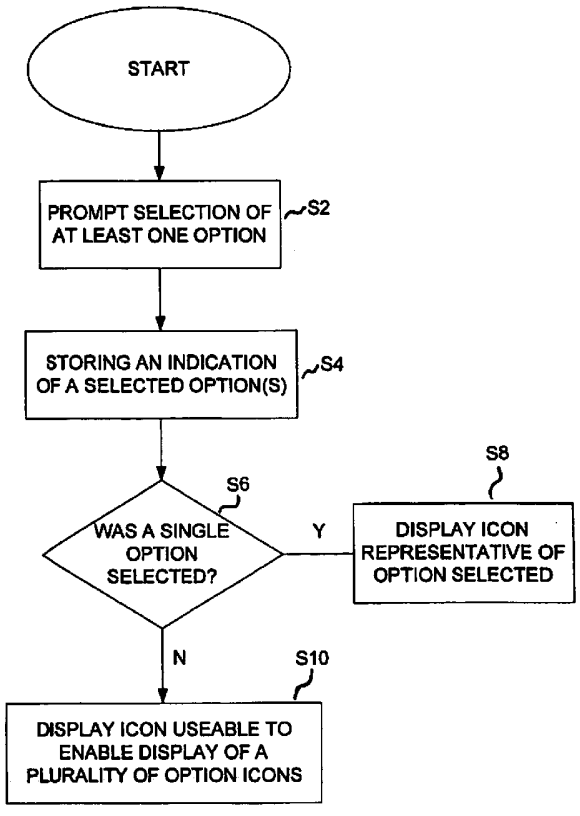
(75) Inventor/Applicant *(for US only)*: **GEELEN, Pieter** [NL/NL]; Rembrandtplein 35, NL-1017 CT Amsterdam (NL).

(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,

[Continued on next page]

(54) Title: A NAVIGATION DEVICE AND METHOD FOR QUICK OPTION ACCESS



(57) Abstract: A method and device are disclosed for navigation. In at least one embodiment, the method includes prompting selection of at least one of a plurality of options on an integrated input and display device of a navigation device; storing, upon receipt of an indication of selection of at least one of the plurality of options, an indication of selection of the at least one option; and displaying, on the integrated input and display device of the navigation device, at least one icon to enable the at least one selected option. In at least one embodiment, the navigation device includes an integrated input and display device to prompt selection of at least one of a plurality of options; and a memory to store, upon receipt of an indication of selection of at least one of the plurality of options, an indication of selection of the at least one option, wherein the integrated input and display device is useable to display at least one icon to enable the at least one selected option.

WO 2008/083758 A1

FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declaration under Rule 4.17:

— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*

Published:

— *with international search report*

A NAVIGATION DEVICE AND METHOD FOR QUICK OPTION ACCESS

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 on 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 are typically tailored to produce a route of travel based upon an initial position of the navigation device and a selected/input travel destination (end position), noting that the initial position could be entered into the device, but is traditionally calculated via GPS Positioning from a GPS receiver within the navigation device. However, more recently, navigation devices are including more and more additional features or options.

SUMMARY

The inventors discovered that access to certain options can be difficult, slow or cumbersome, as the primary purpose of the navigation device is vehicle navigation. Thus, the inventors of the present application developed a method for a user to mark or select their most popular options, and then allow them easy access to these marked or selected options, even during use of the navigation device in a navigation mode.
In at least one embodiment of the present application, a method includes prompting selection of at least one of a plurality of options on an integrated input and display device of a navigation device; storing, upon receipt of an indication of selection of at least one of the plurality of options, an indication of selection of the at least one option; and displaying, on the integrated input and display device of the navigation device, at least one icon to enable the at least one selected option.

In at least one embodiment of the present application, a navigation device includes an integrated input and display device to prompt selection of at least one of a plurality of options; and a memory to store, upon receipt of an indication of selection of at least one of the plurality of options, an indication of selection of the at least one option, wherein the integrated input and display device is useable to display at least one icon to enable the at least one selected option.

In at least one other embodiment of the present application, a method includes receiving an indication of enablement of one of a plurality of options on a navigation device; storing, upon receipt of an indication of enablement of one of the plurality of options, an indication of enablement of the enabled option; and displaying, on an integrated input and display device of the navigation device, an icon for subsequent enablement of the one enabled option.

In at least one other embodiment of the present application, a navigation device includes a processor to receive an indication of enablement of one of a plurality of options on the navigation device; a memory to store, upon receipt of an indication of enablement of one of the plurality of options, an indication of enablement of the enabled option; and an integrated input and display device to display an icon for subsequent enablement of the one enabled option.

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;

Figures 4A and 4B are perspective views of an implementation of an embodiment of the navigation device 200.

Figure 5 illustrates an example flow of an embodiment of the present application;

Figure 6 illustrates a further example flow of an embodiment of the present application;
Figure 7A and 7B illustrate an example of a displayed options selection menu of an embodiment of the present application;
Figure 8 illustrates an example of a displayed representative quick access icon in a navigation mode of an embodiment of the present application;
Figures 9A and 9B illustrate an example of a displayed options selection menu of an embodiment of the present application;
Figure 10 illustrates an example of a displayed generic quick access icon in a navigation mode of an embodiment of the present application;
Figure 11 illustrates a displayed quick access menu of example embodiment of the present application;
Figure 12 illustrates an example flow of another embodiment of the present application; and
Figure 13 illustrates a further example flow of another embodiment of the present application.

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 251 can also include, including but not limited to, an audible output device. As output device 251 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 251, 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, 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 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).

In at least one embodiment of the present application, a method includes prompting selection of at least one of a plurality of options on an integrated input and display device 290 of a navigation device 200, storing, upon receiving indication of selection of at least one of a plurality of options, an indication of selection of the at least one option; and displaying, on the integrated input and display device 290 of the navigation device 200, at least one icon to enable the at least one selected option.

In at least one embodiment of the present application, a navigation device 200 includes an integrated input and display device 290 to prompt selection of at least one of a plurality of options; and a memory 230 to store, upon receipt of an indication of selection of at least one of the plurality of options, an indication of selection of the at least one option, wherein the integrated input and display device 290 is useable to display at least one icon to enable the at least one selected option.

An example embodiment of the present application is shown in Figure 5. Initially, after starting the navigation device 200, a user may be prompted to select at least one of a plurality of options, via a display on an integrated input and display device 290 of the navigation device 200, for example, in Step S2. This prompting can include display of a plurality of options or features of the navigation device 200, some of which may be related to non-navigational functions such as music functions, for example. The plurality of options may be displayed to permit selection of one or more of the options for subsequent quick and/or easy access to the options, for example.

Thereafter, in Step S4, an indication of selection of the at least one option may be stored, in memory 230 of the navigation device 200 for example. Thus, a user may select a plurality of options for subsequent quick and/or easy access, or may select a single option. If no option is selected, the navigation device 200 will operate as normal, without having any ability for quick or otherwise immediate access to any particular option based on these actions (but may already have established this quick and easy access or may later enable an option for subsequent quick and easy access as will be explained with regard to another embodiment of the application).

Once a selected option is stored in Step S4, the integrated input and display device 290 of the navigation device 200 can then display at least one icon to enable the at least one selected option. Such an icon may be displayed during use of the navigation device 200 in a navigation mode (such as when display navigation and/or map information for example), for example, to allow a user to quickly access a particular selected option.

Optionally, the method can further be used to determine whether or not one or more options are selected, and can alter display of the icon depending on whether or not one or more than one options was selected, by the processor 210 of the navigation device 200 for example. For example, in Step S6, it can be determined whether or not a single option was selected. If so, the display of the icon in Step S8 can include display of an icon representative of the option selected. Thus, by displaying the single icon, on the integrated input and display device 290 during use of the navigation device 200 in a navigation mode for example, and by having the icon be displayed in a manner representative of the selected option, a user can quickly know that the option is easily accessible and enableable, and by subsequent selection thereof, the user can easily enable the desired option.

In Step S6, if it is determined, by the processor 210 of the navigation device 200 for example, that a single option was not selected, but that a plurality of options were selected for example, then an icon can be displayable in Step S10, which is usable to enable display of a plurality of option icons. Thus, the single icon may be either representative of the selected option upon receipt of an indication of selection of a single option from the plurality of options, or the single icon may be an icon usable to enable display of a plurality of selectable icons upon receipt of an indication of selection of at least two options from the plurality of options. Thus, upon receipt of an indication of this displayed single icon representative of one selected option, the selected option may be enabled by the processor 210 of the navigation device 200 for example. Further, if the single icon is usable to enable a further display of a plurality of icons, when this icon is selected, a plurality of additional icons are then displayed, which, when selected, enable an option corresponding to the selected icon, by the processor 210 of the navigation device 200 for example. In any of the aforementioned

situations, display of a single icon may be maintained during use of the navigation device 200 in the navigation mode, and the single icon may be displayed with map information during use of the navigation device 200 in the navigation mode.

Figure 6 provides a further example of an embodiment of the present application. As shown in Figure 6, a preference mode may be initially displayed to a user in Step S20, on the integrated input and display device 290 for example, including an option for selecting options or "quick menu preferences." Upon selection of the "quick menu preference" virtual button displayed in Step S20, a plurality of selectable options or "quick menu preferences" may be displayed in Step S22, noting that arrow keys may be utilized if the displayable quick menu preference options will not fit on an entire display screen (to enable a user to scroll through selectable options for example). Thus, in Step S22, the user is prompted to select at least one of the plurality of options.

Thereafter, in Step S24, the processor 210 for example, can determine whether or not any options were selected. If no options are selected, the quick menu may be removed in Step S26, such that no quick menu access will be permitted until or unless options are later selected and/or enabled.

If the answer to Step S24 is yes, then the processor 210 for example, may determine in Step S28 that only one option has been selected. Thus, upon receipt of an indication of selection of at least one of the plurality of options, an indication of selection of the at least one option may be stored in memory 230 for example, and the processor 210 may determine whether or not only one option was selected. If so, then in Step S30, an icon representative of the selected option may be displayed (on the integrated input and display device 290 for example) during use of the navigation device 200 in a navigation mode or navigation view for example (such as with map and other navigation information for example), wherein the displaying includes display of a representative icon usable to enable the one selected option. For example, a flag may be set and stored in memory 230, indicating to the processor 210 that upon display in a navigation mode, an icon representative of the selected option should be displayed.

If the answer to Step S28 is no, then the method moves to Step S32 wherein an icon usable to enable a display of a plurality of selectable icons, for example a green arrow shortcut icon, may be displayed in a navigation view or navigation mode, on the integrated input and display device 290 for example. For example, a flag may be set and stored in memory 230, indicating to the processor 210 that upon display in a navigation mode or navigation view, an icon usable to enable a display of a plurality of selectable icons, to subsequently enable a selected option, should be displayed.

Figures 7A and 7B illustrate an example of the display usable in prompting selection of at least one of a plurality of options, displayed on an integrated input and display device 290 of a navigation device 200 for example. A first fixed number of selectable options may be displayed on an integrated input and display device 290 of the navigation device 200 for example as shown in Figure 7A, wherein arrow keys can be used to scroll to a next screen of the fixed number of selectable options, such as that shown in Figure 7B, wherein additional one of the fixed number of selectable options may be displayed. The options can include any fixed number of options set by the navigation system 200, and is not limited, by kind or by number, to those shown in the two display screens as shown in Figures 7A and 7B. Further, the display of Figure 7A, displaying only six of the twelve selectable options, is not to be interpreted as being limited, as any number of options may be displayed at a single time.

It should be noted that the various options can include options for access to any of a number of different types of preferences, options, features of the navigation device 200, in the form of permitting easier quick access to preferences, options, features desired most by a particular user.

For example, if the user of the navigation device 200 likes music, the user may wish to select the "TomTom Jukebox" option as shown in Figure 7A to allow quick access to use of the navigation device 200 as an MP3 player or other music player for example, even when the navigation device 200 is currently in a navigation mode. If a user desires quick access to the weather, for example, the user may wish to select the weather option as shown in Figure 7B for example.

It is preferred that a set number of options be displayed for selection to a user, such as the twelve options shown in Figures 7A and 7B, and it is further preferable to set a limited number of options for selection at any one time, such as six options, for example (or some fixed number of options displayable at any one time on the integrated input and display of a navigation device 200). Thus, although the present application is not limited as such, in one example embodiment, the plurality of prompted options includes a set number of options. Further, in at least one embodiment of the present application, another set number of options, less than the plurality of prompted options, are selectable, as the at least one selectable option.

Figure 8 provides an illustration of an example display of a navigation device 200, on an integrated input and display device 290 for example, when used in a navigation mode or shown in a navigation view. The display includes generally two areas of display, namely a navigation or status bar 810 and a map display area 820. The map display area 820 includes map information generally labeled 830 and an indication of the route of travel 840, wherein the status bar 810 area includes times, distances, speeds, etc.

In the example embodiment shown in Figure 8, an icon representative of the selected "TomTom Jukebox" option has been selected as the only option (in step S6 of Figure 5 for example) is displayed as a music note 850 for example, namely a single icon representative of the selected "TomTom Jukebox" option (note that the music note icon 850 has been circled for emphasis only as such a circle, although it may be included, is not intended to be part of the display of Figure 8).

Thus, subsequent to initially prompting selection of at least one of a plurality of options in Figures 7A and 7B, and subsequent to storing, in memory 230 for example, an indication of the selected "TomTom Jukebox" option, a single icon representative of the selected "TomTom Jukebox" option is then displayed during use of the navigation device 200, with map information 830 and the route of travel 840 for example. As such, if the user is utilizing the navigation device 200 in such a navigation mode or navigation view as shown in Figure 8, the user can still have quick and easy access to the "TomTom Jukebox" option of the navigation device 200. Accordingly, upon selecting the music note icon

850 shown in Figure 8, the processor 210 of the navigation device 200 will recognize selection of the icon and will enable the "TomTom Jukebox" option or feature of the navigation device 200. Thus, the user is provided with quick access to this "favorite" feature or option. Of course, it is noted that the music note icon 850 is just one example of an icon representative of a selected option, and the embodiments of the present application should not be limited as such.
Figures 9A and 9B illustrate another aspect of an embodiment of the invention, wherein a plurality of options, when prompted, are selected (namely one where five particular options are selected). Accordingly, in such an example, when a plurality of options are selected, and indication of a plurality of selected options are stored in memory 230 for example, and then the processor 210 for example, will direct display of a single more generic icon to the user, during use of the navigation device 200 in a navigation view or navigation mode. This is shown by icon 860 in Figure 10 for example.
Figure 10 includes a navigation view display, during use of the navigation device 200 in a navigation mode for example, somewhat similar to that of Figure 8, including the navigation or status bar 810, the map display area 820, the map information 830 and the route of travel 840. The displayed icon 860 is not representative of any particular mode, but is instead representative of the fact that a plurality of modes or options have been selected by a user (thus a general icon such as an arrow 860 is shown, wherein the arrow can further be a green arrow indicating that selection of this arrow will require further selection of an option.
Accordingly, upon receipt of an indication of selection of a plurality of options by the processor 210, an icon representative of further selection, such as the arrow 860 shown in Figure 10, is displayed on the integrated input and display device 290. When such an icon 860 is selected, this enables a further display of icons as shown in Figure 11 for example.
Accordingly, upon receipt of an indication of the five selected options shown in Figures 9A and 9B, upon storing this indication in memory 230, upon displaying an icon representative of further selection such as the arrow icon 860, and in response to the processor 210 receiving an indication of selection of the arrow icon 860 of Figure 10, a plurality of additional icons may be displayed

on the integrated input and display device 290, these icons being representative of the options selected.

For example, as shown in Figure 10, each of the five icons 400, 500, 600, 700, and 800 are representative of each of the five selected options of Figures 9A and 9B, noting that upon receipt of an indication of selection of any of the displayed icons of Figure 10, the processor 210 will enable the corresponding selected option. Thus, if only one option is selected by a user of the navigation device 200, only a single icon (such as music note icon 850 of Figure 8 for example) representative of the option will be displayed to the user in a navigation mode; and if a plurality of options are selected, then a single generic icon (such as arrow icon 860 of Figure 9 for example), wherein selection of that generic icon 860 will then enable display of the further icons shown in Figure 11, each representative of a selected option, wherein selection thereof will enable the corresponding option.

As previously indicated, selection of a particular icon shown in Figure 11 will enable a particular option. If an option cannot be enabled at a particular time, such as the option of reporting safety cameras in a particular area where safety cameras are not present for example, the icon can be differentiated from the display of other icons, such as the grayed out icon 500 shown in Figure 11, for example. As such, the icon is not selectable to enable the particular option.

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 integrated input and display device 290 to prompt selection of at least one of a plurality of options, and a memory 230 to store, upon receipt of an indication of selection of at least one of the plurality of options, an indication of selection of the at least one option, wherein the integrated input and display device 290 is usable to display at least one icon to enable the at least one selected option. Such a navigation device 200 may further include a processor 210 to enable options and/or to enable display of icons, upon receipt of an indication of selection of options. Thus, such a navigation device 200 may be used to perform the various aspects of the method described with regard to Figures 5-11, as would

be understood by one of ordinary skill in the art. Thus, further explanation is omitted for the sake of brevity.

In at least one other embodiment of the present application, a method includes receiving an indication of enablement of one of a plurality of options on a navigation device 200, storing, upon receipt of an indication of enablement of at least one of the plurality of options, an indication of enablement of the options; and displaying, on an integrated input and display device 290 of the navigation device 200, an icon for subsequent enablement of the one enabled option.

In at least one other embodiment of the present application, a navigation device includes a processor to receive an indication of enablement of one of a plurality of options on the navigation device; a memory to store, upon receipt of an indication of enablement of one of the plurality of options, an indication of enablement of the enabled option; and an integrated input and display device to display an icon for subsequent enablement of the one enabled option.

Figure 12 illustrates a method flow for implementing at least one additional embodiment of the present application. In Step S42, an indication of enablement of one of a plurality of options is received, by a processor 210 for example. Thereafter, in Step S44, and indication of enablement of the enabled option is stored, in memory 203 for example, and subsequent thereto, an icon for subsequent enablement of the enabled option is displayed, on an integrated input and display device 290 for example. It should be noted that the display can include two different displays, depending upon whether or not other options were previously selected for access.

For example, subsequent to storing an indication of an enabled option in Step S44, it can be determined in Step S46 by processor 210 for example, whether or not any other options were previously selected for access, such as via prompting of a plurality of options as shown in Figures 7A and 7B or Figures 9A and 9B of the present application for example. If not, then an icon is displayed which is representative of the enabled option in Step S48. Thus, if no other options were previously selected for access, such as via the prompt in Figures 7A and 7B or 9A and 9B for example, once a particular option is enabled, the processor 210 can direct the integrated input and display device 290 to display an icon for subsequent enablement of the option (such as the

music note icon 850 of Figure 8, assuming that the "TomTom Jukebox" was enabled, and no other options were previously selected for access).

In such a situation, the navigation device 200 assumes that if a user enables the option one time, he may desire quick access to enable the option again. Such quick access can be achieved by displaying an icon representative of the enabled option, on integrated input and display device 290 for example, upon determining that no other of the plurality of options were previously selected for access. Such an icon may be displayed with map information 830 during the use of the navigation device 200 in a navigation mode for example, in a manner somewhat similar to that previously described with regard to Figure 8.

In Step S46, if it is determined that any other options were previously selected for access, via selection from prompted option menus shown in Figures 7A, 7B, 9A, or 9B for example, an icon can be displayed in Step S50 (such as the arrow icon 860 of Figure 10 for example), usable to enable display of a plurality of option icons (such as the icons 400, 500, 600, 700, and 800 of Figure 11 for example), for subsequent enablement of a selected option. Thus, although such an icon can be displayed with map information during use of the navigation device 200 in a navigation mode, such an icon will not be representative of the enabled option, upon determining that at least one other of the plurality of options were previously selected for access, and will be usable to enable further display of a plurality of icons, each representative of the at least one enabled option and representative of options previously selected for access. This would be the case, for example, wherein the displayed icon may be the arrow icon 860 of Figure 10 for example, which can be usable to enable further display of the plurality of previously enabled options and representative of options previously selected for access. Such options may include the options shown in Figure 11 wherein, upon receipt of an indication of subsequent selection of one of a plurality of displayed icons 400, 500, 600, 700, and 800 for example, an option corresponding to the selected icon is enabled.

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 processor 210 to

receive an indication of enablement of one of a plurality of options on the navigation device 200; a memory 230 to store, upon receipt of an indication of enablement of one of the plurality of options, an indication of enablement of the enabled option; and an integrated input and display device 290 to display an icon for subsequent enablement of the one enabled option Thus, such a navigation device 200 may be used to perform the various aspects of the method described with regard to Figure 12, as would be understood by one of ordinary skill in the art. Thus, further explanation is omitted for the sake of brevity.

Figure 13 illustrates another example flow chart of an additional embodiment of the present application. In Step S60, outside of the quick menu preference selection of step S22 of Figure 6 for example, a user may enable an option, detectable by processor 210 for example. Thereafter, in Step S62, the processor 210 determines whether or not only one option is enabled. If so, in Step S64, an icon representative of the selected feature or selected option is displayed in a navigation view or navigation mode of a navigation device 200, such as the music note icon 850 of Figure 8 for example.

If the answer to the question posed in Step S62 is no, the method proceeds to Step S66 where the processor 210 determines whether or not the enabled option is a seventh option (assuming that the navigation system includes only a fixed or set number of options which can be selected for quick access at one time, such as six options for example) in the quick menu, namely whether or not any other a set maximum number of options have already been selected for access. If the processor 210 determines that the option is not the seventh option (namely that it is not an option higher than a set number of options enabled through the quick menu process), then the method moves to Step S70, enabling a display noting that the newly enabled option will be available in the quick menu to again easily select the option.

Thereafter, the method proceeds to Step S72 wherein the arrow shortcut icon, such as icon 860 of Figure 10 for example, may be displayed in the navigation view or navigation mode of the navigation device 200. If it is determined in Step S66 that the enabled option is the seventh option, or an option higher than a set number of options accessible via the quick menu process, the process

moves to Step S68 wherein one of the enabled options is disabled, so as to allow quick menu access to the newly enabled option. Thereafter, the processor 210 may enable display to advise the user in Step S70 of this newly enabled option, wherein the option will be accessible via the green arrow shortcut icon displayed in the navigation view of the navigation device 200 in Step S72. If the user is unhappy that a particular icon will be replaced in the quick menu, the user may then go back to the selection menu and select a new option preference.

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 a processor 210 to receive an indication of enablement of one of a plurality of options on the navigation device 200; a memory 230 to store, upon receipt of an indication of enablement of one of the plurality of options, an indication of enablement of the enabled option; and an integrated input and display device 290 to display an icon for subsequent enablement of the one enabled option Thus, such a navigation device 200 may be used to perform the various aspects of the method described with regard to Figure 13, as would be understood by one of ordinary skill in the art. Thus, further explanation is omitted for the sake of brevity.

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 (such as memory 230 for example) 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, rewriteable 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 rewriteable 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 a procedural-orientation using a procedural language including but not limited to COBAL, 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.

What is claimed is:

1. A method of operating a navigation device characterized by the following steps:

Causing display of a list of a plurality of selectable display options on an integrated input and display device of a navigation device, said display options being representative of configurable features of the navigation device,

Receiving a selection of one or more of said display options, such selection resulting in the enablement or disablement of the one or more display options selected and the storage of the state of enablement of those one or more display options,

Determining the number of display options being in an enabled state,

displaying, on the integrated input and display device of the navigation device, at least one icon, together with map information, on the determination that at least one display option is enabled, and establishing a shortcut routine callable by selection of said at least one icon, said shortcut routine causing display of further information specific to the configurable feature represented by the at least one enabled option.

2. A method according to claim 1 wherein a different icon is displayed depending on whether only one display option is an enabled state or a plurality of display options are so enabled.

3. The method of claim 1 or 2, wherein the at least one icon is displayed during use of the navigation device in a navigation mode.

4. The method of any preceding claim, wherein, in the case a plurality of display options are enabled, the further information is a plurality of selectable secondary icons, each relating to different configurable features of the device.

5. The method according to any preceding claim wherein a plurality of icons is displayed together with map information on the integrated input and display device in the case that a plurality of options is enabled, at least one of said plurality of icons being representative of one of the enabled display options.

6. The method of any preceding claim, wherein, upon selection of one of the at least one icon, the configurable feature corresponding to the selected icon is automatically enabled.

7. A computer program comprising computer program code means adapted to perform all the steps of any of claims 1-6 when run on a computer.

8. A computer program as claimed in claim 7 when embodied on or in a computer readable medium.

9. A navigation device for performing the method of any of claims 1-6, comprising:

an integrated input and display device to prompt selection of at least one of a plurality of display options; said display options being representative of configurable features of the navigation device,

a memory to store, upon receipt of an indication of selection of at least one of the plurality of display options, the state of enablement of said at least one display option,

a processor to determine whether at least one display option is enabled and to cause the display of at least one icon, together with map information, on the integrated input and display device the determination is positive, said processor further establishing a shortcut routine callable by selection of said at least one icon, said shortcut routine executable by said processor to cause display of further information specific to the configurable feature represented by the at least one enabled display option.

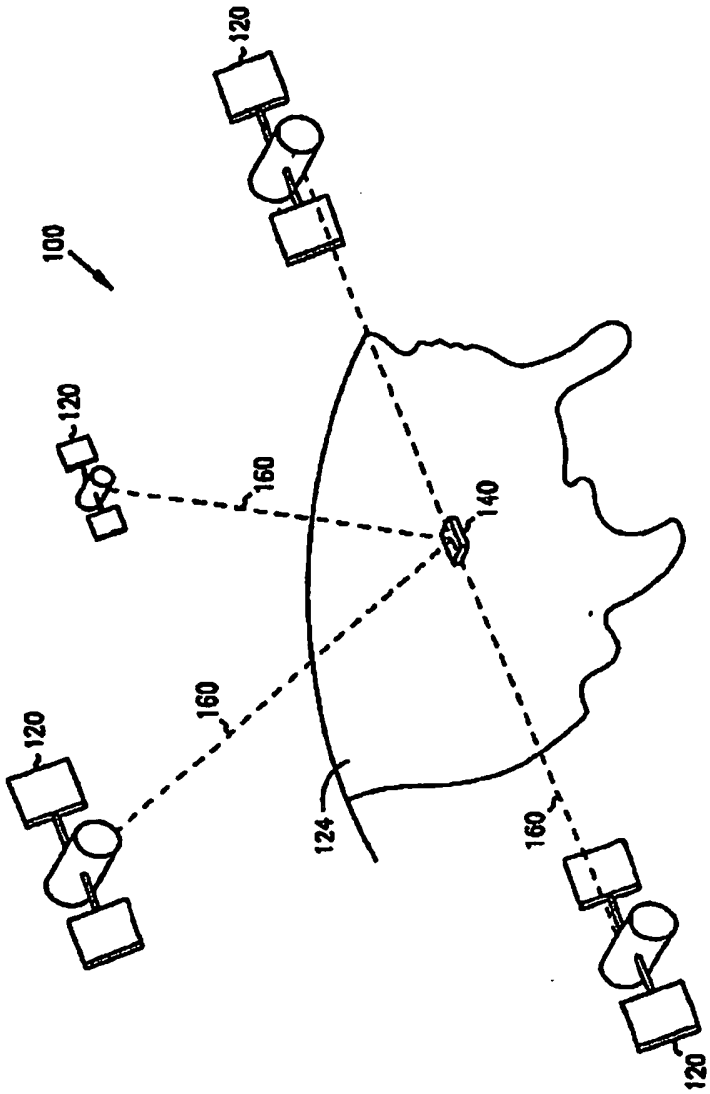


FIG. 1

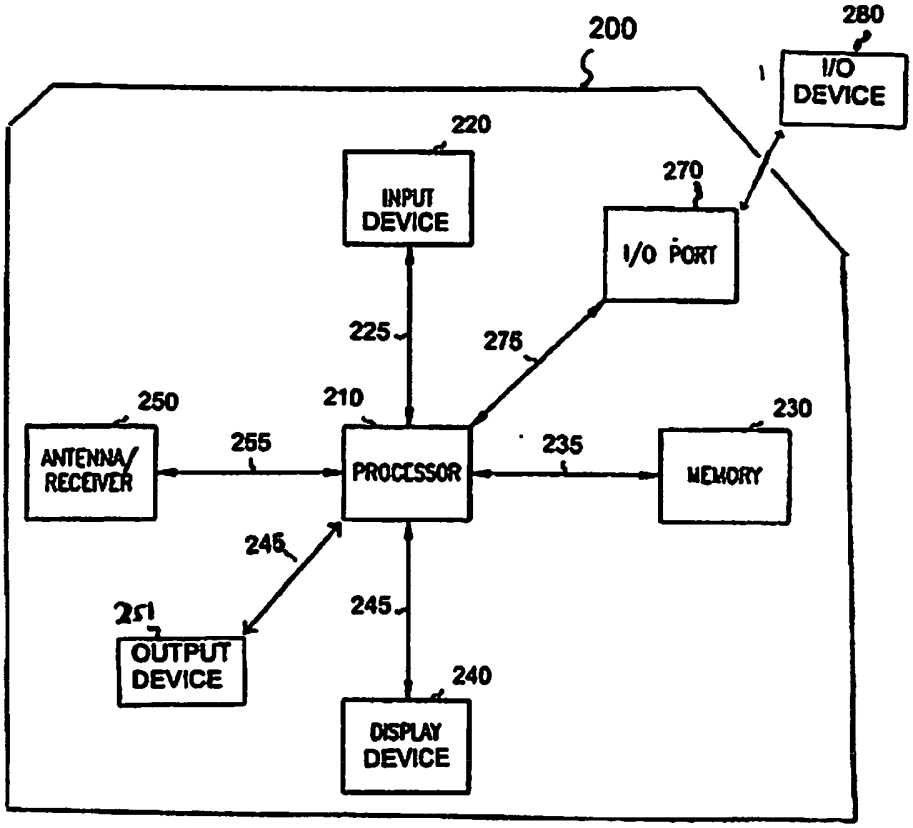

200
280
I/O DEVICE
220
INPUT DEVICE
270
I/O PORT
225
275
250
210
230
ANTENNA/ RECEIVER
255
PROCESSOR
235
MEMORY
245
245
251
OUTPUT DEVICE
240
DISPLAY DEVICE

Fig. 2

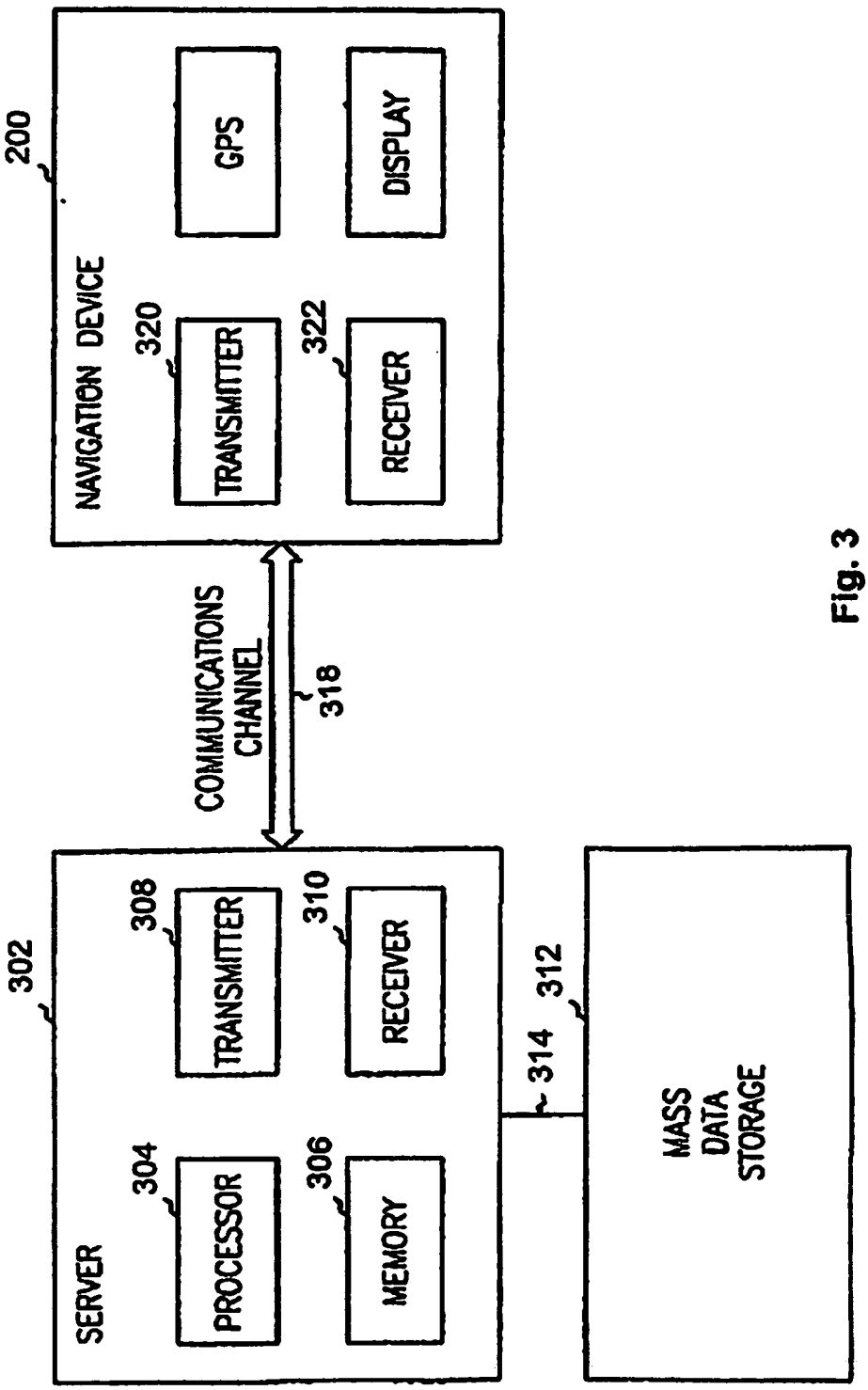

200
NAVIGATION DEVICE
GPS
DISPLAY
320
TRANSMITTER
322
RECEIVER
COMMUNICATIONS CHANNEL
318
302
SERVER
308
TRANSMITTER
310
RECEIVER
304
PROCESSOR
306
MEMORY
314
312
MASS DATA STORAGE

Fig. 3

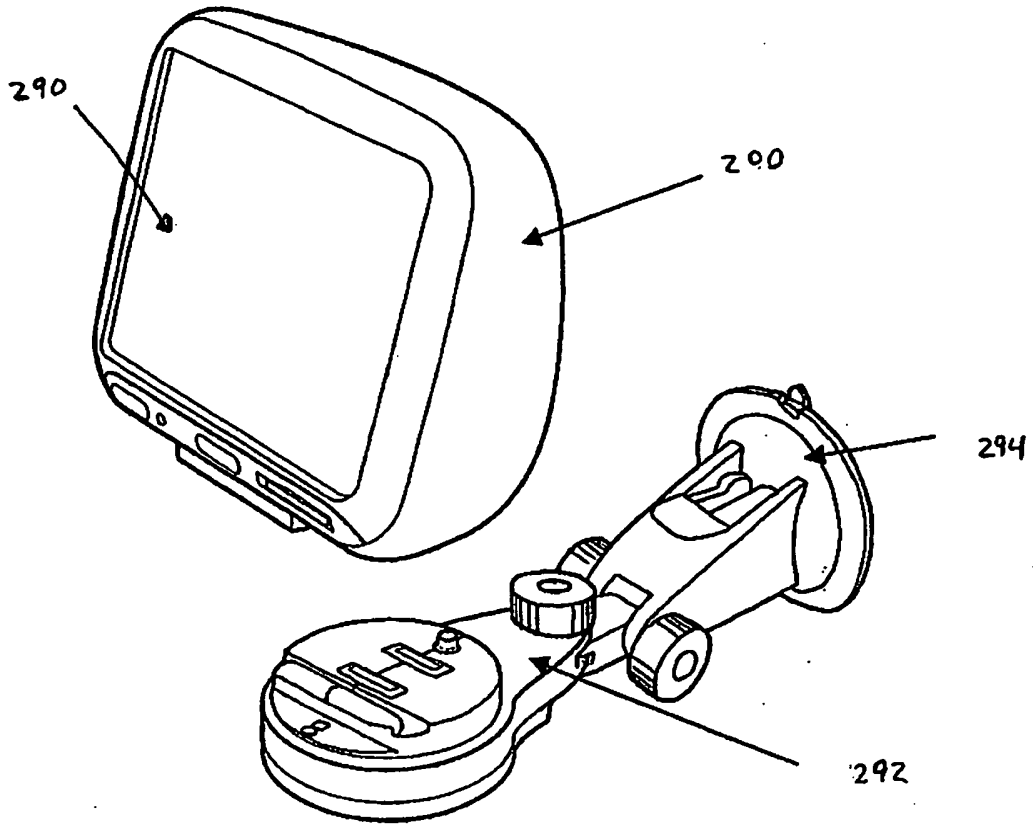


Figure 4A

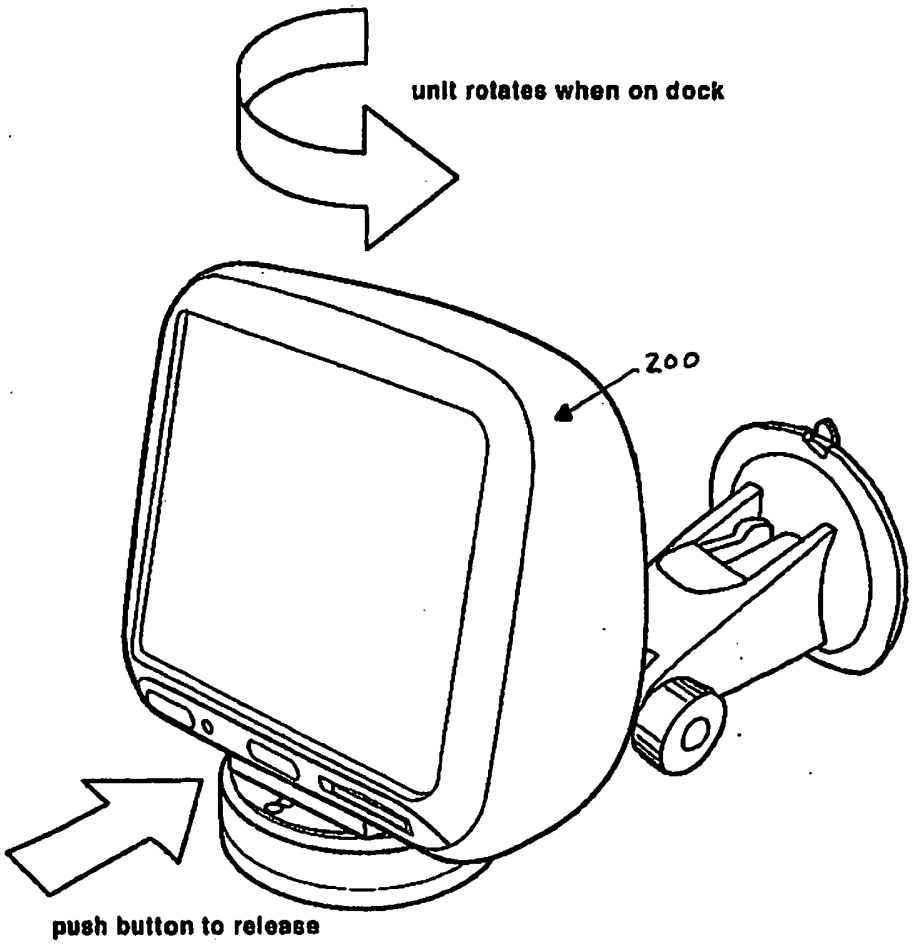


Figure 4B

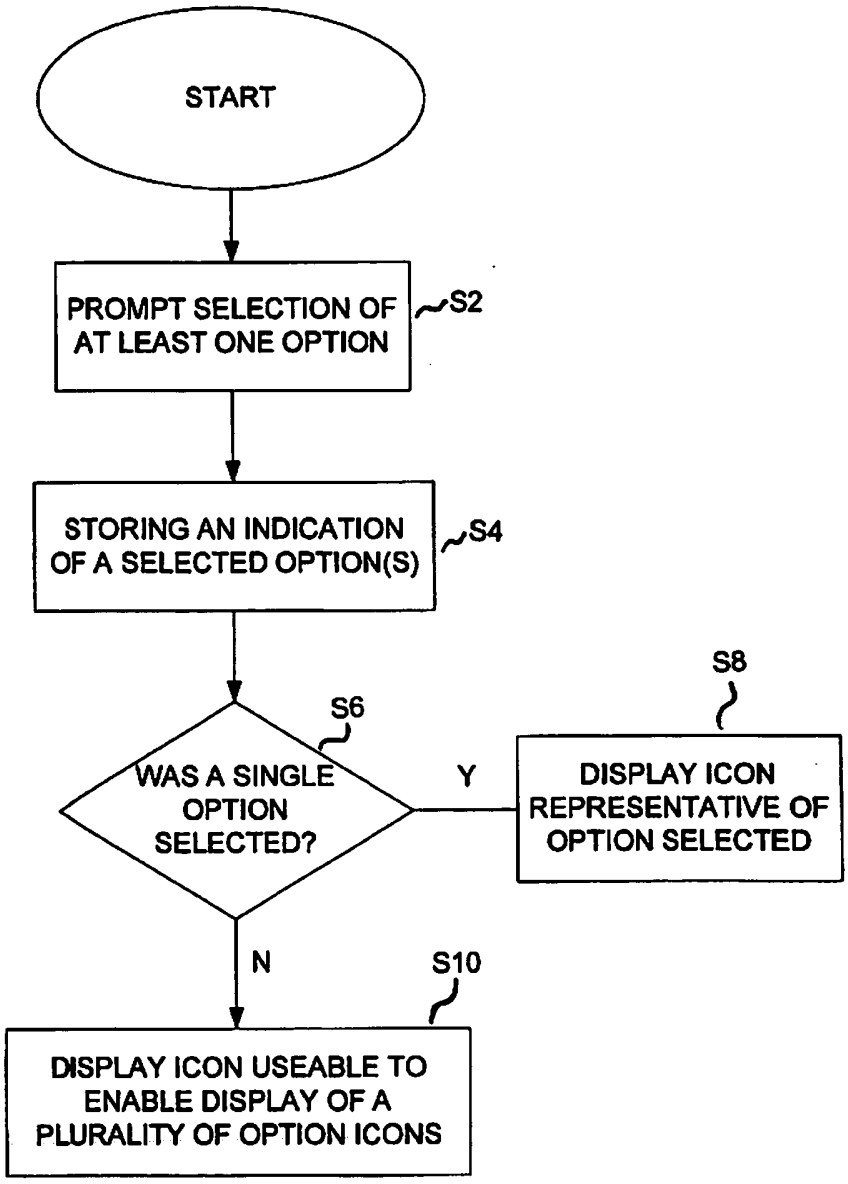

START
PROMPT SELECTION OF AT LEAST ONE OPTION
S2
STORING AN INDICATION OF A SELECTED OPTION(S)
S4
S6
WAS A SINGLE OPTION SELECTED?
Y
S8
DISPLAY ICON REPRESENTATIVE OF OPTION SELECTED
N
S10
DISPLAY ICON USEABLE TO ENABLE DISPLAY OF A PLURALITY OF OPTION ICONS

Fig. 5

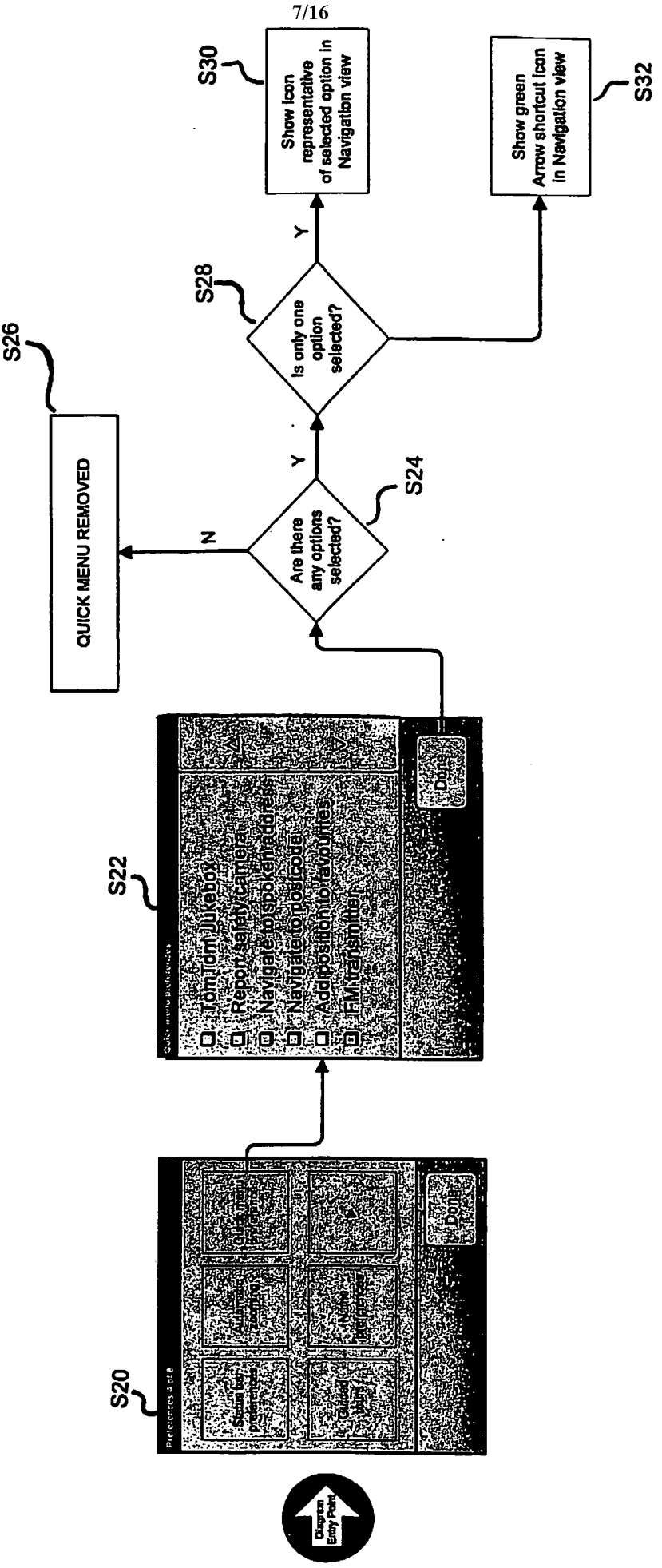


Diagram Entry Point
S20
S22
TomTom Jukebox
Report safety camera
Navigate to spoken address
Navigate to postcode
Add position to favourites
FM transmitter
Done
S24
Are there any options selected?
N
Y
QUICK MENU REMOVED
S26
S28
Is only one option selected?
Y
S30
Show icon representative of selected option in Navigation view
Show green Arrow shortcut icon in Navigation view
S32

Fig. 6

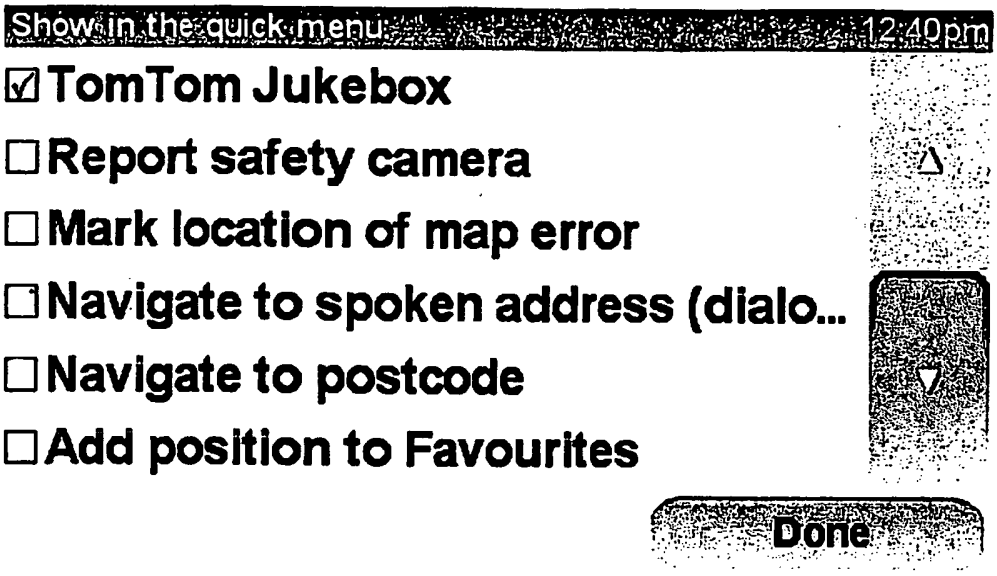

Show in the quick menu:
12:40pm
☑ TomTom Jukebox
☐ Report safety camera
☐ Mark location of map error
☐ Navigate to spoken address (dialo...
☐ Navigate to postcode
☐ Add position to Favourites
Done

Fig. 7A

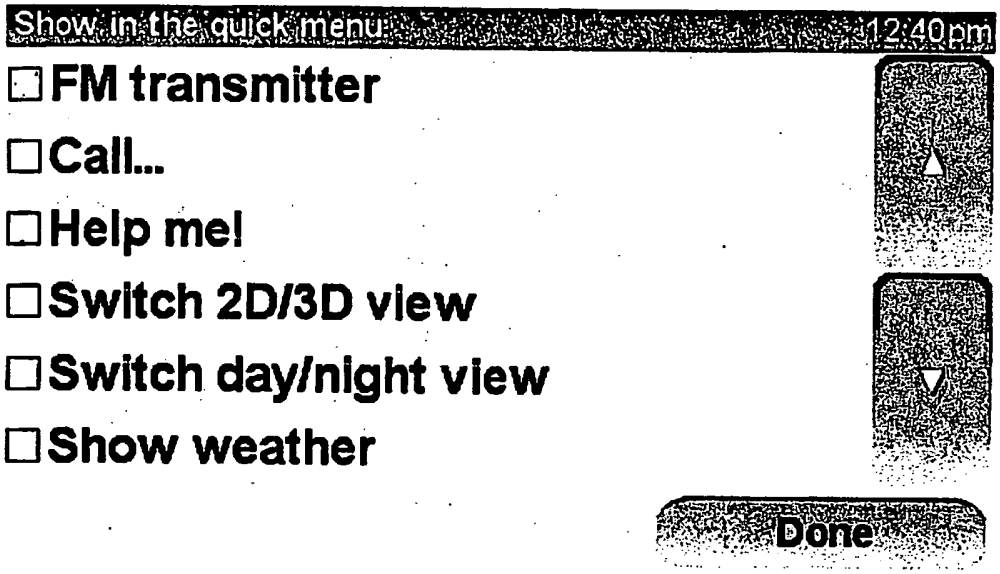

Show in the quick menu
12:40 pm
FM transmitter
Call...
Help me!
Switch 2D/3D view
Switch day/night view
Show weather
Done

Fig. 7B

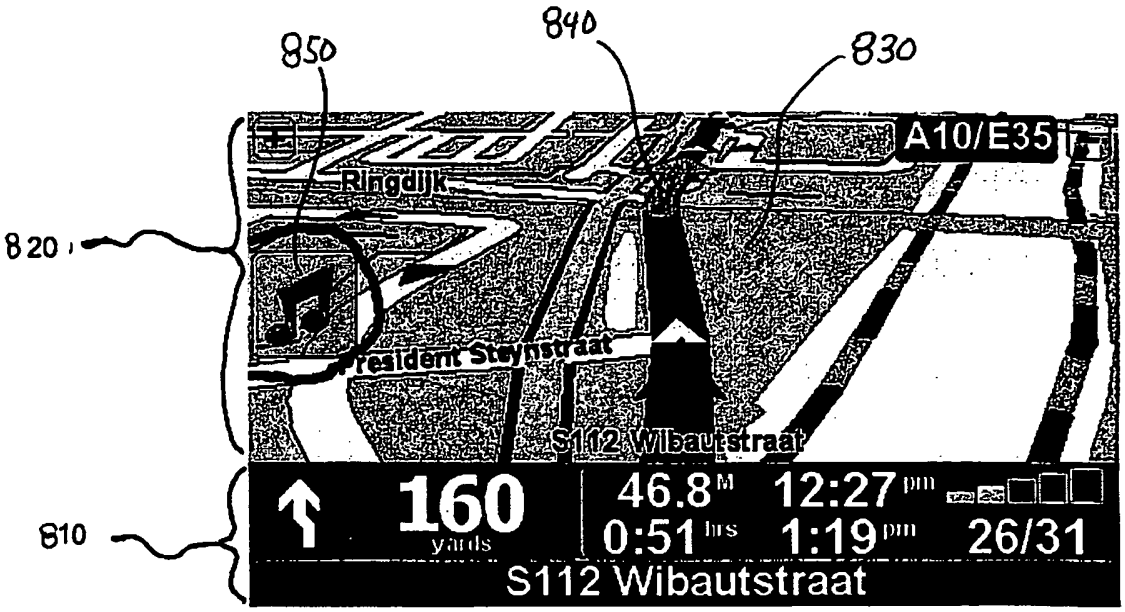

850
840
830
820
810
A10/E35
Ringdijk
President Steynstraat
S112 Wibautstraat
160
yards
46.8 M
12:27 pm
0:51 hrs
1:19 pm
26/31
S112 Wibautstraat

Fig. 8

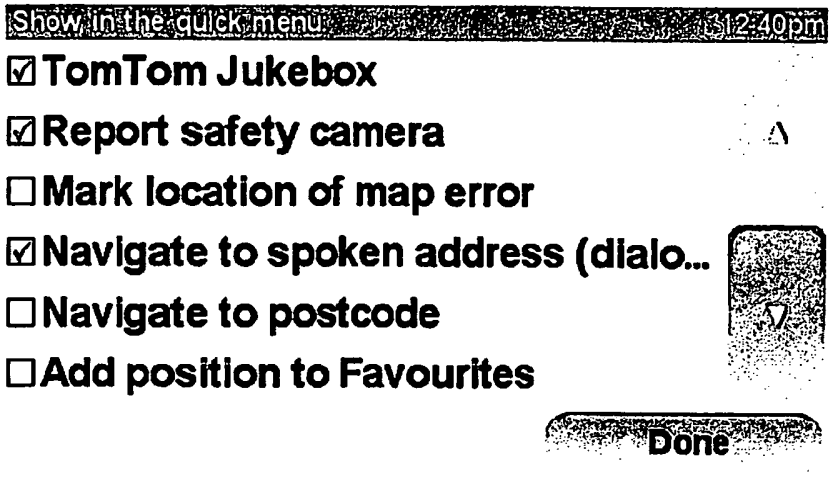

Show in the quick menu
12:40pm
☑ TomTom Jukebox
☑ Report safety camera
☐ Mark location of map error
☑ Navigate to spoken address (dialo...
☐ Navigate to postcode
☐ Add position to Favourites
Done

Fig. 9A

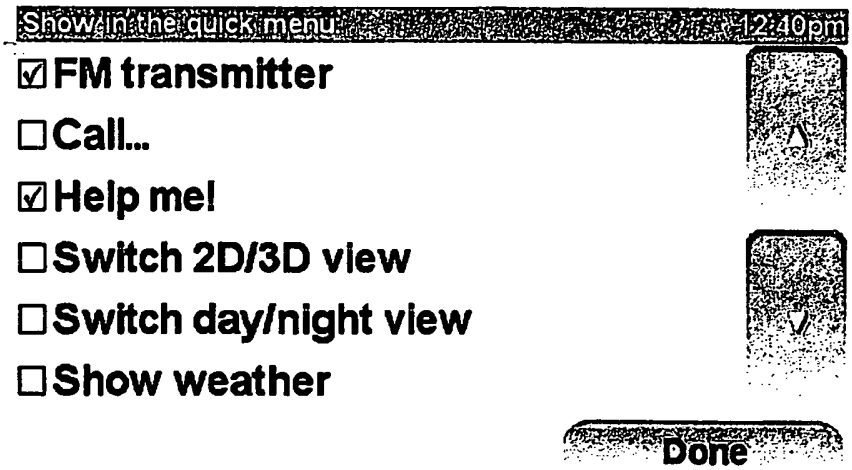

Show in the quick menu
12:40pm
☑ FM transmitter
☐ Call...
☑ Help me!
☐ Switch 2D/3D view
☐ Switch day/night view
☐ Show weather
Done

Fig. 9B

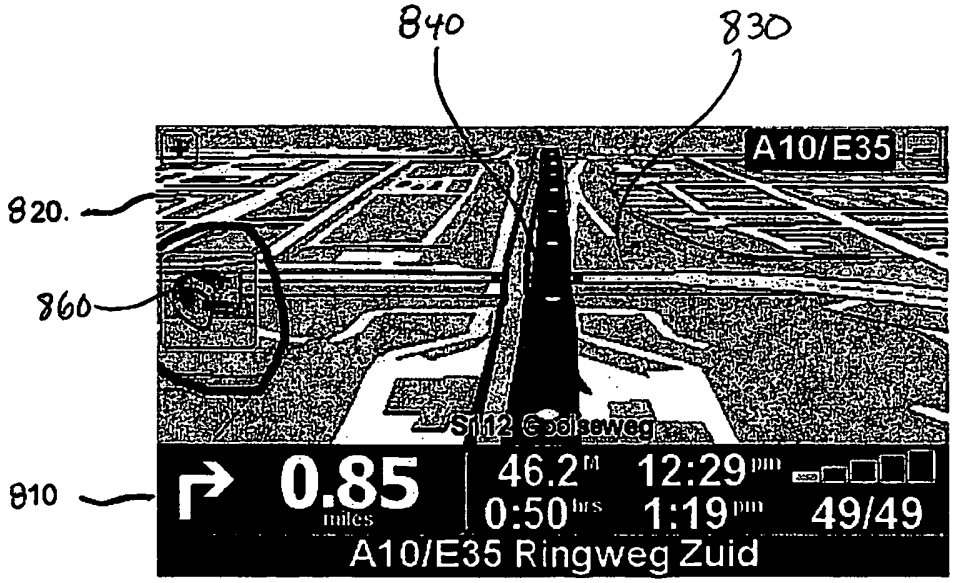

840
830
820
860
810
A10/E35
0.85
miles
46.2 M
12:29 pm
0:50 hrs
1:19 pm
49/49
A10/E35 Ringweg Zuid

Fig. 10

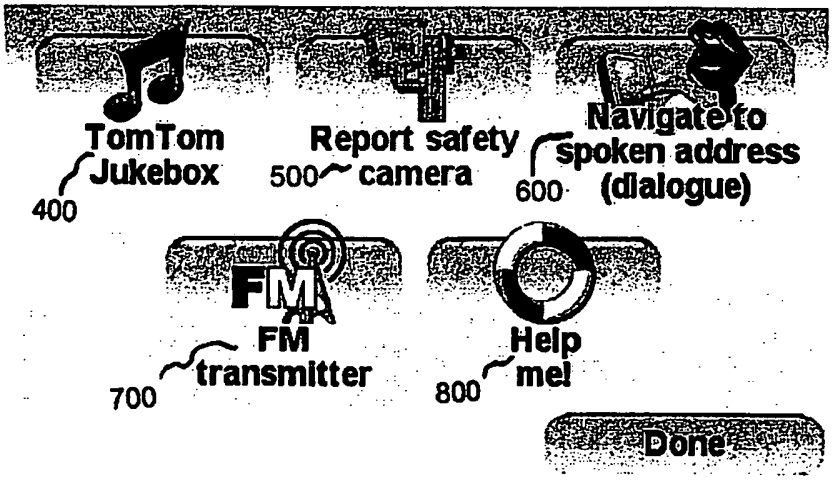

TomTom
Jukebox
400
Report safety
500
camera
Navigate to
spoken address
(dialogue)
600
FM
FM
transmitter
700
Help
me!
800
Done

Fig. 11

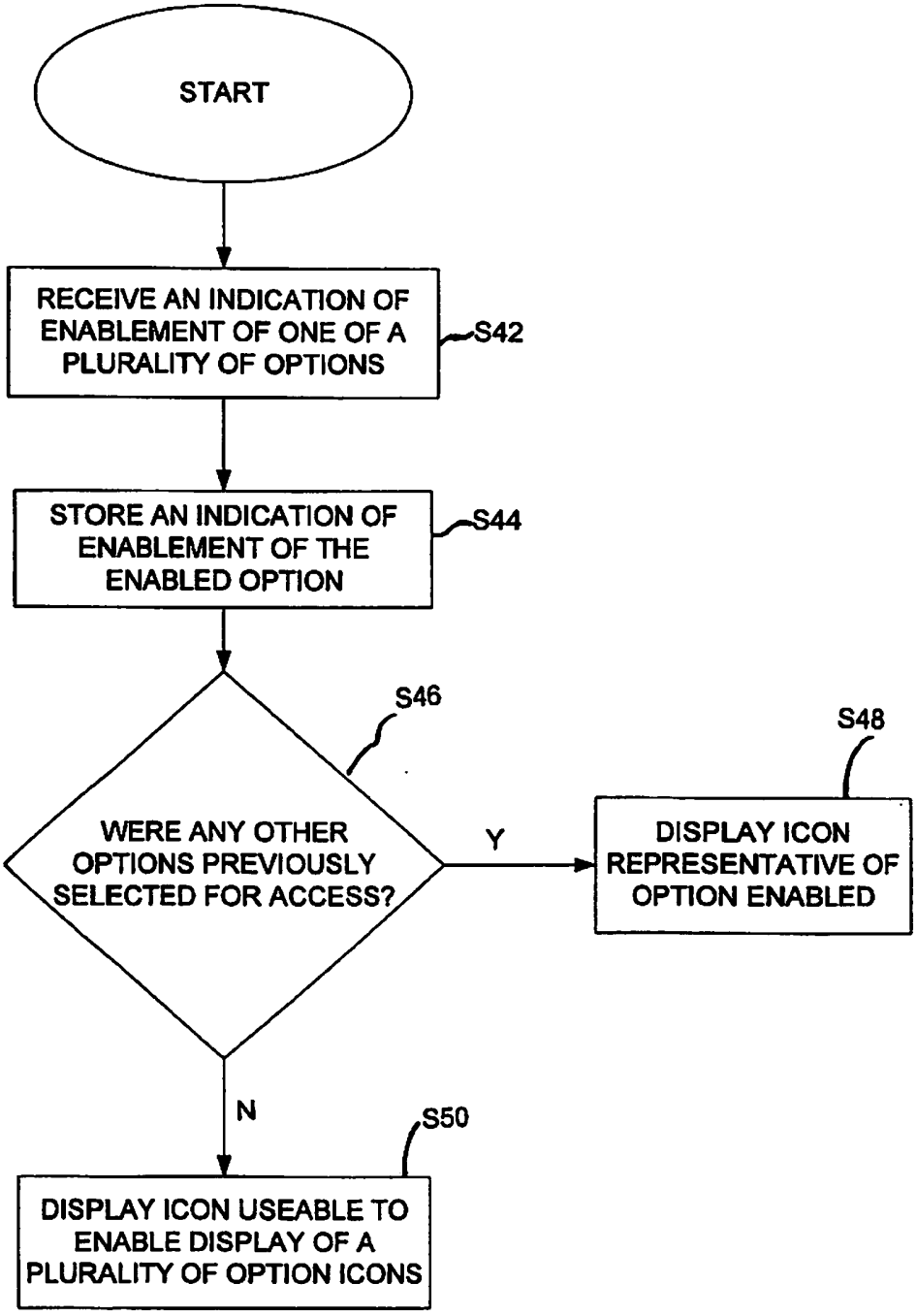

START
RECEIVE AN INDICATION OF ENABLEMENT OF ONE OF A PLURALITY OF OPTIONS
S42
STORE AN INDICATION OF ENABLEMENT OF THE ENABLED OPTION
S44
S46
WERE ANY OTHER OPTIONS PREVIOUSLY SELECTED FOR ACCESS?
Y
S48
DISPLAY ICON REPRESENTATIVE OF OPTION ENABLED
N
S50
DISPLAY ICON USEABLE TO ENABLE DISPLAY OF A PLURALITY OF OPTION ICONS

Fig. 12

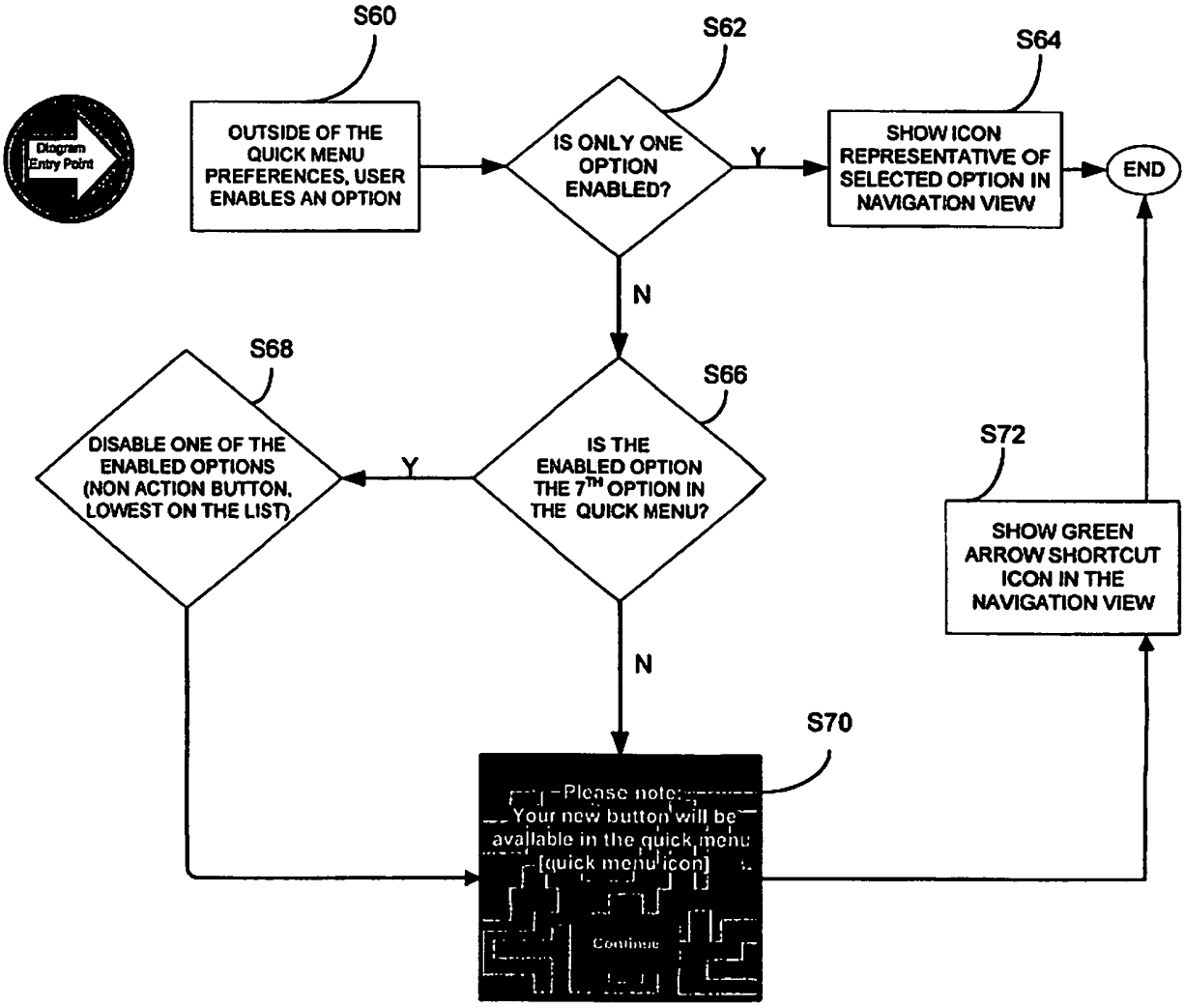


Diagram Entry Point
S60
OUTSIDE OF THE QUICK MENU PREFERENCES, USER ENABLES AN OPTION
S62
IS ONLY ONE OPTION ENABLED?
Y
S64
SHOW ICON REPRESENTATIVE OF SELECTED OPTION IN NAVIGATION VIEW
END
N
S66
IS THE ENABLED OPTION THE 7TH OPTION IN THE QUICK MENU?
Y
S68
DISABLE ONE OF THE ENABLED OPTIONS (NON ACTION BUTTON, LOWEST ON THE LIST)
N
S70
Please note:
Your new button will be available in the quick menu [quick menu icon]
Continue
S72
SHOW GREEN ARROW SHORTCUT ICON IN THE NAVIGATION VIEW

Fig. 13

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2007/008752

A. CLASSIFICATION OF SUBJECT MATTER
INV. G01C21/34 G08G1/0969

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

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
G01C G08G

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, IBM-TDB

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2004/243307 A1 (GEELEN PIETER [NL]) 2 December 2004 (2004-12-02) paragraphs [0026], [0073]; figure 1A paragraph [0049]; figures 4A,5A paragraphs [0056], [0057]; figures 7A,7B	1,3-9
X	US 2003/158655 A1 (OBRADOVICH MICHAEL L [US] ET AL) 21 August 2003 (2003-08-21) abstract; figure 1 paragraphs [0064] - [0066], [0076]; figure 11	1,3-9
A	US 2005/098681 A1 (BERSON BARRY L [US] ET AL) 12 May 2005 (2005-05-12) paragraph [0022]; figure 1 paragraph [0057]; figure 5	1,7,9

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

☒ See patent family annex.

* Special categories of cited documents :

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

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

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

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

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

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

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

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

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
18 January 2008	29/01/2008

Name and mailing address of the ISA/	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL – 2280 HV Rijswijk Tel. (+31–70) 340–2040, Tx. 31 651 epo nl, Fax: (+31–70) 340–3016	Jakob, Clemens

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/EP2007/008752

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2004243307 A1	02-12-2004	US 2007027628 A1	01-02-2007
US 2003158655 A1	21-08-2003	US 6542812 B1	01-04-2003
US 2005098681 A1	12-05-2005	NONE	

[19] 中华人民共和国国家知识产权局

[51] Int. Cl.
G01C 21/34 (2006.01)
G08G 1/0969 (2006.01)

[12] 发明专利申请公布说明书

[21] 申请号 200780049329.5

[43] 公开日 2009 年 11 月 18 日

[11] 公开号 CN 101583847A

[22] 申请日 2007.10.5
[21] 申请号 200780049329.5
[30] 优先权
[32] 2007. 1.10 [33] US [31] 60/879,523
[32] 2007. 1.10 [33] US [31] 60/879,549
[32] 2007. 1.10 [33] US [31] 60/879,553
[32] 2007. 1.10 [33] US [31] 60/879,577
[32] 2007. 1.10 [33] US [31] 60/879,599
[32] 2007. 1.10 [33] US [31] 60/879,529
[32] 2007. 1.10 [33] US [31] 60/879,601
[86] 国际申请 PCT/EP2007/008752 2007.10.5
[87] 国际公布 WO2008/083758 英 2008.7.17
[85] 进入国家阶段日期 2009.7.6
[71] 申请人 通腾科技股份有限公司
地址 荷兰阿姆斯特丹
[72] 发明人 彼得·格尔林
[74] 专利代理机构 北京律盟知识产权代理有限责任公司
代理人 刘国伟

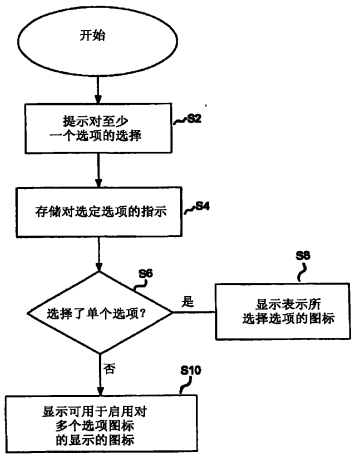
权利要求书 2 页 说明书 16 页 附图 16 页

[54] 发明名称

导航装置及用于快速选项访问的方法

[57] 摘要

本发明揭示一种用于导航的方法及装置。 在至少一个实施例中，所述方法包括：在导航装置的集成式输入及显示装置上提示对多个选项中的至少一者的选择；在接收到对所述多个选项中的至少一者的选择的指示后存储对所述至少一个选项的选择的指示；以及在所述导航装置的所述集成式输入及显示装置上显示用以启用所述至少一个选定选项的至少一个图标。 在至少一个实施例中，所述导航装置包括：集成式输入及显示装置，其用以提示对多个选项中的至少一者的选择；以及存储器，其用以在接收到对所述多个选项中的至少一者的选择的指示后存储对所述至少一个选项的选择的指示，其中所述集成式输入及显示装置可用以显示用以启用所述至少一个选定选项的至少一个图标。



1. 一种操作导航装置的方法，其由以下步骤表征：

致使在导航装置的集成式输入及显示装置上显示多个可选择显示选项的列表，所述显示选项表示所述导航装置的可配置特征，

接收对所述显示选项中的一者或一者以上的选择，所述选择导致对所选择的所述一个或一个以上显示选项的启用或停用以及对所述一个或一个以上显示选项的启用状态的存储，

确定处于启用状态中的显示选项的数目，

在确定至少一个显示选项被启用后，在所述导航装置的所述集成式输入及显示装置上连同地图信息一起显示至少一个图标，且建立可通过对所述至少一个图标的选择而调用的快捷方式例程，所述快捷方式例程致使显示对于所述至少一个经启用选项所表示的所述可配置特征特定的进一步信息。

2. 根据权利要求 1 所述的方法，其中依据是仅一个显示选项是经启用状态还是多个显示选项被如此启用而显示不同图标。

3. 根据权利要求 1 或 2 所述的方法，其中在以导航模式使用所述导航装置期间显示所述至少一个图标。

4. 根据任一前述权利要求所述的方法，其中在多个显示选项被启用的情况下，所述进一步信息为多个可选择的二级图标，所述二级图标每一者与所述装置的不同可配置特征相关。

5. 根据任一前述权利要求所述的方法，其中在多个选项被启用的情况下，在所述集成式输入及显示装置上连同地图信息一起显示多个图标，所述多个图标中的至少一者表示所述经启用显示选项中的一者。

6. 根据任一前述权利要求所述的方法，其中在选择所述至少一个图标中的一者后，自动启用对应于所述选定图标的所述可配置特征。

7. 一种计算机程序，其包含当在计算机上运行时适于执行根据权利要求 1 到 6 中任一

权利要求所述的所有步骤的计算机程序代码构件。

8. 一种根据权利要求 7 所述的计算机程序，其被包含在计算机可读媒体上或计算机可读媒体中。

9. 一种导航装置，其用于执行根据权利要求 1 到 6 中任一权利要求所述的方法，所述导航装置包含：

集成式输入及显示装置，其用以提示对多个显示选项中的至少一者的选择；所述显示选项表示所述导航装置的可配置特征，

存储器，其用以在接收到对所述多个显示选项中的至少一者的选择的指示后存储所述至少一个显示选项的启用状态，

处理器，其用以确定是否至少一个显示选项被启用，且在所述确定为肯定时致使在所述集成式输入及显示装置上连同地图信息一起显示至少一个图标，所述处理器进一步建立可通过对所述至少一个图标的选择而调用的快捷方式例程，所述快捷方式例程可由所述处理器执行以致使显示对于所述至少一个经启用显示选项所表示的所述可配置特征特定的进一步信息。

导航装置及用于快速选项访问的方法

技术领域

本申请案大体上涉及导航方法及装置。

背景技术

导航装置传统上主要用于交通工具使用领域中，例如用于汽车、摩托车、卡车、船等上。或者，如果所述导航装置为便携式的，则其可进一步在交通工具之间转移及/或可用于交通工具外部，例如用于徒步行进。

这些装置通常经特制以基于导航装置的初始位置及选定/输入的行进目的地（终点位置）来产生行进路线，请注意，所述初始位置可被键入到所述装置中，但传统上经由来自导航装置内的 GPS 接收器的 GPS 定位来计算。然而，更近些时间来，导航装置包括越来越多的额外特征或选项。

发明内容

本发明人发现，对某些选项的访问可能较为困难、缓慢或麻烦的，因为导航装置的主要用途是交通工具导航。因此，本申请案的发明人开发出一种方法，其用于使用户标记或选择其最常用选项且接着允许用户容易地访问这些所标记或选定的选项，即使在以导航模式使用导航装置期间也是如此。

在本申请案的至少一个实施例中，一种方法包括：在导航装置的集成式输入及显示装置上提示对多个选项中的至少一者的选择；在接收到对所述多个选项中的至少一者的选择的指示后存储对所述至少一个选项的选择的指示；以及在导航装置的集成式输入及显示装置上显示用以启用所述至少一个选定选项的至少一个图标。

在本申请案的至少一个实施例中，一种导航装置包括：集成式输入及显示装置，其用以提示对多个选项中的至少一者的选择；以及存储器，其用以在接收到对所述多个选项中的至少一者的选择的指示后存储对所述至少一个选项的选择的指示，其中所述集成式输入及显示装置可用以显示用以启用所述至少一个选定选项的至少一个图标。

在本申请案的至少一个其它实施例中，一种方法包括：接收对导航装置上的多个选项中的一者的启用的指示；在接收到对所述多个选项中的一者的启用的指示后存储对所

启用选项的启用的指示；以及在导航装置的集成式输入及显示装置上显示用于对所述一个所启用选项的后续启用的图标。

在本申请案的至少一个其它实施例中，一种导航装置包括：处理器，其用以接收对导航装置上的多个选项中的一者的启用的指示；存储器，其用以在接收到对所述多个选项中的一者的启用的指示后存储对所启用选项的启用的指示；以及集成式输入及显示装置，其用以显示用于对所述一个所启用选项的后续启用的图标。

附图说明

下文将通过使用实例性实施例来更详细地描述本申请案，将借助于附图来解释所述实例性实施例，在附图中：

图 1 说明全球定位系统（GPS）的实例性视图；

图 2 说明本申请案的实施例的导航装置的电子组件的实例性框图；

图 3 说明本申请案的实施例的服务器、导航装置及其间连接的实例性框图；

图 4A 及图 4B 为导航装置 200 的实施例的实施方案的透视图；

图 5 说明本申请案的实施例的实例性流程；

图 6 说明本申请案的实施例的另一实例性流程；

图 7A 及图 7B 说明本申请案的实施例的所显示的选项选择菜单的实例；

图 8 说明本申请案的实施例的在导航模式下的所显示的代表性快速访问图标的实例；

图 9A 及图 9B 说明本申请案的实施例的所显示的选项选择菜单的实例；

图 10 说明本申请案的实施例的在导航模式下的所显示的类属快速访问图标的实例；

图 11 说明本申请案的实例性实施例的所显示的快速访问菜单；

图 12 说明本申请案的另一实施例的实例性流程；以及

图 13 说明本申请案的另一实施例的另一实例性流程。

具体实施方式

本文中使用的术语仅用于描述特定实施例的目的，且并不希望限制本发明。如本文中所使用，单数形式“一”及“所述”希望还包括复数形式，除非上下文另外清楚地指出。将进一步了解到，术语“包括”在用于本说明书中时指定所陈述的特征、整体、步骤、操作、元件及/或组件的存在，但并不排除一个或一个以上其它特征、整体、步骤、操作、元件、组件及/或其群组的存在或添加。

在描述图式中所说明的实例性实施例的过程中，为了清楚起见，采用特定术语。然而，本专利说明书的揭示内容并不希望限于如此选定的特定术语，且应了解，每一特定元件包括以类似方式操作的所有技术等效物。

下文中参看图式来描述本专利申请案的实例性实施例，其中在若干视图中相同参考数字始终表示相同或对应的部分。相同数字始终指代相同元件。如本文中所使用，术语“及/或”包括相关联的所列项目中的一者或一者以上的任何及所有组合。

图 1 说明可由导航装置使用的全球定位系统（GPS）的实例性视图，所述导航装置包括本申请案的实施例的导航装置。所述系统为已知的且用于多种用途。一般来说，GPS 为基于卫星无线电的导航系统，其能够为无限数目个用户确定连续位置、速度、时间及（在一些例子中）方向信息。

先前称为 NAVSTAR 的 GPS 并入有在极其精确的轨道中与地球一起运转的多个卫星。基于这些精确轨道，GPS 卫星可将其位置中继到任何数目个接收单元。

当经专门装备以接收 GPS 数据的装置开始扫描射频以查找 GPS 卫星信号时实施 GPS 系统。在从 GPS 卫星接收到无线电信号后，所述装置经由多种不同常规方法中的一者来确定所述卫星的精确位置。在大多数情况下，所述装置将继续扫描以查找信号，直到其已获得至少三个不同的卫星信号为止（请注意，通常并不（但可以）使用其它三角测量技术用仅两个信号来确定位置）。通过实施几何三角测量，接收器利用三个已知位置来确定其自身相对于卫星的二维位置。这可以已知方式来完成。另外，获得第四卫星信号将允许接收装置通过相同的几何计算以已知方式来计算其三维位置。位置及速度数据可由无限数目个用户连续地实时更新。

如图 1 中所示，GPS 系统大体上由参考数字 100 表示。多个卫星 120 处于围绕地球 124 的轨道中。每一卫星 120 的轨道未必与其它卫星 120 的轨道同步，且实际上很可能不同步。可用于本申请案的导航装置的实施例中的 GPS 接收器 140 经展示为从各种卫星 120 接收扩频 GPS 卫星信号 160。

从每一卫星 120 连续地发射的扩频信号 160 利用使用极其准确的原子钟实现的高度准确的频率标准。每一卫星 120 作为其数据信号发射 160 的一部分而发射指示所述特定卫星 120 的数据流。相关领域的技术人员了解到，GPS 接收器装置 140 通常获得来自至少三个卫星 120 的扩频 GPS 卫星信号 160 以供所述 GPS 接收器装置 140 通过三角测量来计算其二维位置。额外信号的获得（其产生来自总共四个卫星 120 的信号 160）准许 GPS 接收器装置 140 以已知方式来计算其三维位置。

图 2 以方框组件格式来说明本申请案的实施例的导航装置 200 的电子组件的实例性

框图。应注意，导航装置200的框图并不包括所述导航装置的所有组件，而是仅表示许多实例性组件。

导航装置200位于外壳（未图示）内。所述外壳包括连接到输入装置220及显示屏幕240的处理器210。输入装置220可包括键盘装置、语音输入装置、触摸面板及/或用于输入信息的任何其它已知输入装置；且显示屏幕240可包括任何类型的显示屏幕，例如LCD显示器。在本申请案的至少一个实施例中，输入装置220及显示屏幕240经集成为集成式输入及显示装置，所述集成式输入及显示装置包括触摸垫或触摸屏输入端，其中用户仅需触摸显示屏幕240的一部分便可选择多个显示选项中的一者或激活多个虚拟按钮中的一者。

此外，其它类型的输出装置251还可包括（包括但不限于）声频输出装置。因为输出装置251可向导航装置200的用户产生声频信息，所以同样应了解，输入装置240还可包括麦克风以及用于接收输入语音命令的软件。

在导航装置200中，处理器210经由连接225而操作性地连接到输入装置240且经设置以经由连接225从输入装置240接收输入信息，且经由输出连接245而操作性地连接到显示屏幕240及输出装置251中的至少一者以将信息输出到所述至少一者。另外，处理器210经由连接235而操作性地连接到存储器230，且进一步适于经由连接275从输入/输出（I/O）端口270接收信息/将信息发送到输入/输出（I/O）端口270，其中I/O端口270可连接到在导航装置200外部的I/O装置280。外部I/O装置270可包括（但不限于）外部收听装置，例如耳机。到I/O装置280的连接可进一步为到任何其它外部装置（例如汽车立体声单元）的有线或无线连接，以用于不用手的操作及/或用于（例如）语音激活式操作，用于到耳机或头戴式耳机的连接及/或用于到（例如）移动电话的连接，其中移动电话连接可用以在导航装置200与（例如）因特网或任何其它网络之间建立数据连接且/或用以经由（例如）因特网或某一其它网络建立到服务器的连接。

在至少一个实施例中，导航装置200可经由移动装置400（例如移动电话、PDA及/或具有移动电话技术的任一装置）建立与服务器302的“移动”网络连接，从而建立数字连接（例如经由（例如）已知的蓝牙技术的数字连接）。此后，通过其网络服务提供者，移动装置400可建立与服务器302的网络连接（例如，通过因特网）。如此，在导航装置200（当其独自及/或在交通工具中行进时，其可为且通常为移动的）与服务器302之间建立“移动”网络连接以便为信息提供“实时”或至少非常“新式的”网关。

使用（例如）因特网410来建立移动装置400（经由服务提供者）与例如服务器302等另一装置之间的网络连接可以已知方式来完成。举例来说，这可包括TCP/IP分层协

议的使用。移动装置 400 可利用任何数目个通信标准，例如 CDMA、GSM、WAN 等。

如此，可利用经由数据连接（例如，经由移动电话或导航装置 200 内的移动电话技术）所实现的因特网连接。对于此连接，建立服务器 302 与导航装置 200 之间的因特网连接。这可（例如）通过移动电话或其它移动装置及 GPRS（通用分组无线电服务）连接（GPRS 连接是由电信运营商提供的用于移动装置的高速数据连接；GPRS 是用以连接到因特网的方法）来完成。

导航装置 200 可进一步经由（例如）现有的蓝牙技术以已知方式来完成与移动装置 400 的数据连接且最终完成与因特网 410 及服务器 302 的数据连接，其中数据协议可利用任何数目个标准，例如 GSRM、用于 GSM 标准的数据协议标准。

导航装置 200 可在导航装置 200 本身内包括其自身的移动电话技术（例如，包括天线，其中可进一步替代地使用导航装置 200 的内部天线）。导航装置 200 内的移动电话技术可包括如上指定的内部组件，且/或可包括可插入式卡，连同（例如）必要的移动电话技术及/或天线。如此，导航装置 200 内的移动电话技术可类似地经由（例如）因特网 410 以与任一移动装置 400 的方式类似的方式来建立导航装置 200 与服务器 302 之间的网络连接。

对于 GRPS 电话设置，具备蓝牙功能的装置可用以配合移动电话模型、制造商等的不断改变的频谱正确地工作，举例来说，模型/制造商特定设置可存储于导航装置 200 上。可以在先前或随后实施例中的任一者中所论述的方式来更新针对此信息而存储的数据。

图 2 进一步说明处理器 210 与天线/接收器 250 之间经由连接 255 的操作性连接，其中天线/接收器 250 可为（例如）GPS 天线/接收器。将了解到，为了说明而示意性地组合由参考数字 250 表示的天线与接收器，但天线及接收器可为分开定位的组件，且天线可为（例如）GPS 片状天线或螺旋天线。

另外，所属领域的技术人员将了解，以常规方式由电源（未图示）向图 2 中所示的电子组件供电。如所属领域的技术人员将了解的，图 2 中所示的组件的不同配置被视为属于本申请案的范围内。举例来说，在一个实施例中，图 2 中所示的组件可经由有线及/或无线连接等相互通信。因此，本申请案的导航装置 200 的范围包括便携式或手持式导航装置 200。

此外，图 2 的便携式或手持式导航装置 200 可以已知方式连接或“对接”到机动交通工具，例如汽车或船。接着可将此导航装置 200 从对接位置移除以用于便携式或手持式导航用途。

图 3 说明本申请案的实施例的服务器 302 与本申请案的导航装置 200（经由一般通信信道 318）的实例性框图。当在服务器 302 与本申请案的导航装置 200 之间建立经由通信信道 318 的连接（请注意，此连接可为经由移动装置的数据连接、经由个人计算机经由因特网的直接连接等）时，服务器 302 与导航装置 200 可通信。

除了可能未说明的其它组件之外，服务器 302 还包括处理器 304，所述处理器 304 操作性地连接到存储器 306 且经由有线或无线连接 314 进一步操作性地连接到大容量数据存储装置 312。处理器 304 进一步操作性地连接到发射器 308 及接收器 310，以经由通信信道 318 将信息发射到导航装置 200 及从导航装置 200 发送信息。所发送及所接收的信号可包括数据、通信及/或其它传播信号。可根据对于导航系统 200 的通信设计中所使用的通信要求及通信技术来选择或设计发射器 308 及接收器 310。另外，应注意，可将发射器 308 及接收器 310 的功能组合为信号收发器。

服务器 302 进一步连接到（或包括）大容量存储装置 312，请注意，大容量存储装置 312 可经由通信链路 314 耦合到服务器 302。大容量存储装置 312 含有大量导航数据及地图信息，且可同样为与服务器 302 分离的装置，或者可并入到服务器 302 中。

导航装置 200 适于通过通信信道 318 而与服务器 302 通信，且包括如先前关于图 2 所描述的处理器、存储器等以及发射器 320 及接收器 322 以通过通信信道 318 发送及接收信号及/或数据，请注意，这些装置可进一步用于与不同于服务器 302 的装置进行通信。另外，根据导航装置 200 的通信设计中所使用的通信要求及通信技术来选择或设计发射器 320 及接收器 322，且可将发射器 320 及接收器 322 的功能组合为单一收发器。存储于服务器存储器 306 中的软件为处理器 304 提供指令且允许服务器 302 向导航装置 200 提供服务。由服务器 302 提供的一个服务涉及处理来自导航装置 200 的请求及将导航数据从大容量数据存储装置 312 发射到导航装置 200。根据本申请案的至少一个实施例，由服务器 302 提供的另一服务包括针对所需应用使用各种算法来处理导航数据及将这些计算的结果发送到导航装置 200。

通信信道 318 一般表示连接导航装置 200 与服务器 302 的传播媒体或路径。根据本申请案的至少一个实施例，服务器 302 及导航装置 200 两者均包括用于通过所述通信信道发射数据的发射器及用于接收已通过所述通信信道发射的数据的接收器。

通信信道 318 不限于特定通信技术。另外，通信信道 318 不限于单一通信技术；也就是说，信道 318 可包括使用多种技术的若干通信链路。举例来说，根据至少一个实施例，通信信道 318 可适于提供用于电通信、光通信及/或电磁通信等的路径。如此，通信信道 318 包括（但不限于）以下各项中的一者或其组合：电路、例如电线及同轴电缆等

电导体、光纤电缆、转换器、射频（rf）波、大气、真空等。此外，根据至少一个各种实施例，通信信道318可包括中间装置，例如路由器、转发器、缓冲器、发射器及接收器。

举例来说，在本申请案的至少一个实施例中，通信信道318包括电话及计算机网络。此外，在至少一个实施例中，通信信道318可能能够适应例如射频、微波频率、红外通信等无线通信。另外，根据至少一个实施例，通信信道318可适应卫星通信。

通过通信信道318所发射的通信信号包括（但不限于）如给定通信技术可能要求或需要的信号。举例来说，所述信号可适于在蜂窝式通信技术中使用，所述蜂窝式通信技术例如为时分多址（TDMA）、频分多址（FDMA）、码分多址（CDMA）、全球移动通信系统（GSM）等。可通过通信信道318发射数字及模拟信号两者。根据至少一个实施例，这些信号可为如所述通信技术可能需要的经调制、经加密且/或经压缩的信号。

大容量数据存储装置312包括用于所需导航应用的足够存储量。大容量数据存储装置312的实例可包括磁性数据存储媒体（例如硬盘驱动器）、光学存储媒体（例如CD-Rom）、带电数据存储媒体（例如快闪存储器）、分子存储器等。

根据本申请案的至少一个实施例，服务器302包括可由导航装置200经由无线信道接入的远程服务器。根据本申请案的至少一个其它实施例，服务器302可包括位于局域网（LAN）、广域网（WAN）、虚拟专用网络（VPN）等上的网络服务器。

根据本申请案的至少一个实施例，服务器302可包括例如桌上型或膝上型计算机等个人计算机，且通信信道318可为连接在个人计算机与导航装置200之间的电缆。或者，可将个人计算机连接在导航装置200与服务器302之间以在服务器302与导航装置200之间建立因特网连接。或者，移动电话或其它手持式装置可建立到因特网的无线连接，以用于经由因特网将导航装置200连接到服务器302。

可经由信息下载为导航装置200提供来自服务器302的信息，所述信息下载可在用户将导航装置200连接到服务器302后周期性地更新且/或可在经由（例如）无线移动连接装置及TCP/IP连接在服务器302与导航装置200之间进行较恒定或频繁的连接后更具动态。对于许多动态计算，服务器302中的处理器304可用于处置大量的处理需要，然而，导航装置200的处理器210还可时常独立于到服务器302的连接而处置许多处理及计算。

连接到服务器302的大容量存储装置312可包括比能够维持于导航装置200本身上的数据更多量的制图及路线数据，包括地图等。举例来说，服务器302可使用一组处理算法来处理导航装置200的沿着所述路线行进的大部分装置。另外，存储于存储器312

中的制图及路线数据可对原先由导航装置200接收到的信号（例如，GPS信号）进行操作。

如上文所指示，本申请案的实施例的导航装置200包括处理器210、输入装置220及显示屏幕240。在至少一个实施例中，输入装置220及显示屏幕240经集成为集成式输入及显示装置以启用信息输入（经由直接输入、菜单选择等）及信息显示（例如通过触摸面板屏幕）两者。如所属领域的技术人员众所周知的，此屏幕可为（例如）触摸输入LCD屏幕。另外，导航装置200还可包括任何额外输入装置220及/或任何额外输出装置240，例如音频输入/输出装置。

图4A及图4B为导航装置200的实施例的实施方案的透视图。如图4A中所示，导航装置200可为包括集成式输入及显示装置290（例如，触摸面板屏幕）及图2的其它组件（包括但不限于内部GPS接收器250、微处理器210、电源、存储器系统220等）的单元。

导航装置200可搁置于臂292上，所述臂292本身可使用大吸盘294而紧固到交通工具仪表板/窗/等。此臂292为导航装置200可对接到的对接台的一个实例。

如图4B中所示，导航装置200可对接或通过（例如）将导航装置292搭扣连接到对接台的臂292来以其它方式连接到对接台的臂292（此仅为一个实例，因为用于连接到对接台的其它已知替代方案属于本申请案的范围内）。导航装置200可接着可在臂292上旋转，如图4B的箭头所示。为了释放导航装置200与对接台之间的连接，例如可按压导航装置200上的按钮（此仅为一个实例，因为用于与对接台断开连接的其它已知替代方案属于本申请案的范围内）。

在本申请案的至少一个实施例中，一种方法包括：在导航装置200的集成式输入及显示装置290上提示对多个选项中的至少一者的选择；在接收到对多个选项中的至少一者的选择的指示后存储对所述至少一个选项的选择的指示；以及在所述导航装置200的所述集成式输入及显示装置290上显示用以启用所述至少一个选定选项的至少一个图标。

在本申请案的至少一个实施例中，一种导航装置200包括：集成式输入及显示装置290，其用以提示对多个选项中的至少一者的选择；以及存储器230，其用以在接收到对所述多个选项中的至少一者的选择的指示后存储对所述至少一个选项的选择的指示，其中所述集成式输入及显示装置290可用以显示用以启用所述至少一个选定选项的至少一个图标。

图5中展示本申请案的实例性实施例。最初，在起始导航装置200之后，在步骤S2

中可（例如）经由导航装置200的集成式输入及显示装置290上的显示而提示用户选择多个选项中的至少一者。举例来说，此提示可包括导航装置200的多个选项及特征的显示，所述选项或特征中的一些可能与例如音乐功能等非导航功率相关。举例来说，可显示所述多个选项以准许选择所述选项中的一者或一者以上以用于随后快速及/或容易地访问所述选项。

此后，在步骤S4中，可在（例如）导航装置200的存储器230中存储对所述至少一个选项的选择的指示。因此，用户可选择多个选项以用于随后快速及/或容易地访问，或可选择单个选项。如果未选择任何选项，则导航装置200将正常操作，而不会具有用于基于这些动作而快速或以其它方式立即访问任何特定选项的任何能力（但可能已经建立此快速及容易访问或可能稍后启用用于随后快速及容易地访问的选项，如将关于本申请案的另一实施例进行解释）。

一旦在步骤S4中存储了选定选项，导航装置200的集成式输入及显示装置290便可接着显示用以启用所述至少一个选定选项的至少一个图标。所述图标可在以导航模式使用导航装置200期间（例如在显示导航及/或地图信息时）显示，（例如）以允许用户快速访问特定的选定选项。

任选地，所述方法可进一步用于确定是否选择了一个或一个以上选项，且可通过（例如）导航装置200的处理器210依据是否已选择了一个或一个以上选项而更改对图标的显示。举例来说，在步骤S6中，可确定是否已选择了单个选项。如果是，则步骤S8中对图标的显示可包括对表示所选择的选项的图标的显示。因此，通过（例如）在以导航模式使用导航装置200期间在集成式输入及显示装置290上显示单个图标以及通过使图标以表示选定选项的方式来显示，用户可快速地知道所述选项可易于访问及启用，且通过对其的后续选择，用户可容易地启用所需选项。

在步骤S6中，如果（例如）导航装置200的处理器210确定没有选择单个选项，而是（例如）选择了多个选项，则可在步骤S10中显示图标，所述图标可用以启用对多个选项图标的显示。因此，所述单个图标可在接收到对从所述多个选项中选择单个选项的指示后表示选定图标，或所述单个图标可为可用以在接收到对从所述多个选项中选择至少两个选项的指示后启用对多个可选择图标的显示的图标。因此，在接收到对表示一个选定选项的此所显示的单个图标的指示后，可通过（例如）导航装置200的处理器210启用选定选项。此外，如果所述单个图标可用以启用对多个图标的进一步显示，则当此图标被选择时，接着通过（例如）导航装置200的处理器210显示多个额外图标，所述额外图标在被选择时启用对应于选定图标的选项。在前述情形的任一者中，可在以导航

模式使用导航装置200期间维持对单个图标的显示，且可在以导航模式使用导航装置200期间将单个图标与地图信息一起显示。

图6提供本申请案的实施例的另一实例。如图6所示，在步骤S20中，可最初在（例如）集成式输入及显示装置290上向用户显示偏好模式，其包括用于选择选项或“快速菜单偏好”的选项。在选择了步骤S20中所显示的“快速菜单偏好”虚拟按钮后，可在步骤S22中显示多个可选择选项或“快速菜单偏好”，请注意，如果可显示的快速菜单偏好选项将不配合在整个显示屏幕上，则可利用箭头键（例如以使得用户能够滚动通过可选择的选项）。因此，在步骤S22中，提示用户选择所述多个选项中的至少一者。

此后，在步骤S24中，（例如）处理器210可确定是否选择了任何选项。如果未选择任何选项，则可在步骤S26中移除快速菜单，使得将不准许任何快速菜单访问，直到或除非稍后选择及/或启用选项。

如果步骤S24的回答为是，则（例如）处理器210可在步骤S28中确定仅选择了一个选项。因此，在接收到对所述多个选项中的至少一者的选择的指示后，可将对所述至少一个选项的选择的指示存储在（例如）存储器230中，且处理器210可确定是否仅选择了一个选项。如果是，则在步骤S30中，可在（例如）以导航模式或导航视图使用导航装置200期间（例如在集成式输入及显示装置290上）显示表示选定选项的图标（例如与地图及其它导航信息一起），其中所述显示包括对可用以启用所述一个选定选项的代表性图标的显示。举例来说，可设置旗标并将其存储在存储器230中，从而向处理器210指示在以导航模式显示后，应显示表示选定选项的图标。

如果步骤S28的回答为否，则方法移动到步骤S32，其中可以导航视图或导航模式在（例如）集成式输入及显示装置290上显示可用以启用对多个可选择图标的显示的图标（例如，绿色箭头快捷方式图标）。举例来说，可设置旗标并将其存储在存储器230中，从而向处理器210指示，在以导航模式或导航视图显示后，应显示可用以启用对多个可选择图标的显示以随后启用选定选项的图标。

图7A及图7B说明在（例如）导航装置200的集成式输入及显示装置290上显示的可用于提示对多个选项中的至少一者的选择的显示的实例。可在（例如）导航装置200的集成式输入及显示装置290上显示第一固定数目的可选择选项，如图7A中所示，其中可使用箭头键来滚动到所述固定数目的可选择选项的下一屏幕，例如图7B中所示的屏幕，其中可显示所述固定数目的可选择选项中的额外选项。所述选项可包括由导航系统200设置的任何固定数目的选项，且在种类或数目上不限于如图7A及7B中所示的两个显示屏幕中所展示的选项。此外，图7A的显示（其显示所述12个可选择选项中的仅

六个）不应被解释为被限制的，因为可在单个时间处显示任何数目的选项。

应注意，所述各种选项可包括用于访问导航装置200的许多不同类型的偏好、选项、特征中的任一者的选项，其呈准许更容易快速访问特定用户最需要的偏好、选项、特征的形式。举例来说，如果导航装置200的用户喜欢音乐，则所述用户可能希望选择如图7A中所示的“汤姆汤姆自动点唱机”选项以允许快速访问来将导航装置200用作（例如）MP3播放器或其它音乐播放器，即使当导航装置200当前处于导航模式时也是如此。如果用户需要快速访问（例如）天气，则用户可能希望选择（例如）如图7B中所示的“天气选项”。

优选的是向用户显示设置数目的选项以供选择，例如图7A及图7B中所示的12个选项，且进一步优选的是设置有限数目的选项以供在任何一个时间处选择，例如六个选项（或可在任何一个时间处在导航装置200的集成式输入及显示装置上显示的某一固定数目的选项）。因此，虽然本申请案不限于此，但在一个实例性实施例中，所述多个所提示选项包括设置数目的选项。此外，在本申请案的至少一个实施例中，可选择另一设置数目的选项（少于所述多个所提示选项）作为所述至少一个可选择选项。

图8提供当以导航模式使用或在导航视图中展示时在（例如）集成式输入及显示装置290上的导航装置200的实例性显示的说明。所述显示包括大体上两个显示区域，即导航或状态栏810及地图显示区域820。地图显示区域820包括大体上标记为830的地图信息及对行进路线840的指示，其中状态栏810区域包括时间、距离、速度等。

在图8所示的实例性实施例中，表示选定的“汤姆汤姆自动点唱机”选项的图标已被选择，因为所述仅有选项（例如，在图5的步骤S6中）经显示为（例如）音乐符号850，即表示选定的“汤姆汤姆自动点唱机”选项的单个图标（请注意，仅出于强调目的而已将音乐符号图标850圈出，因为此圈虽然可包括在内但不希望作为图8的显示的一部分）。

因此，在最初提示对图7A及图7B中的多个选项中的至少一者的选择之后，且在（例如）在存储器230中存储对选定的“汤姆汤姆自动点唱机”选项的指示之后，接着在使用导航装置200期间将表示选定的“汤姆汤姆自动点唱机”选项的单个图标与（例如）地图信息830及行进路线840一起显示。如此，如果用户正以此导航模式或导航视图（如图8中所示）利用导航装置200，则用户仍可快速且容易地访问导航装置200的“汤姆汤姆自动点唱机”选项。因此，在选择了图8中所示的音乐符号图标850后，导航装置200的处理器210将辨识到对图标的选择且将启用导航装置200的“汤姆汤姆自动点唱机”选项或特征。因此，向用户提供对此“喜爱”特征或选项的快速访问。当然，请注

意，音乐符号图标 850 仅是表示选定选项的图标的一个实例，且本申请案的实施例不应限于此。

图 9A 及图 9B 说明本发明的实施例的另一方面，其中在提示时选择多个选项（即，其中选择五个特定选择的方面）。因此，在此实例中，当选择了多个选项且将对多个选定选项的指示存储在（例如）存储器 230 中时，则（例如）处理器 210 将在以导航视图或导航模式使用导航装置 200 期间引导向用户显示单个更类属图标。这由（例如）图 10 中的图标 860 来展示。

图 10 包括在以（例如）导航模式使用导航模式 200 期间的导航视图显示，其有些类似于图 8 的显示，其中包括导航或状态栏 810、地图显示区域 820、地图信息 830 及行进路线 840。所显示的图标 860 并不表示任何特定模式，而是表示用户已选择了多个模式或选项的事实（因此，展示例如箭头 860 等通用图标，其中箭头可进一步为指示对此箭头的选择将需要对选项的进一步选择的绿色箭头）。

因此，在处理器 210 接收到对多个选项的选择的指示后，在集成式输入及显示装置 290 上显示表示进一步选择的图标，例如图 10 中所示的箭头 860。当此图标 860 被选择时，这启用对图标的进一步显示，例如如图 11 中所示。

因此，在接收到对图 9A 及图 9B 中所示的五个选定选项的指示后，在将此指示存储在存储器 230 中后，在显示表示进一步选择的图标（例如箭头图标 860）后，且响应于处理器 210 接收到对图 10 的箭头图标 860 的选择的指示，可在集成式输入及显示装置 290 上显示多个额外图标，这些图标表示所选择的选项。

举例来说，如图 10 中所示，所述五个图标 400、500、600、700 及 800 中的每一者表示图 9A 及图 9B 的五个选定选项中的每一者，请注意，在接收到对图 10 的所显示图标中的任一者的选择的指示后，处理器 210 将启用对应的选定选项。因此，如果导航装置 200 的用户仅选择了一个选项，则将在导航模式下仅向用户显示表示所述选项的单个图标（例如图 8 的音乐符号图标 850）；且如果选择了多个选项，则显示单个类属图标（例如图 9 的箭头图标 860），其中对所述类属图标 860 的选择将接着启用对图 11 中所示的进一步图标的显示，所述图标每一者表示选定选项，其中对其的选择将启用对应选项。

如先前指示，对图 11 中所示的特定图标的选择将启用特定选项。如果在特定时间无法启用选项，例如在（例如）不存在安全相机的特定区域中报告安全相机的选项，则所述图标可区别于对其它图标（例如图 11 中所示的灰色显示图标 500）的显示。如此，不可选择所述图标以启用特定选项。应注意，已关于本申请案的方法描述了本申请案的实施例的前述方面中的每一者。然而，本申请案的至少一个实施例针对于一种导航装置

200，其包括：集成式输入及显示装置 290，其用以提示对多个选项中的至少一者的选择；以及存储器 230，其用以在接收到对所述多个选项中的至少一者的选择的指示后存储对所述至少一个选项的选择的指示，其中所述集成式输入及显示装置 290 可用以显示用以启用所述至少一个选定选项的至少一个图标。所述导航装置 200 可进一步包括：处理器 210，其用以在接收到对选项选择的指示后启用选项及/或启用图标显示。因此，所述导航装置 200 可用以执行关于图 5 到 11 而描述的方法的各种方面，如所属领域的技术人员将了解。因此，出于简洁起见而省略了进一步阐释。

在本申请案的至少一个其它实施例中，一种方法包括：接收对导航装置 200 上的多个选项中的一者的启用的指示；在接收到对所述多个选项中的至少一者的启用的指示后存储对所述选项的启用的指示；以及在导航装置 200 的集成式输入及显示装置 290 上显示用于随后启用所述一个经启用选项的图标。

在本申请案的至少一个其它实施例中，一种导航装置包括：处理器，其用以接收对导航装置上的多个选项中的一者的启用的指示；存储器，其用以在接收到所述多个选项中的一者的启用的指示后存储对所述经启用选项的启用的指示；以及集成式输入及显示装置，其用以显示用于随后启用所述一个经启用选项的图标。

图 12 说明用于实施本申请案的至少一个额外实施例的方法流程。在步骤 S42 中，（例如）处理器 210 接收对多个选项中的一者的启用的指示。此后，在步骤 S44 中，将对所述经启用选项的启用的指示存储在（例如）存储器 203 中，且此后，在（例如）集成式输入及显示装置 290 上显示用于随后启用所述经启用选项的图标。应注意，所述显示可包括两个不同显示，这取决于先前是否已选择了其它选项进行访问。

举例来说，在步骤 S44 中存储对经启用选项的指示之后，在步骤 S46 中（例如）处理器 210 可确定先前是否选择了任何其它选项进行访问（例如经由例如如本申请案的图 7A 及图 7B 或图 9A 及图 9B 中所示的对多个选项的提示）。如果否，则在步骤 S48 中显示表示所述经启用选项的图标。因此，如果先前未选择任何其它选项进行访问（例如经由图 7A 及图 7B 或图 9A 及图 9B 中的提示），则一旦特定选项被启用，处理器 210 便可引导集成式输入及显示装置 290 显示用于随后启用所述选项的图标（例如图 8 的音乐符号图标 850，其中假设“汤姆汤姆自动点唱机”已被启用，且先前未选择任何其它选项进行访问）。

在此情形中，导航装置 200 假设如果用户曾启用所述选项，则其可能需要快速访问以再次启用所述选项。此快速访问可通过在确定先前未选择所述多个选项中的其它选项进行访问后在（例如）集成式输入及显示装置 290 上显示表示经启用选项的图标来实现。

可在以（例如）导航模式使用导航装置 200 期间以有些类似于先前关于图 8 所描述的方式的方式将此图标与地图信息 830 一起显示。

在步骤 S46 中，如果确定先前已（例如）经由从图 7A、7B、9A 或 9B 中所示的所提示选项菜单中进行选择而选择了任何其它选项进行访问，则可在步骤 S50 中显示图标（例如图 10 的箭头图标 860），其可用以启用对多个选项图标（例如图 11 的图标 400、500、600、700 及 800）的显示以用于随后启用选定选项。因此，虽然可在以导航模式使用导航装置 200 期间将此图标与地图信息一起显示，但在确定先前选择了所述多个选项中的至少一个其它选项进行访问后，所述图标将不表示经启用选项，且将可用以启用对多个图标的进一步显示，所述图标每一者表示所述至少一个经启用选项且表示先前经选择以进行访问的选项。举例来说，将是这样的情况，其中所显示的图标可为（例如）图 10 的箭头图标 860，其可用以启用对多个先前经启用选项的进一步显示且表示先前经选择以进行访问的选项。所述选项可包括图 11 中所示的选项，其中在接收到对（例如）多个所显示图标 400、500、600、700 及 800 中的一者的后续选择的指示后，启用对应于选定图标的选项。

应注意，已关于本申请案的方法描述了本申请案的实施例的前述方面中的每一者。然而，本申请案的至少一个实施例针对于一种导航装置 200，其包括：处理器 210，其用以接收对导航装置 200 上的多个选项中的一者的启用的指示；存储器 230，其用以在接收到对所述多个选项中的一者的启用的指示后存储对所述经启用选项的启用的指示；以及集成式输入及显示装置 290，其用以显示用于随后启用所述一个经启用选项的图标。因此，所述导航装置 200 可用于执行关于图 12 所描述的方法的各种方面，如所属领域的技术人员将了解。因此，出于简洁起见而省略了进一步阐释。

图 13 说明本申请案的额外实施例的另一实例性流程图。在步骤 S60 中，在（例如）图 6 的步骤 S22 的快速菜单偏好选择外部，用户可启用选项，这可由（例如）处理器 210 检测到。此后，在步骤 S62 中，处理器 210 确定是否仅启用了一个选项。如果是，则在步骤 S64 中，在导航装置 200 的导航视图或导航模式中显示表示选定特征及选定选项的图标，例如图 8 的音乐符号图标 850。

如果对步骤 S62 所产生的问题的回答为否，则方法前进到步骤 S66，其中处理器 210 确定经启用选项是否为快速菜单中的第七选项（假设导航系统仅包括可同时被选择以进行快速访问的固定或设置数目的选项，例如六个选项），即是否已经选择了任何其它设置的最大数目的选项进行访问。如果处理器 210 确定所述选项不是第七选项（即，其不是高于通过快闪菜单过程启用的设置数目的选项的选项），则方法移动到步骤 S70，从而

启用显示，请注意，新近启用的选项将可在快速菜单中使用以再次容易地选择所述选项。

此后，方法前进到步骤 S72，其中可在导航装置 200 的导航视图或导航模式中显示箭头快捷方式图标（例如图 10 的图标 860）。如果在步骤 S66 中确定经启用选项为第七选项或高于可经由快速菜单过程访问的设置数目的选项的选项，则过程移动到步骤 S68，其中停用所述经启用选项中的一者，以便允许对新近启用的选项的快速菜单访问。此后，处理器 210 可启用显示以在步骤 S70 中告知用户此新近启用的选项，其中可在步骤 S72 中经由导航装置 200 的导航视图中显示的绿色箭头快捷方式图标来访问所述选项。如果用户不愿意将在快速菜单中取代特定图标，则用户可接着返回到选择菜单且选择新的选项偏好。

应注意，已关于本申请案的方法描述了本申请案的实施例的前述方面中的每一者。然而，本申请案的至少一个实施例针对于一种导航装置 200，其包括：处理器 210，其用以接收对导航装置 200 上的多个选项中的一者的启用的指示；存储器 230，其用以在接收到对所述多个选项中的一者的启用的指示后存储对所述经启用选项的启用的指示；以及集成式输入及显示装置 290，其用以显示用于随后启用所述一个经启用选项的图标。因此，所述导航装置 200 可用以执行关于图 13 所描述的方法的各个方面，如所属领域的技术人员将了解。因此，出于简洁起见而省略了进一步阐释。

上文表达的至少一个实施例的方法可实施为包含于载波或传播信号中的计算机数据信号，所述计算机数据信号表示指令序列，所述指令序列在由处理器（例如服务器 302 的处理器 304 及/或导航装置 200 的处理器 210）执行时致使所述处理器执行相应方法。在至少一个其它实施例中，上文提供的至少一种方法可在上文实施为计算机可读或计算机可存取媒体（例如先前描述的存储器装置中的一者（例如存储器 230））上所含有的一组指令，以在由处理器或其它计算机装置执行时执行相应方法。在不同的实施例中，媒体可为磁性媒体、电子媒体、光学媒体等。

更进一步地，前述方法中的任一者可体现为程序的形式。程序可存储于计算机可读媒体上且适于当在计算机装置（包括处理器的装置）上运行时执行前述方法中的任一者。因此，存储媒体或计算机可读媒体适于存储信息且适于与数据处理设施或计算机装置交互以执行上文所提及的实施例中的任一者的方法。

存储媒体可为安装于计算机装置主体内部的内建式媒体或经布置成可与计算机装置主体分开的可移除式媒体。内建式媒体的实例包括（但不限于）可重写非易失性存储器（例如 ROM 及快闪存储器）及硬盘。可移除式媒体的实例包括（但不限于）：光学存储媒体，例如 CD-ROM 及 DVD；磁光存储媒体，例如 MO；磁性存储媒体，包括（但

不限于）软盘（商标）、盒式磁带及可移除式硬盘；具有内建式可重写非易失性存储器的媒体，包括（但不限于）存储卡；以及具有内建式 ROM 的媒体，包括（但不限于）ROM 盒式磁带；等等。此外，关于所存储图像的各种信息（例如，特性信息）可以任何其它形式进行存储，或其可以其它方式提供。

如所属领域的技术人员在阅读本揭示内容后将了解，导航装置 200 的电子组件及/或服务器 302 的组件可体现为计算机硬件电路或体现为计算机可读程序，或者体现为所述两者的组合。

本申请案的实施例的系统及方法包括在处理器上操作以执行根据本申请案的教示的方法中的至少一者的软件。所属领域的技术人员在阅读并理解本发明后将了解可从基于计算机的系统中的计算机可读媒体起动软件程序以执行所述软件程序中所找到的功能的方式。所属领域的技术人员将进一步了解可用于创建经设计以实施并执行本申请案的方法中的至少一者的软件程序的各种编程语言。

可使用面向对象的语言（包括但不限于 JAVA、Smalltalk、C++等）以面向对象地构造所述程序，且可使用程序语言（包括但不限于 COBAL、C 等）以面向程序地构造所述程序。软件组件可以所属领域的技术人员众所周知的任何数目种方式进行通信，其包括（但不限于）通过应用程序接口（API）、进程间通信技术（包括但不限于报告程序调用（RPC）、公用对象请求代理程序结构（CORBA）、组件对象模型（COM）、分布式组件对象模型（DCOM）、分布式系统对象模型（DSOM）及远程方法调用（RMI））。然而，如所属领域的技术人员在阅读本申请案揭示内容后将了解，本申请案的教示不限于特定编程语言或环境。

已相对于为导航装置 200 改进准确度、处理器速度及用户交互简易性等来以实例方式而非以限制方式描述了以上系统、装置及方法。

另外，在本揭示内容及所附权利要求书的范围内，不同实例性实施例的元件及/或特征可彼此组合且/或彼此替代。

更进一步地，可以设备、方法、系统、计算机程序及计算机程序产品的形式体现本发明的上述及其它实例性特征中的任一者。举例来说，可以系统或装置的形式体现前述方法，其包括（但不限于）用于执行图式中所说明的方法的任何结构。

已如此描述了实例性实施例，将显而易见的是可以许多方式使其变化。不应将所述变化视为脱离本发明的精神及范围，且所属领域的技术人员将显而易见的所有所述修改均希望包括于所附权利要求书的范围内。

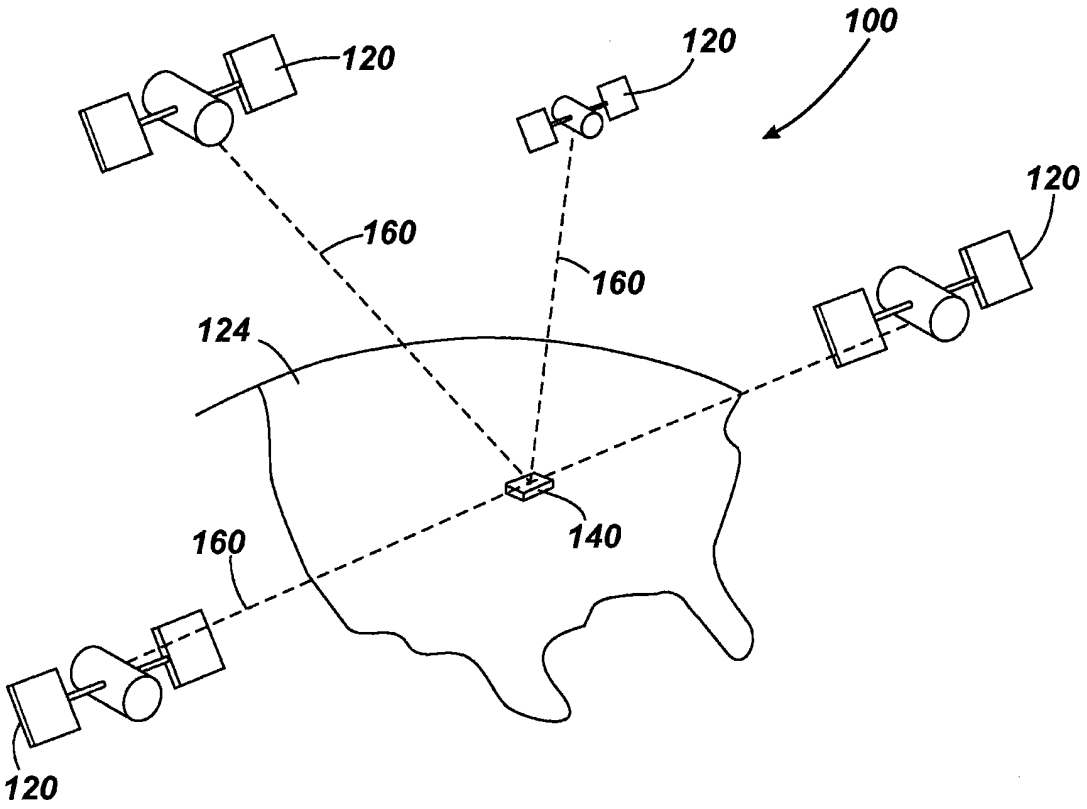


图1

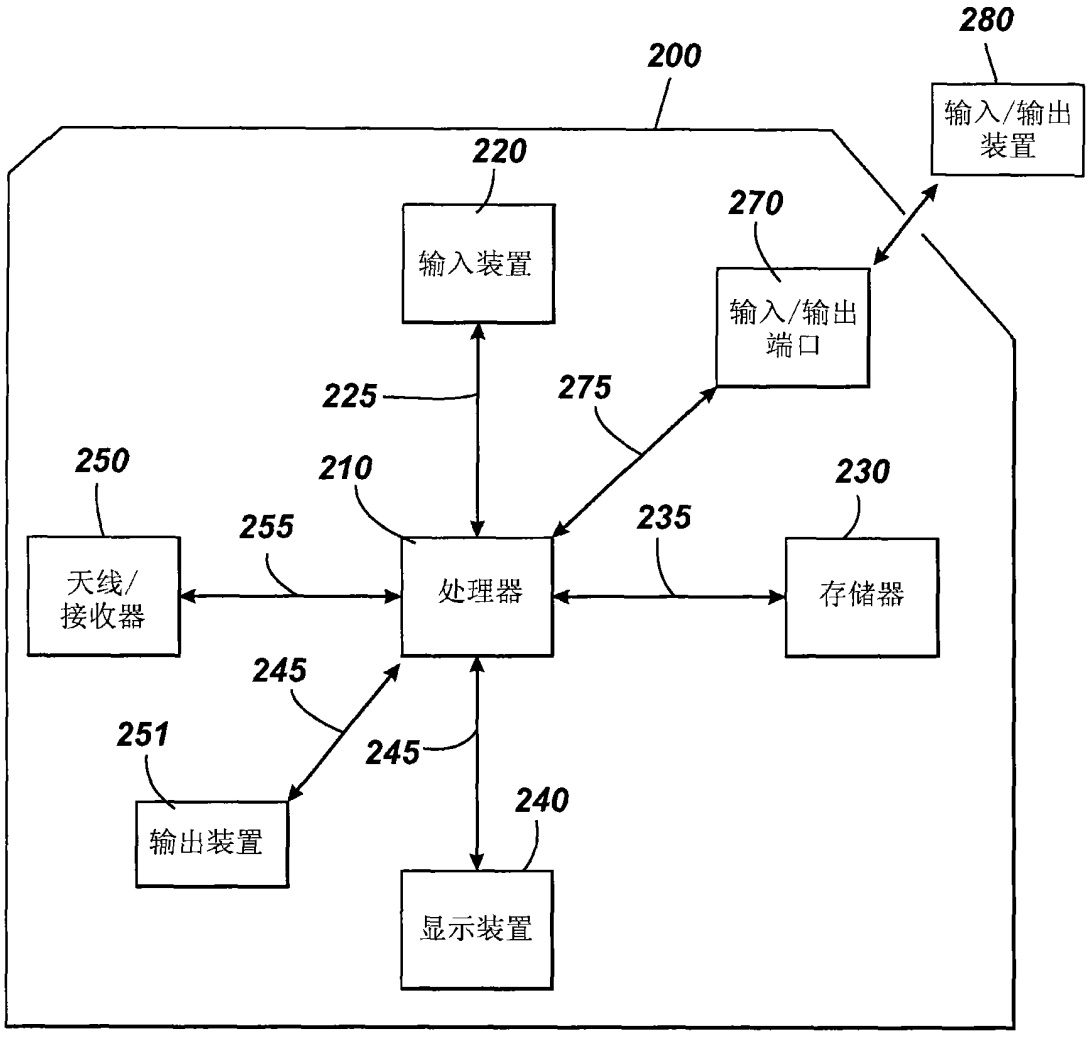

200
280
输入/输出装置
220
输入装置
270
输入/输出端口
225
275
250
210
230
255
235
天线/接收器
处理器
存储器
245
251
245
240
输出装置
显示装置

图2

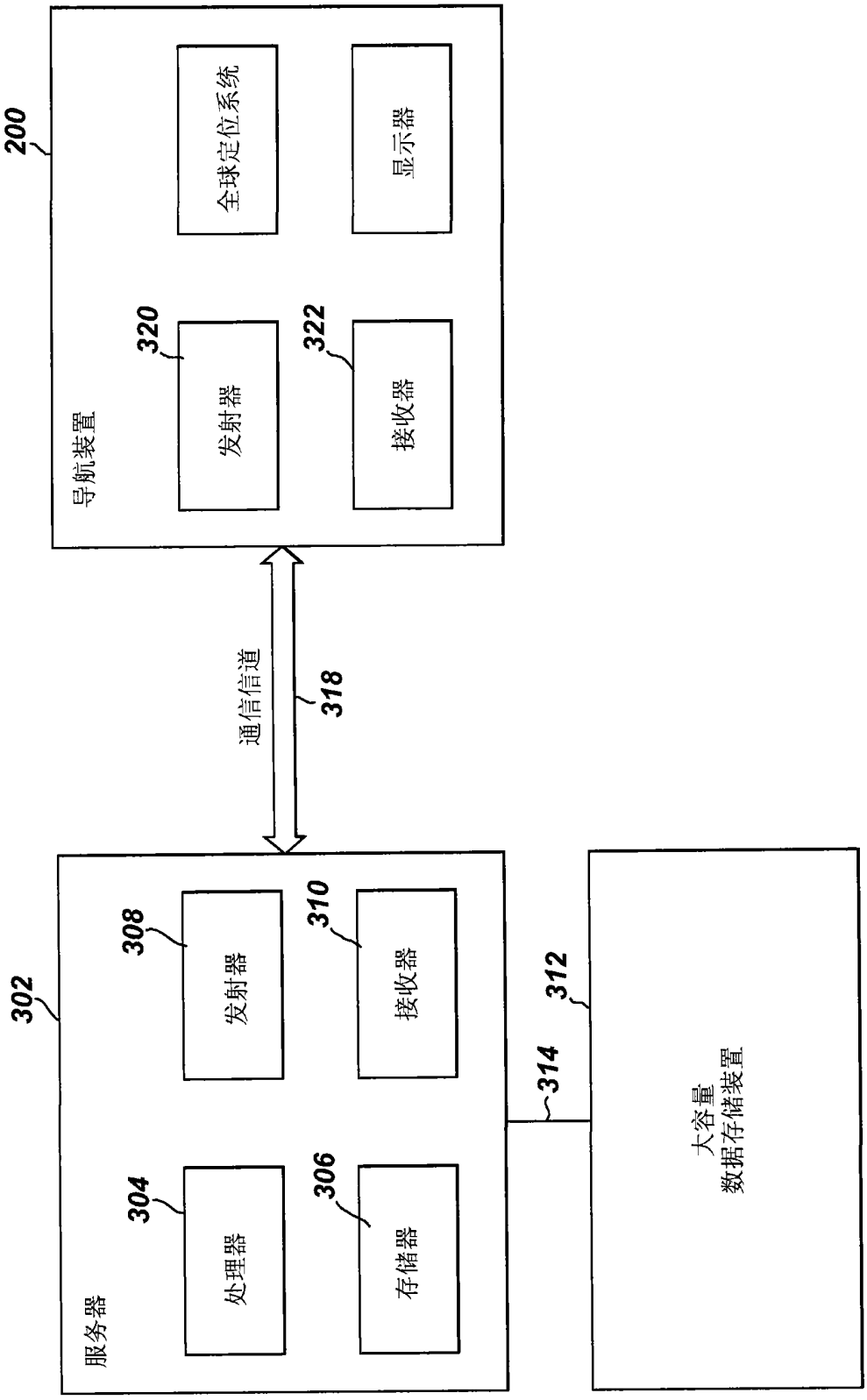

200
导航装置
全球定位系统
显示器
320
发射器
322
接收器
通信信道
318
302
服务器
308
发射器
310
接收器
304
处理器
306
存储器
312
314
大容量
数据存储装置

图3

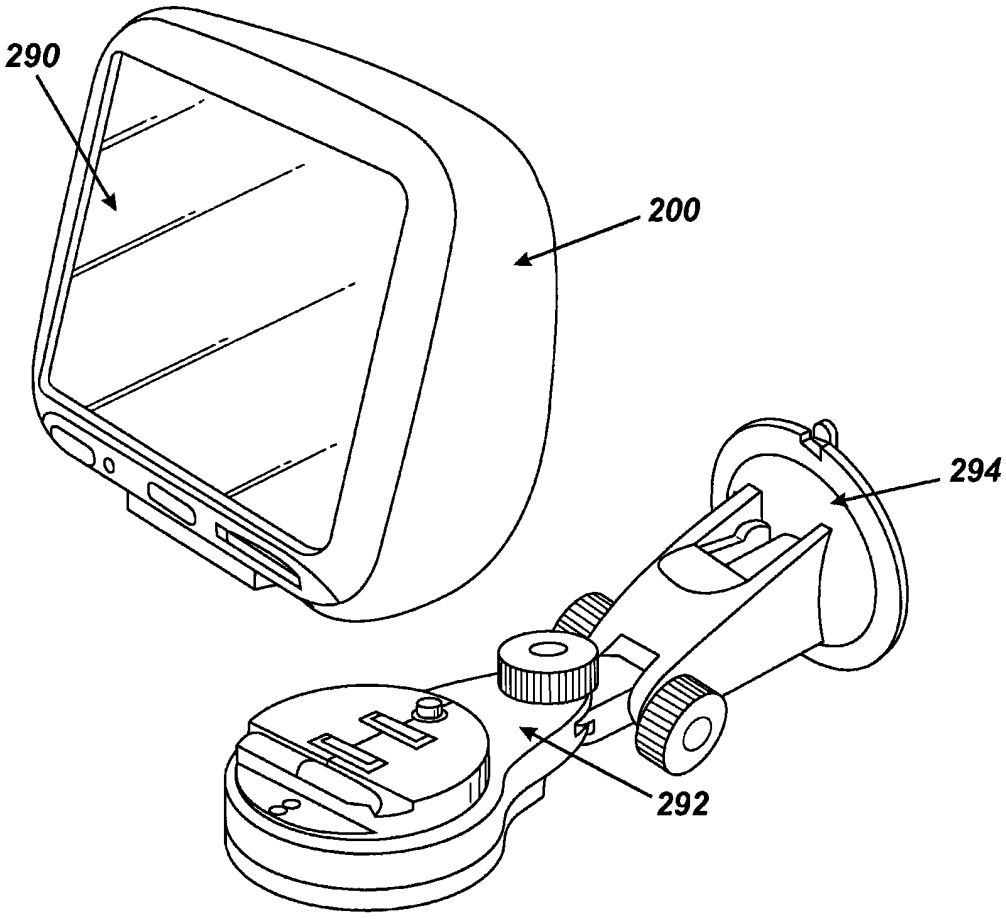


图4A

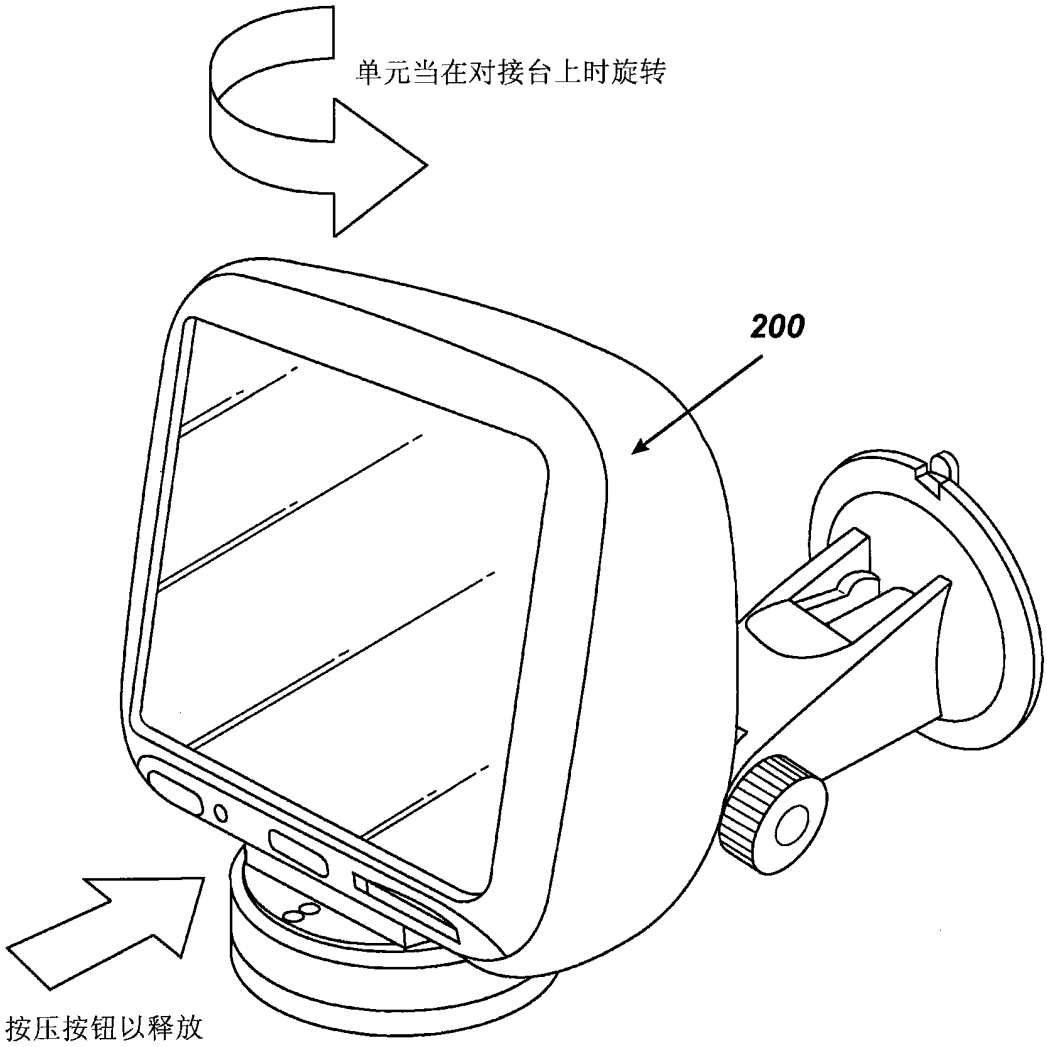


图4B

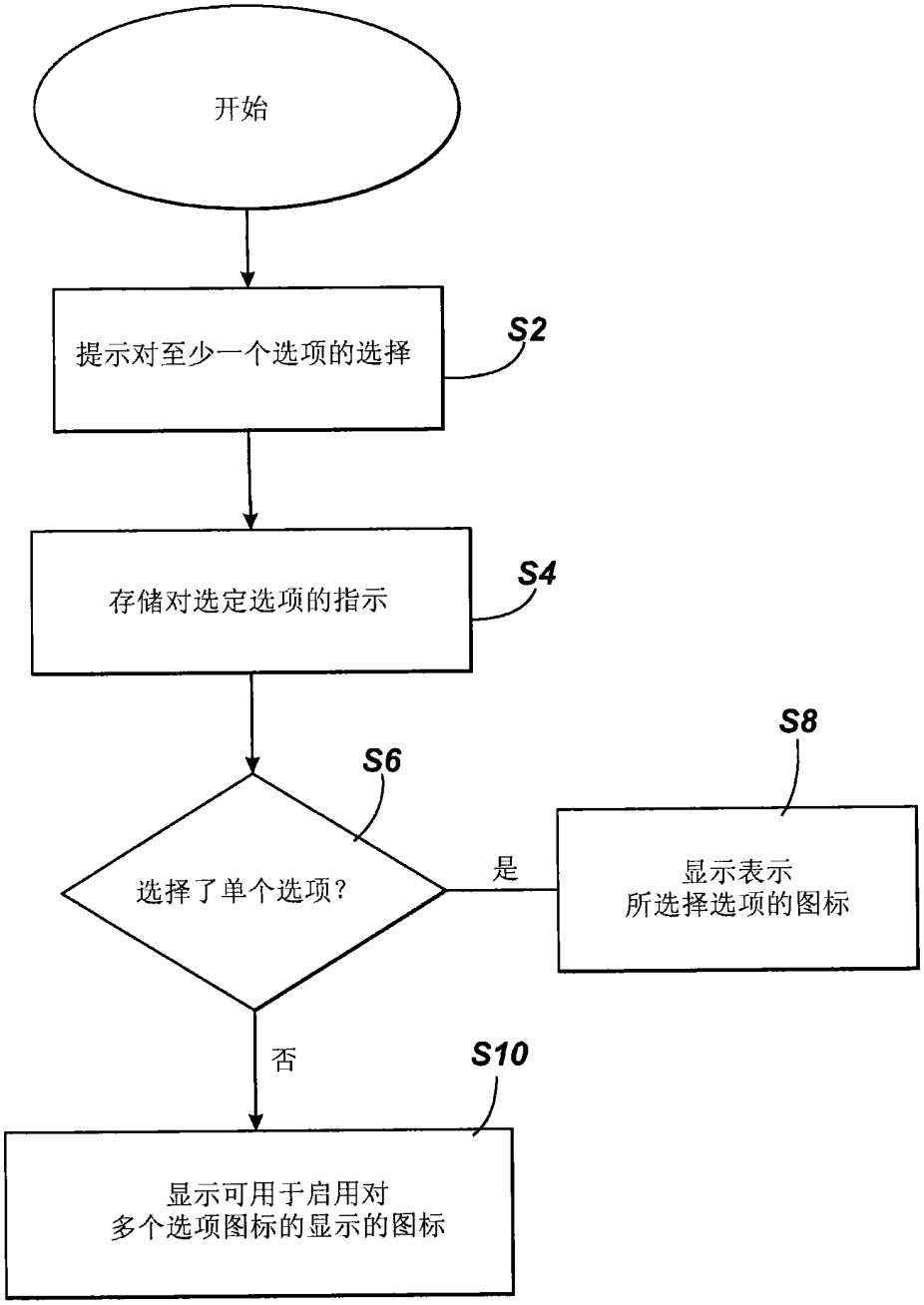

开始
提示对至少一个选项的选择
S2
存储对选定选项的指示
S4
S6
选择了单个选项？
是
S8
显示表示
所选择选项的图标
否
S10
显示可用于启用对
多个选项图标的显示的图标

图5

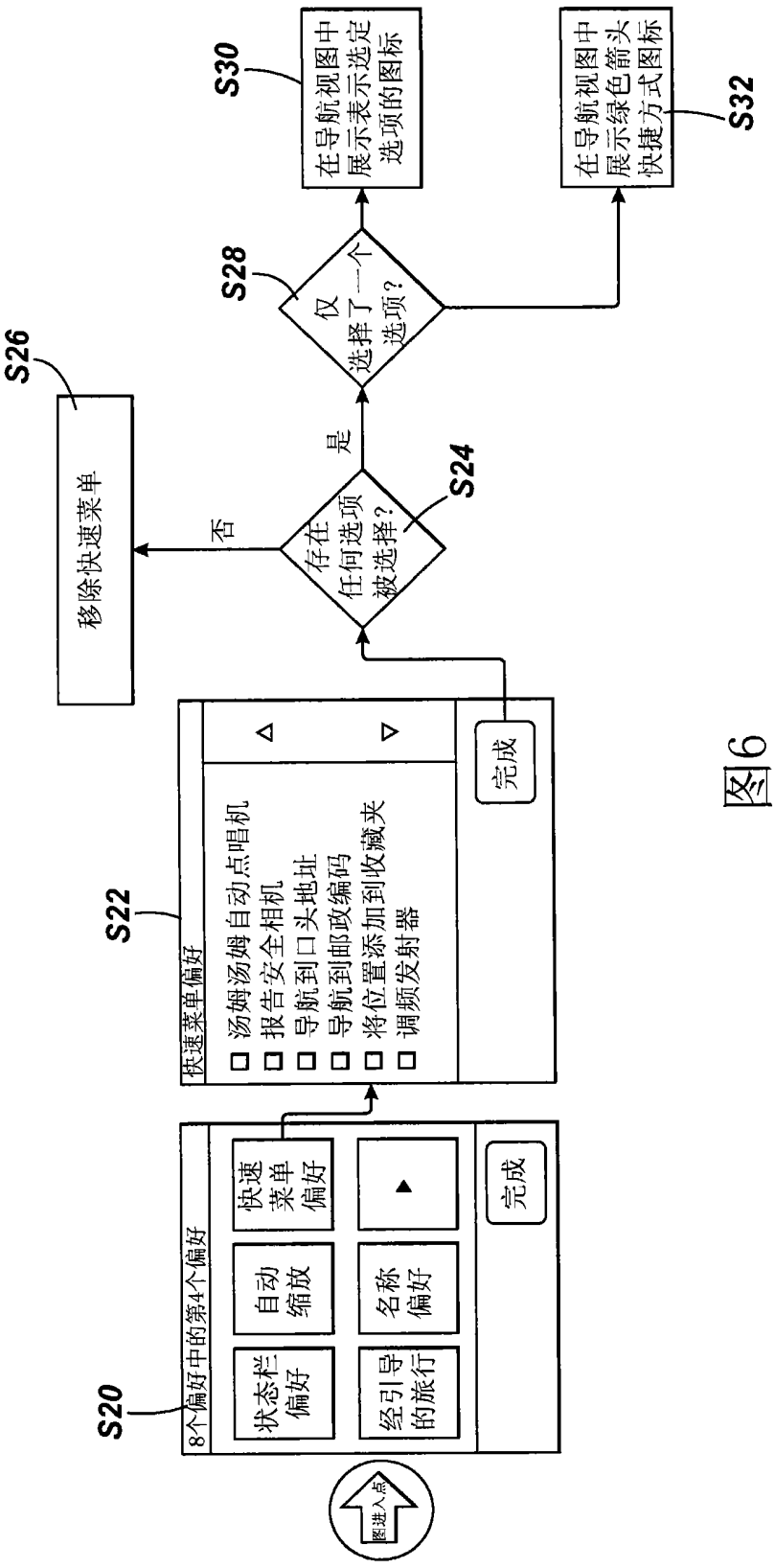

图进入点
8个偏好中的第4个偏好
状态栏偏好
自动缩放
快速菜单偏好
经引导的旅行
名称偏好
完成
S20
快速菜单偏好
汤姆汤姆自动点唱机
报告安全相机
导航到口头地址
导航到邮政编码
将位置添加到收藏夹
调频发射器
完成
S22
存在任何选项被选择?
S24
否
是
移除快速菜单
S26
仅选择了一个选项?
S28
在导航视图中展示表示选定选项的图标
S30
在导航视图中展示绿色箭头快捷方式图标
S32

图6

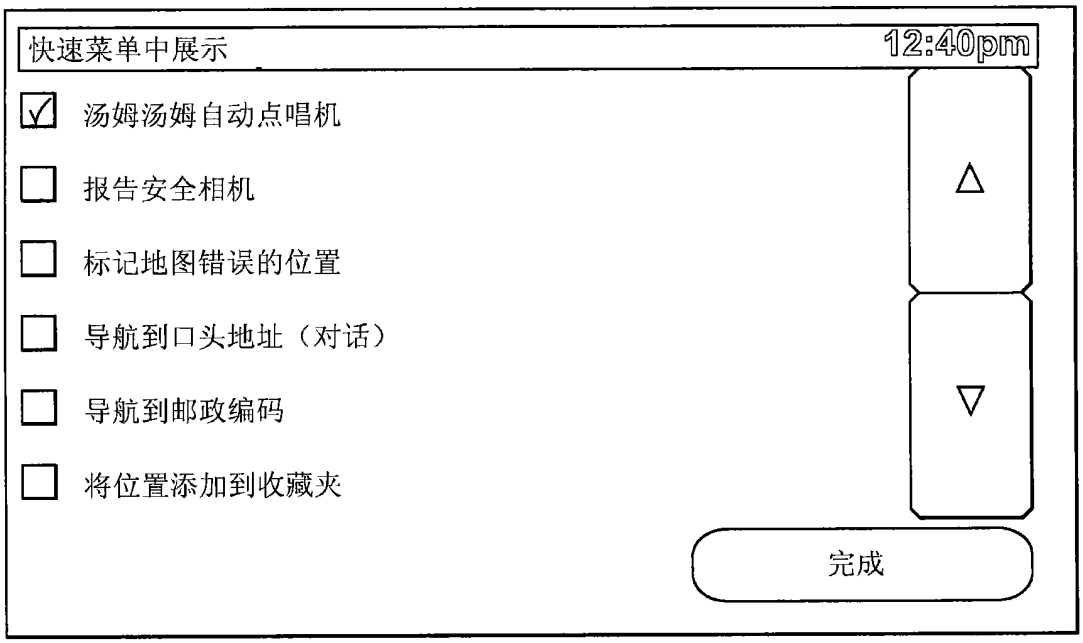

快速菜单中展示
12:40pm
汤姆汤姆自动点唱机
报告安全相机
标记地图错误的位置
导航到口头地址（对话）
导航到邮政编码
将位置添加到收藏夹
完成

图7A

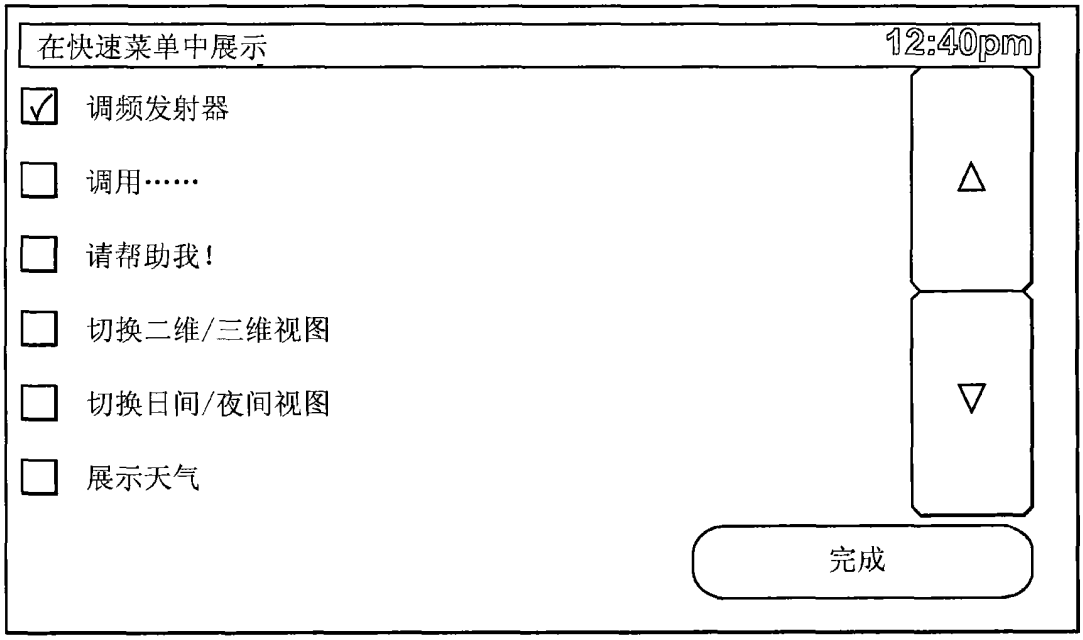


图7B

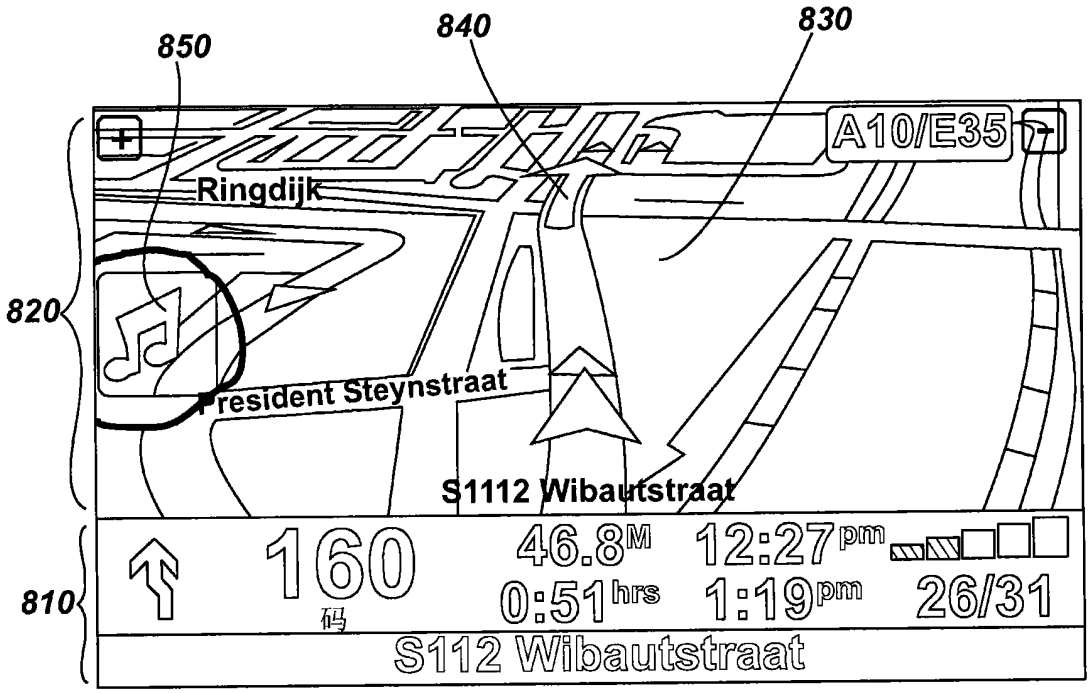

850
840
830
A10/E35
Ringdijk
820
President Steynstraat
S1112 Wibautstraat
160
码
46.8M
12:27pm
0:51hrs
1:19pm
26/31
810
S112 Wibautstraat

图8

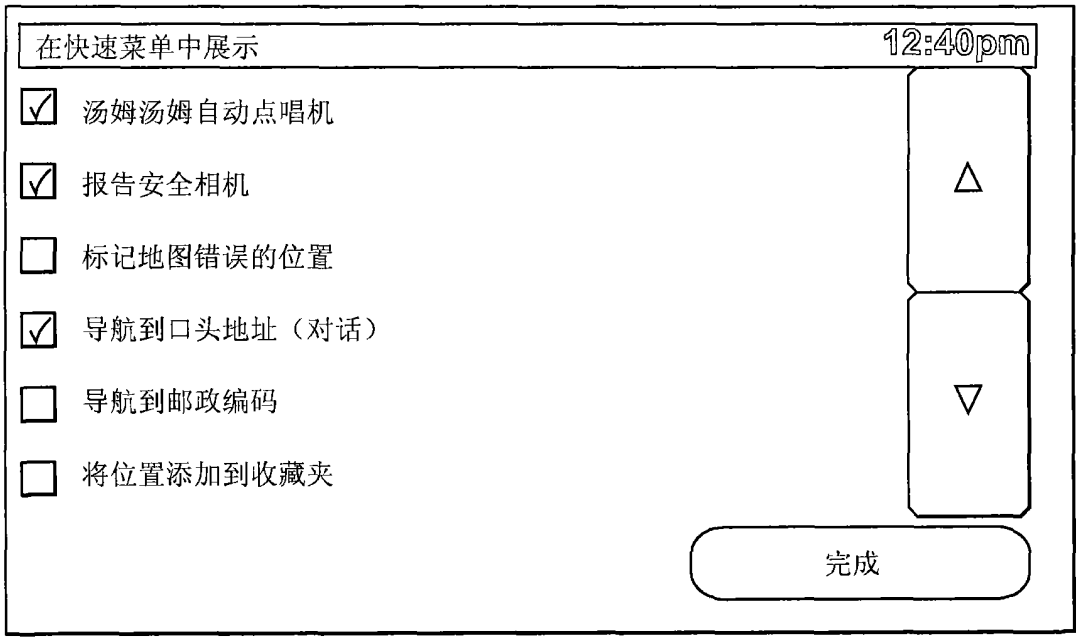

在快速菜单中展示
12:40pm
汤姆汤姆自动点唱机
报告安全相机
标记地图错误的位置
导航到口头地址（对话）
导航到邮政编码
将位置添加到收藏夹
完成

图9A

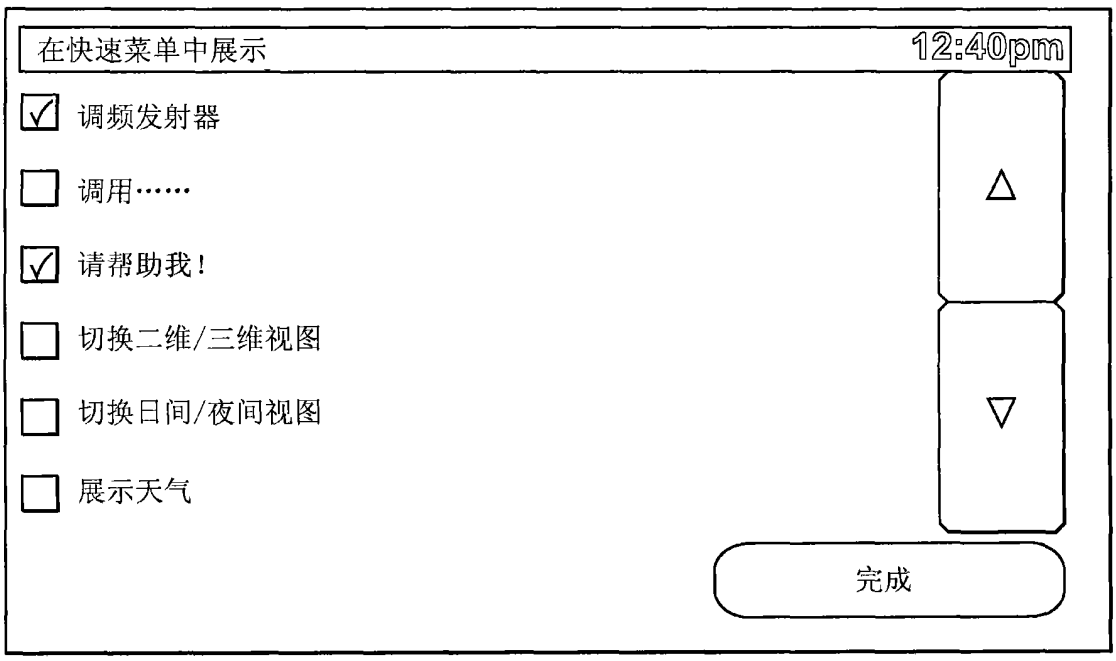


图9B

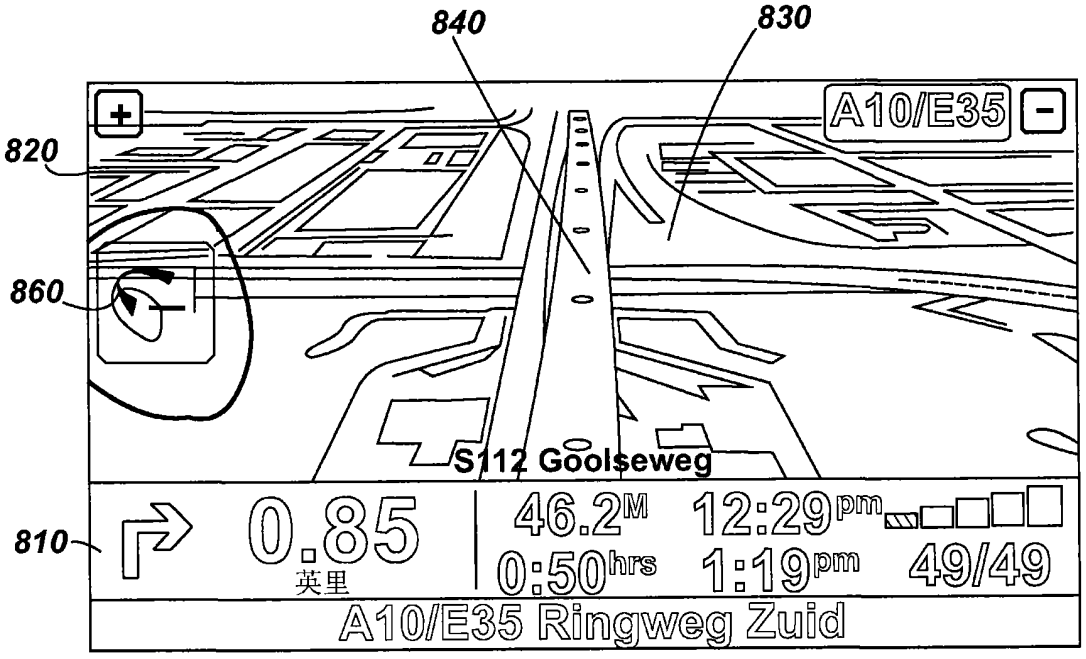

840
830
820
860
810
A10/E35
S112 Goolseweg
0.85
英里
46.2M
12:29pm
0:50hrs
1:19pm
49/49
A10/E35 Ringweg Zuid

图10

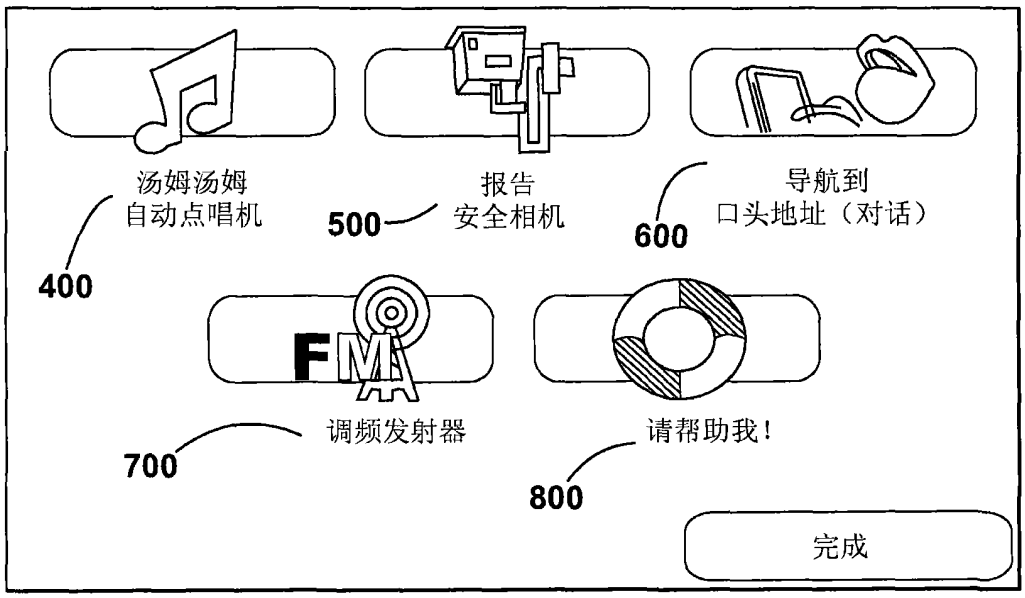

汤姆汤姆
自动点唱机
400
报告
安全相机
500
导航到
口头地址（对话）
600
FM
调频发射器
700
请帮助我！
800
完成

图11

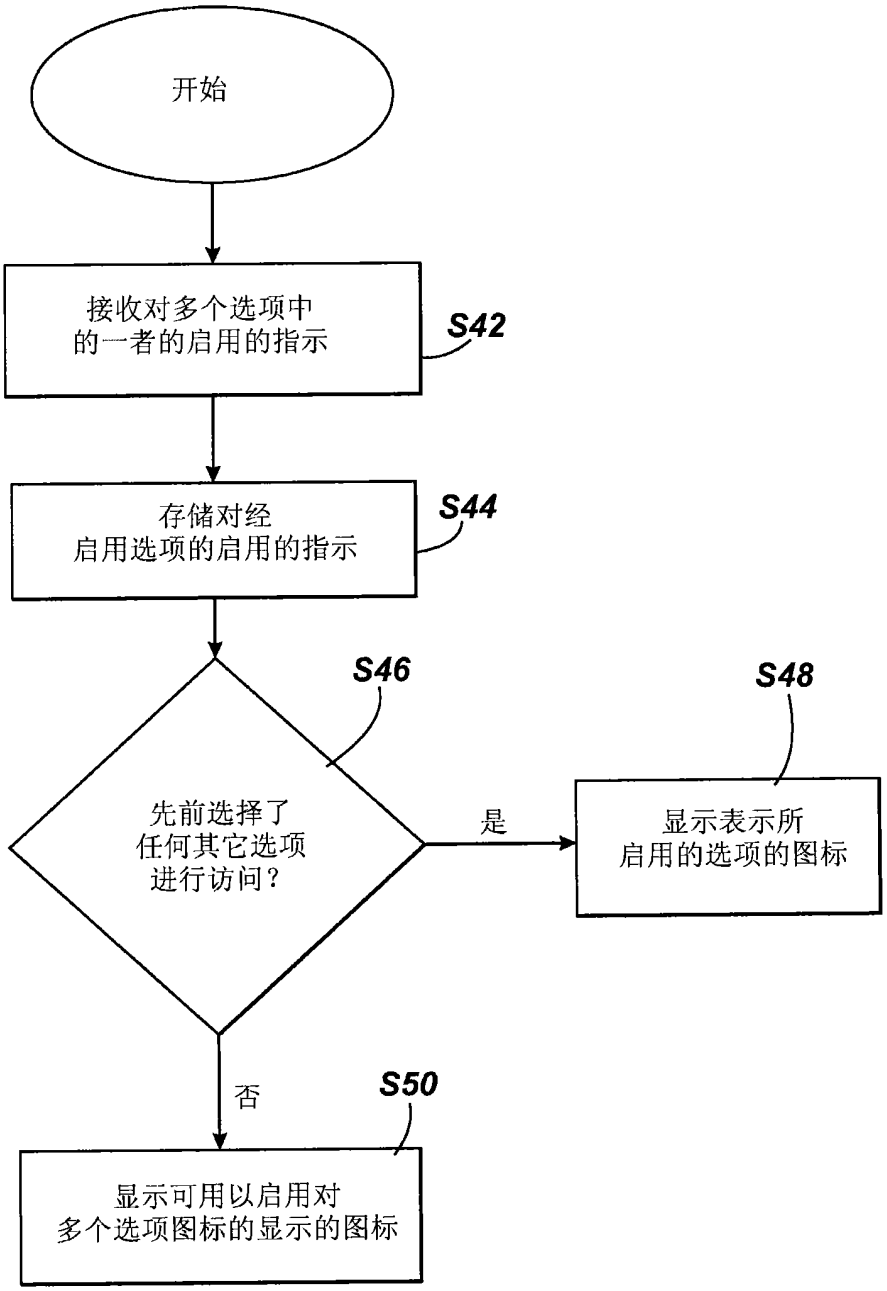

开始
接收对多个选项中
的一者的启用的指示
S42
存储对经
启用选项的启用的指示
S44
S46
先前选择了
任何其它选项
进行访问？
是
S48
显示表示所
启用的选项的图标
否
S50
显示可用以启用对
多个选项图标的显示的图标

图12

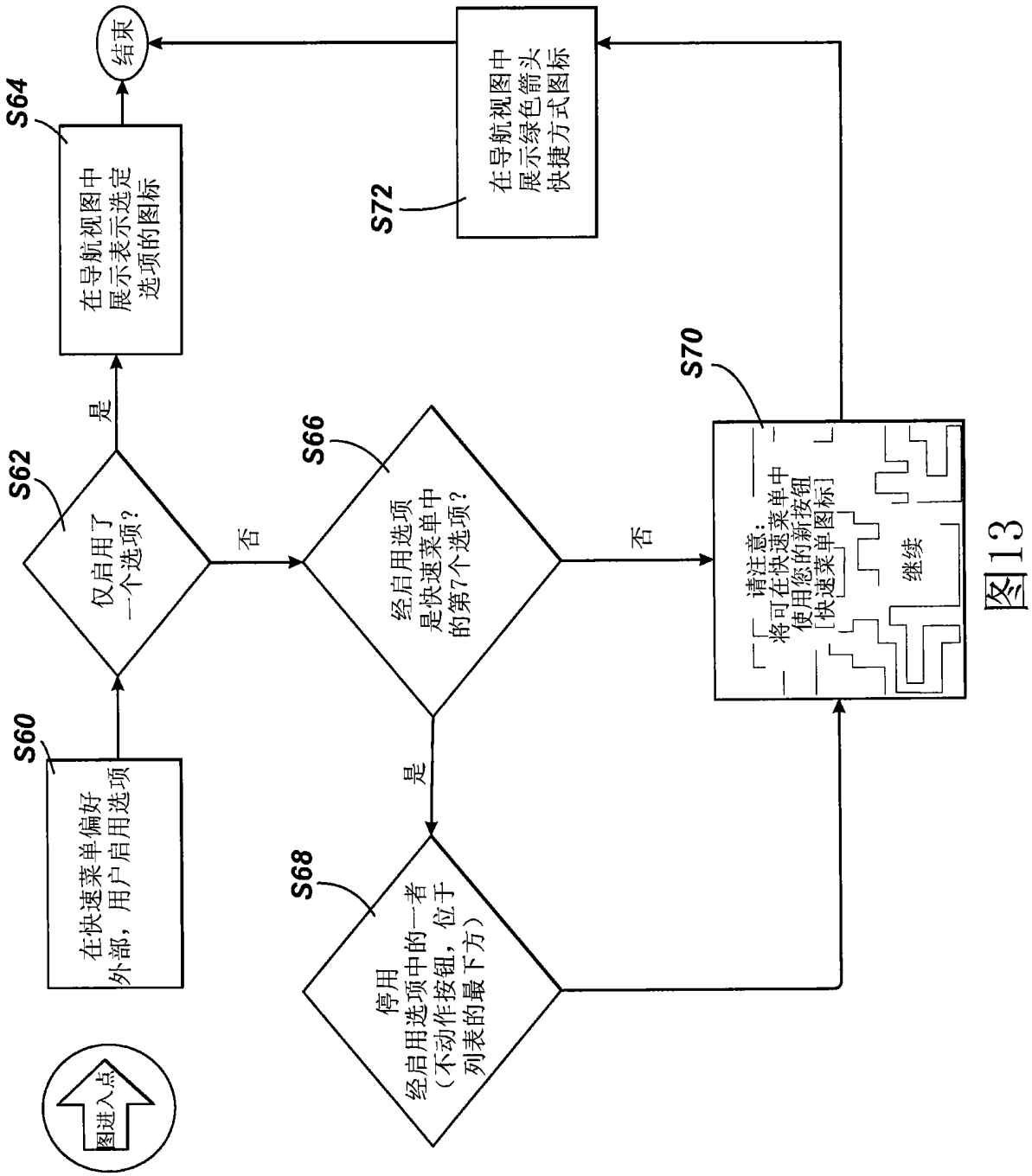

图进入点
S60
在快速菜单偏好外部，用户启用选项
S62
仅启用了一个选项？
是
否
S64
在导航视图中展示表示选定选项的图标
结束
S66
经启用选项是快速菜单中的第7个选项？
是
否
S68
停用经启用选项中的一者（不动作按钮，位于列表的最下方）
S70
请注意：将可在快速菜单中使用您的新按钮[快速菜单图标]
继续
S72
在导航视图中展示绿色箭头快捷方式图标

图13