

[0051] In addition, a topographical map, not shown in FIG. 6, can be presented in accordance with the present invention and be associated with vibrational characteristics. Piezoelectric actuators can vibrate at different frequencies and/or amplitudes to enable the user to distinguish features represented on the map (such as, roads, hills, intersections, traffic conditions, driving routes, etc.). In this manner, vibrational characteristics may enable the user to distinguish land from water, mountains from plains, and/or the boundaries of a road without looking at the map.

[0052] FIG. 7 shows a simplified block diagram of circuitry that can be implemented in an electronic device in accordance with some embodiments of the present invention. Electronic device 700 can include detection module 702, processor 704, display generation circuitry 706, user interface 708, tactile feedback circuitry 710, communications circuitry 712, memory 716, storage 718, and input/output circuitry 720. In some embodiments, electronic device 700 can include more than one of each component, but for the sake of simplicity, only one of each component is shown in FIG. 7. In addition, persons skilled in the art will appreciate that the functionality of certain components can be combined or omitted and that additional components, which are not shown or discussed in FIG. 7, can be included in a device that is in accordance with the present invention.

[0053] Processor 704 can include, for example, circuitry that can be configured to perform any function. Processor 704 may be used to run operating system applications (including those that implement an audible menu hierarchy), firmware, media playback applications, media editing applications, and/or any other application.

[0054] Storage 718 can be, for example, one or more storage mediums, including for example, a hard-drive, flash memory, permanent memory such as ROM, any other suitable type of storage component, or any combination thereof. Storage 718 may store, for example, media data (e.g., music and video data), application data (e.g., for implementing functions on device 700), menu data (used to, e.g., organize data into a menu hierarchy), firmware, user preference data (associated with, e.g., media playback preferences), lifestyle data (e.g., food preferences), exercise data (e.g., data obtained by exercise monitoring equipment), transactional data (associated with, e.g., information such as credit card information), wireless connection data (e.g., data that may enable electronic device 700 to establish a wireless connection), subscription data (e.g., data that keeps track of podcasts or television shows or other media a user subscribes to), contact data (e.g., telephone numbers and email addresses), calendar data, any other suitable data, or any combination thereof. Any or all of the data stored in storage 718 may be formatted in any manner and/or organized as files. Processor 704 can process the data stored on storage 718 into information that can be presented to the user (as, e.g., audible information).

[0055] Memory 716 can include, for example, cache memory, semi-permanent memory such as RAM, and/or one or more different types of memory used for temporarily storing data. Memory 716 can also be used for storing any type of data, such as operating system menu data, used to operate electronic device applications and enable the user to interact with electronic device 700.

[0056] Communications circuitry 714 can permit device 700 to communicate with one or more servers or other devices using any suitable communications protocol. For example, communications circuitry 714 may support Wi-Fi (e.g., a

802.11 protocol), Ethernet, Bluetooth™, high frequency systems (e.g., 900 MHz, 2.4 GHz, and 5.6 GHz communication systems), infrared, TCP/IP (e.g., any of the protocols used in each of the TCP/IP layers), HTTP, BitTorrent, FTP, RTP, RTSP, GSM, CDMA, SSH, any other type of communications, or any combination thereof.

[0057] Input/output circuitry 720 can be respectively coupled to and/or integrated into various input and output components. Examples of input components include microphones, multi-touch panels, proximity sensors, accelerometers, ambient light sensors, camera and any other component that can receive or detect a physical signal or phenomena. Examples of output components include speakers, visual display screens, vibration generators and any other component that can create a physical signal or phenomena. Input/output circuitry 720 can convert (and encode/decode, if necessary) physical signals and other phenomena (e.g., touch events, physical movements of electronic device 700, analog audio signals, etc.) into digital data. Input/output circuitry 720 can also convert digital data into any other type of signal or phenomena. The digital data can be provided to and/or received from processor 704, storage 718, memory 716, or any other component of electronic device 700.

[0058] Display generation circuitry 706 is a type of output circuitry that can be included or omitted from electronic device 700 without departing from the spirit of the present invention. Display generation circuitry 706 can accept and/or generate signals for visually presenting information (textual and/or graphical) to a user on a display screen. For example, display generation circuitry 706 can include a coder/decoder (CODEC) to convert digital data into displayable signals. Display generation circuitry 706 also can include display driver circuitry and/or circuitry for driving display driver(s). The display signals can be generated by, for example, processor 704 or display generation circuitry 706. The display signals can provide media information related to media data received from communications circuitry 714 and/or any other component of electronic device 700. In some embodiments, display generation circuitry 706, like any other component discussed herein, can be integrated into and/or external to electronic device 700. In some embodiments of the present invention, such as those that, for example, lack a functional display component, navigational information and any other information may be audibly presented to the user by electronic device 700.

[0059] User interface 708 is a type of input circuitry. User interface 708 can accept input(s) from a user and/or generate signals indicating the location or locations of user input, type of user input, direction of user input, etc. For example, user interface 708 can include, for example, a touchpad on a laptop computer, or a click wheel or a touchscreen, such as incorporated into handheld media players, such as Apple Inc.'s iPod™ and iPhone™. (Apple Inc. owns the iPod™ and iPhone™ trademark.) User interface 708 can include circuitry for generating an input signal when it detects user input. In some embodiments, user interface 708, like any other component discussed herein, can be integrated into and/or external to electronic device 700.

[0060] Tactile feedback circuitry 710 can selectively activate one or more transparent piezoelectric actuators in response to signals from processor 704. In some embodiments, tactile feedback circuitry 710 can be integrated with display generation circuitry 706, both of which may or may not be integrated into the touchscreen, if one is included in