

vertical direction as viewed in the figure. An electrical contact **800** is disposed on the underside of the button. A pair of electrical contacts **802, 804** are supported on the inside of the stylus housing. When button **712** is pressed by a user, the button moves downward sufficient to bring contact **800** into engagement with contacts **802, 804**, thus completing a circuit. When the circuit is complete, a signal can be transmitted to the PDA to inform the PDA that a particular button has been depressed. Each button can correspond to a different signal so that the PDA knows which button on the stylus has been depressed.

[0047] As an example, consider **FIG. 9** which shows stylus **702** and PDA **700**. Stylus **702** comprises a transmitter **900** which can be any suitable transmitter that is capable of transmitting a signal that can be received by PDA **700**. Examples of suitable transmitters can include, without limitation, bluetooth transmitters, radio frequency (RF) transmitters, light transmitters, infrared (IR) transmitters and the like. As shown, each button on the stylus is represented as a switch. When the switch is closed (corresponding to a user depressing an associated button), a circuit is formed which permits the transmitter **900** to produce a signal which is then transmitted to the PDA **700**. As noted above, each button can be associated with a different signal so that the PDA knows which button has been depressed.

[0048] PDA **700** comprises, in this example, a receiver **902** which can be any suitable receiver that is capable of receiving a signal generated and transmitted by transmitter **900**. Examples of suitable receivers can include, without limitation, bluetooth receivers, radio frequency (RF) receivers, light receivers, infrared (IR) receivers and the like. PDA **700** also includes a processor **904** and storage **906**. Storage **906** contains software instructions that are executed on processor **904** for generating and performing input commands that correspond to the user-input activities that are provided by the user.

[0049] **FIG. 10** is a flow diagram that describes steps in a method in accordance with one embodiment. The method can be implemented in any suitable hardware, software, firmware, or combination thereof. In the illustrated example, the method is implemented by a suitably programmed PDA such as PDA **700** in **FIG. 9**.

[0050] Step **1000** starts the method and step **1002** determines whether a stylus has engaged the touch screen. This step can be performed using techniques that are well known in the PDA art. If the stylus has not engaged the touch screen, the method loops back to step **1002** and waits until the stylus has engaged the touch screen. If the stylus has engaged the touch screen, step **1004** determines whether one or more buttons on the stylus have been depressed by the user. This step can be implemented in any suitable way. Examples of how this can be done are described in connection with **FIGS. 8 and 9** above. If a button has not been depressed by the user, step **1006** executes a first command. This step is implemented by the PDA's processor. If, on the other hand, a button is depressed on the stylus, step **1008** executes a second command which is different from the first command.

[0051] It is to be appreciated and understood that steps **1002** and **1004** need not be performed in the illustrated order. Specifically, the method could first detect that a button

on the stylus has been depressed, and then wait for the stylus to engage the touch screen in order to execute the second command.

[0052] It is to be appreciated and understood that the above-described stylus can transmit a signal to the PDA using any suitable transmission medium. For example, the stylus can include a wire that is connected between it and the PDA. Accordingly, the signal can then be transmitted via the wire. In addition, the signal can be transmitted to the PDA in the way that the stylus physically engages the touch screen. Specifically, the stylus can be specially configured to engage the touch screen in a first way when a button is not depressed. This first way can involve fitting the stylus with a first type of tip. When a button is depressed, the tip configuration of the stylus can be changed to a second type of tip that physically engages the touch screen in a different, yet perceptible manner.

Conclusion

[0053] The embodiments described above can greatly enhance the input fidelity of personal digital assistants (PDAs) and other handheld, stylus-engagable computing devices. In some embodiments, this can be done by associating input commands with different user-input activities, including different combinations of user-input activities. By using different combinations of user-input activities to designate particular input commands, a more robust collection of commands can be provided to a user in a manner that is simple, straight-forward and easy to understand.

[0054] Although the invention has been described in language specific to structural features and/or methodological steps, it is to be understood that the invention defined in the appended claims is not necessarily limited to the specific features or steps described. Rather, the specific features and steps are disclosed as preferred forms of implementing the claimed invention.

We claim:

1. A method of operating a stylus-engagable, hand-held computing device, the method comprising:

associating one or more input commands for use with a stylus-engagable, hand-held computing device, with a combination of user-input activities, the computing device comprising a touch screen that is engagable with a stylus;

transmitting a signal from the stylus to the hand-held computing device, said transmitting comprising a first type of user-input activity;

detecting, in combination with said first type of user-input activity, at least one other type of user-input activity;

generating an input command that is associated with the detected combination of user-input activities; and

performing the generated command.

2. The method of claim 1, wherein said transmitting is performed responsive to a user engaging a button on the stylus.

3. The method of claim 1, wherein said transmitting is performed responsive to a user engaging multiple buttons on the stylus.