

## USER INTERFACE FOR SELECTING A PHOTO TAG

### FIELD OF THE INVENTION

[0001] The present invention relates generally to a user interface for selecting a photo tag.

### BACKGROUND

[0002] Identifying people or objects in photographs is popular in many online contexts, such as photo sharing, social networking, etc. Selecting a “tag” to associate with an identified point in a photograph can be a complicated task if there are many potential tags to choose from. In addition, wireless mobile communication device where there are constraints on the size of the display and the flexibility of the input method, some of these common techniques used on desktops and laptops with full sized screens do not work as well.

[0003] What is needed is an improved user interface for selecting tags in a smaller display, such as may be found on a wireless mobile communication device.

### BRIEF DESCRIPTION OF THE DRAWINGS

[0004] In the figures which illustrate exemplary embodiments:

FIG. 1 is an illustration of a device in accordance with an embodiment;

FIG. 2 is a schematic block diagram of a communication subsystem component in the device of FIG. 1;

FIGS. 3A to 3E are illustrative user interface screens for editing photo tags in accordance with an embodiment;

FIGS. 4A to 4F are illustrative user interface screens for selecting a photo tag in accordance with an embodiment;

FIG. 5 is an illustrative flowchart of a method for editing photo tags in accordance with an embodiment; and

FIG. 6 is an illustrative flowchart of a method for selecting a photo tag in accordance with an embodiment.

## DETAILED DESCRIPTION

**[0005]** As noted above, the present invention relates to a user interface for selecting a photo tag, particularly within a smaller display, such as may be found on a wireless mobile communication device.

**[0006]** In an illustrative embodiment, the invention may be practiced with a handheld mobile communication device in a wireless operating environment. Shown in FIG. 1 is a schematic block diagram of an illustrative handheld mobile communication device 100. The communication device 100 may comprise a number of components, including a main processor 102 which controls the overall operation of communication device 100. Communication functions, including data and voice communications, may be performed through a communication subsystem 104. The communication subsystem 104 may receive messages from and send messages to a wireless network 200.

**[0007]** The main processor 102 may also interact with additional subsystems such as a random access memory (RAM) 106, a flash memory 108, a display 110, an auxiliary input/output (I/O) subsystem 112, a data port 114, a keyboard 116, a trackball 117, a speaker 118, a microphone 120, short-range communications 122, a GPS subsystem 124, a camera module 126, and associated camera logic 128.

**[0008]** Some of the subsystems of the communication device 100 may perform communication-related functions, whereas other subsystems may provide “resident” or on-device functions. By way of example, the display 110 and the keyboard 116 may be used for both communication-related functions, such as entering a text message for transmission over the network 200, and device-resident functions such as a calculator or task list. The trackball 117 may be used for various navigation functions, such as navigating through a graphical user interface (GUI) menu displayed on display 110. The trackball 117 may also be configured with a secondary actuation feature, such as allowing a user to depress the trackball, to allow selection of a highlighted item.

**[0009]** The camera module 126 may be adapted to capture an image through a lens onto a light sensitive image sensor such as a charge coupled device (CCD) sensor array or a complementary metal oxide semiconductor (CMOS) sensor array. The camera lens may be a fixed focus lens, or a variable focus lens with or without zoom features and controlled by camera logic 128 to focus an image onto the CCD or CMOS sensor array.

The size and pixel density of the CCD or CMOS sensor array may be suitably selected for the image resolution required for a particular application. Camera logic 128 may also control the camera lens aperture and/or shutter speed by incorporating a suitable light exposure meter. Image capture using camera module 126 may be initiated by a user controlling a dedicated camera shutter, or a context dependent programmable button or key (on keyboard 116, for example) that may act as a camera shutter button.

**[0010]** Once captured by the CCD or CMOS sensor array, the image may then be processed by camera logic 128 into a suitable digital image file format such as Joint Photographic Experts Group (JPEG), Tagged-Image File Format (TIFF), Bit Mapping (BMP), different variations on these standard image file formats, or a vendor proprietary RAW image format. The image file format may allow for the addition of image meta-data to an image file in an industry standards exchangeable image file format (EXIF), or in some vendor proprietary meta-data format. The image file may then be stored in available device storage such as RAM 106 or flash memory 108, and displayed on display 110.

**[0011]** Still referring to FIG. 1, operating system software used by the main processor 102 is typically stored in a persistent store such as flash memory 108. Those skilled in the art will appreciate that the operating system, specific device applications, or parts thereof, may be temporarily loaded into a volatile store, such as the RAM 106, for processing by main processor 102.

**[0012]** The communication device 100 may send and receive communication signals over the wireless network 200 after required network registration or activation procedures have been completed. Network access may be associated with a subscriber or user of the communication device 100.

**[0013]** The communication device 100 may be a battery-powered device and may include a battery interface 132 for receiving one or more rechargeable batteries 130. In some embodiments, the battery 130 may be a smart battery with an embedded microprocessor. The battery interface 132 is coupled to a regulator (not shown), which assists the battery 130 in providing power  $V+$  to the communication device 100. The battery 130 may be used to power all components and modules in the communication device 100, including the camera module 126 and associated camera logic 128.

**[0014]** The main processor 102, in addition to its operating system functions, enables execution of various software applications 134 on the communication device 100. A subset of software applications 134 that control basic device operations, including data and voice communication applications, will normally be installed on the communication device 100 during its manufacture.

**[0015]** The software applications 134 may include a messaging application 136. The messaging application 136 can be any suitable software program that allows a subscriber or user of the communication device 100 to send and receive wireless text communications. Various alternatives exist for the messaging application 136 as is well known to those skilled in the art. Messages that have been sent or received by the user are typically stored in local storage such as flash memory 108 of the communication device 100, or in some other suitable storage element in the communication device 100. In an alternative embodiment, some of the sent and received messages may be stored remotely from the communication device 100 such as in a data store of an associated host system that the communication device 100 communicates with. In an embodiment, the messaging application 136 may include a Message List user interface that is configured to allow a user to see a list of message objects (i.e. email messages) in a convenient list form. This will be described in detail further below.

**[0016]** Still referring to FIG. 1, communication device 100 may execute an Image Applications Module 148 that may be operatively integrated with camera module 126, camera logic 128, main processor 102, RAM 106, display 110 and various other modules and components to provide various image application functions for the images captured by the camera module 126. Image Applications Module 148 may include various sub modules which may interact with each other, and with other application modules such as the messaging application 136, Internet browser module 138, address book module 142, etc. in order to perform various functions.

**[0017]** In an embodiment, one of the sub modules of the Image Applications Module 148 may be a photo tagging module 148A configured to allow a user to identify various subjects and objects within a photo. Photo tagging module 148A will be discussed in more detail further below.

**[0018]** In an embodiment, another of the sub modules of the Image Applications Module 148 may be a photo tagging module 148A configured to allow a user to select a photo tag

from a list of tags associated with various subjects and objects within a photo. Photo tag selection module 148B will be discussed in more detail further below.

**[0019]** The communication device 100 may further include a device state module 140, an address book 142, a Personal Information Manager (PIM) 144, and various other modules 150. Additional software applications may also be loaded onto the communication device 100 through at least one of the wireless network 200, the auxiliary I/O subsystem 112, the data port 114, the short-range communications subsystem 122, or other device subsystem 124.

**[0020]** Now referring to FIG. 2, shown is an illustrative front view of a handheld mobile communication device 100 that may provide a suitable operating environment. As shown, the communication device 100 may include a display 110, a keyboard 116, and other input or navigation means such as a trackball 117. The display 110 may be configured to display various screens allowing the user of device 100 to view screen outputs from the various software applications 134, including the image applications 148. Display 110 may also be configured to provide a touch-sensitive screen input in response to a prompt or query displayed on display 110. The communication device 100 may further include a camera lens that may be used to capture an image as described above with reference to FIG. 1. In an embodiment, the integrated camera 126 may provide a camera lens 127 on the back of the communication device 100, such that a user may use the display 110 as a camera viewfinder for framing an image.

**[0021]** Now referring to FIG. 3A, shown is an illustrative user interface screen 300A in which photo tagging module 148A may be configured for tagging a photograph in accordance with an embodiment. As shown, a photo 301 of a subject 302 is displayed within the boundaries of the user interface. With this user interface, a tag list 304 may include various tags associated subject 302 or other subjects or objects within the photo 301. The user may click an “Add” button 306 in order to enter a photo tagging mode as described below.

**[0022]** Now referring to FIG. 3B, as shown in screen 300B, once in the photo tagging mode, the photo tagging module 148A may be configured to display to the user a pointer, such as cross-hair pointer 308 on the photo 301. The user may move the cross-hair pointer 308 around the photo 301, but unlike common web browser interfaces, the cross-hair pointer 308 may be constrained by the photo tagging module 148A to be navigable

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