

email window **402** contains four email messages—one from Lance, Melissa, Grace, and Max. The user has selected, by touching the touch screen with stylus **102**, the email message from Lance. This action is detected by the PDA which then generates a command to display the email message that has been selected by the user. Consider now **FIG. 5**. There, the **FIG. 4** PDA is shown with the same email window **402** displayed for the user. In this instance, however, the user has provided a combination of user-input activities. Specifically, the user has touched an email message (i.e. the one from Lance) and, at the same time, has depressed the leftmost of buttons **404** (as indicated by the shading of the leftmost button). In this particular example, this specific combination of user-input activities is mapped to a “delete” command. Accordingly, the PDA detects the combination of user-input activities (as in step **302**), generates an input command associated with the detected combination (as in step **304**), and performs the generated input command (as in step **306**).

[0035] Another embodiment provides for common areas of the same display window that is displayed on a PDA’s touch screen to be mapped to different input commands. The PDA determines which input commands to select based on which area has been selected or touched by the stylus, as well as which (if any) button or buttons have been depressed by the user. Execution of multiple input commands can take place, for a given touch screen area, in a scroll-independent manner. Specifically, a user can access multiple input commands for a given touch screen area without having to physically scroll down through various additional menus.

[0036] As an example, consider again **FIGS. 4 and 5**. The common area of the display window, in this example, is the area in which the email from Lance appears. In the **FIG. 4** case, the input command that is selected by the PDA is a “read” command which permits the user to read the email message. The “read” command is associated with the single user-input activity of engaging the touch screen area with the stylus. In the **FIG. 5** case, however, the very same touch screen area for the display window is mapped to a different input command based upon the fact that the user has both selected or touched the area with the stylus and depressed the leftmost button.

[0037] In the above example, the PDA is configured for mapping multiple user-input activities to different commands using buttons that are currently in place and which have other functionalities. Specifically, buttons **404** in **FIGS. 4 and 5** can have what can be considered typical functionalities that are normally associated with PDAs (i.e. selection, scrolling, and the like). When used in conjunction with the stylus, however, these buttons can take on a different character. Specifically, these buttons can now be imparted with extended functionalities which, together with the stylus, provide a user with an opportunity to be exposed to a much more robust collection of input commands for a given PDA screen display.

First Exemplary Embodiment

[0038] **FIG. 6** shows a PDA **600** in accordance with one embodiment. Reference numerals from the **FIG. 1** PDA have been used except that they have been changed to the “600” series. For the sake of brevity, duplicative aspects of the **FIG. 6** PDA are not described.

[0039] In this embodiment, PDA **600** is configured with specially-dedicated user-engagable structures that can be

used in connection with the stylus **602**, to provide the enhanced functionalities described above. Specifically, in this example, the user-engagable structures comprise buttons that can be depressed by the user. Exemplary buttons are shown at **612, 614, 616, 618** (on the left side of the PDA), and **620, 622, 624, and 626** (on the right side of the PDA). Buttons need not be provided on each side of the PDA. Specifically, a right-handed configuration can provide buttons only on the left side of the PDA (i.e. buttons **612-618**), while a left-handed configuration can provide buttons only on the right side of the PDA (i.e. buttons **620-626**).

[0040] Hence, in this example, buttons **612-626** can be incorporated into a table, such as table **200** (**FIG. 2**) so that mappings can be defined for the various combinations of user-input activities that can exist.

Second Exemplary Embodiment

[0041] In the embodiment discussed above, the user-engagable structures (e.g. the buttons) that enable a user to provide the different combinations of user-input activities are positioned on the housing of the PDA. In one instance, the buttons are the typical buttons that normally appear on the PDA except that they now have multi-function capabilities. In another instance, the buttons are special purpose buttons that are specifically provided for imparting the described characteristics to the PDA.

[0042] In the embodiments described below, the user engagable structures that enable a user to provide the different combinations of user-input activities are positioned on the stylus itself. This permits and promotes one-handed operation so that a user, by using only the hand that grips the stylus, can navigate through the different combinations of user-input activities.

[0043] Consider, for example, **FIG. 7** which shows a PDA **700** in accordance with one embodiment. Reference numerals from the **FIG. 1** PDA have been used except that they have been changed to the “700” series. For the sake of brevity, duplicative aspects of the **FIG. 7** PDA are not described.

[0044] Notice that stylus **702** comprises multiple user-engagable structures positioned near the tip. In this example, the user-engagable structures comprise buttons **712, 714, and 716**. The buttons **712-716** function in much the same way as the buttons described above when used in connection with the stylus engaging the PDA’s touch screen **708**. This function was discussed in some detail in connection with **FIG. 2** and, for the sake of brevity, is not repeated here.

[0045] Although the user-engagable structures on the stylus function in much the same way as described above, in this embodiment, the stylus is configured in a manner which enables it to articulate to the PDA **700** that the user has engaged one or more of the buttons on the stylus. This way, the PDA’s processor can take the necessary actions to map the user-input activities to the proper input commands and execute those commands.

[0046] Consider, for example, **FIG. 8** which shows but one way that the articulation process can take place. There, a cross-sectional view of a portion of stylus **702** is shown. Button **712** is spring biased by a spring (not specifically designated) that permits the button to be reciprocated in the