same time. For example, actuator **118** may output a vibration configured to cause the surface of display **116** to comprise the texture of sand, and, actuator **118** may also be configured to output additional vibrations, configured to cause the user to feel the texture of rocks in the sand.

[0049] In some embodiments, not shown in FIG. **1**, messaging device **102** may comprise multiple actuators. In an embodiment comprising two or more actuators, each actuator may output different haptic effects at the same time, thus increasing the richness of available haptic effects. For example, each actuator may output a different frequency or type of haptic effect, which is configured to simulate a different texture. In some embodiments, the user may feel these textures at the same time, but at different locations, on the messaging device **102**. For example, in one embodiment, a first actuator may output a first haptic effect configured to simulate a texture on a first icon, while at the same time, a second actuator may output a second haptic effect configured to simulate a second texture on a second icon. In such an embodiment, the user may feel the first texture on the first icon and, at the same time, feel the second texture on the second icon. In other embodiments, both actuators may be configured to output separate haptic effects that, when combined, are configured to simulate a single texture. Further, in some embodiments, not shown in FIG. **1**, messaging device **102** may comprise multiple displays. In some embodiments, each display may be associated with more than one actuator. In such an embodiment, the user may interact with one of the displays, and feel a corresponding haptic effect on the other display.

[0050] Processor **110** may determine a haptic effect for many reasons. For example, in some embodiments, processor **110** may output a haptic effect that corresponds to the texture of an object shown on display **116**. In such an embodiment, the display may show multiple objects, and the processor may determine a different haptic effect as the user moves his/her finger from object to object, thus simulating a different texture for each object. In some embodiments, the haptic effect may act as a confirmation that processor **110** has received a signal associated with user interaction. For example, in one embodiment, the graphical user interface may comprise a button and touch-sensitive interface **114** may detect user interaction associated with pressing the button. When touch-sensitive interface **114** transmits an interface signal associated with the user interaction to processor **110**, processor **110** may determine a haptic effect to confirm receipt of the interface signal. In such an embodiment, the haptic effect may cause the user to feel a texture on the surface of touch-sensitive interface **114**. For example, the processor may output a haptic effect that simulates the texture of sand to confirm that processor **110** has received the user input. In other embodiments, the processor may determine a different texture, for example, the texture of water, ice, oil, rocks, or skin. In some embodiments, the haptic effect may serve a different purpose, for example, alerting the user of boundaries on display **116**, or providing the user with haptic information about the image on display **116**. For example, in some embodiments, each icon on display **116** may comprise a different texture and when the user moves their finger from one icon to another, the processor will determine a haptic effect that simulates the texture of each icon. In further embodiments, the processor may change the texture when the user's finger moves from contact with an icon to contact with the background of the display, thus alerting the user that he/she is no longer touching the icon.

[0051] As shown in FIG. **1**, processor **110** is also in communication with speaker **120**. Speaker **120** is configured to receive audio signals from processor **110** and output them to the user. In some embodiments, the audio signals may be associated with the haptic effect output by actuator **118**, or the image output by display **116**. In other embodiments, the audio signal may not correspond to the haptic effect or the image.

[0052] In some embodiments, not shown in FIG. **1**, processor **110** may further comprise one or more sensors, for example, a GPS sensor, an imaging sensor, accelerometer, location sensor, rotary velocity sensor, light sensor, camera, microphone, or some other type of sensor. The sensor may be configured to detect changes in acceleration, inclination, inertia, or location. For example, messaging device **102** may comprise an accelerometer configured to measure the messaging device's acceleration. The sensor is configured to transmit sensor signals to processor **110**.

[0053] The sensor signals may comprise one or more parameters associated with a position, a movement, an acceleration, or a "jerk" (i.e. the derivative of acceleration) of the messaging device **102**. For example, in one embodiment, the sensor may generate and transmit a sensor signal comprising a plurality of parameters, each parameter associated with a movement along or about one measured translational or rotational axis. In some embodiments, the sensor outputs voltages or currents that processor **110** is programmed to interpret to indicate movement along one or more axes.

[0054] In some embodiments, processor **110** will receive the sensor signal and determine that it should activate the virtual workspace and interpret sensed movement of the messaging device **102** in an X, Y, or Z direction as corresponding to a virtual movement "within" the virtual workspace. The user may then move device **102** within the virtual workspace to select functions or files, by gesturing within the virtual space. For example, by moving the messaging device **102** in the Z-Axis overtop of a function within the virtual workspace. In some embodiments, the user may use gestures within the virtual workspace to modify the haptic effects output by messaging device **102**.

[0055] FIG. **2** is an illustration of a system for using textures in graphical user interface widgets according to one embodiment of the present invention. FIG. **2** comprises a messaging device **200**, such as a mobile phone, PDA, portable media player, portable gaming device, or mobile computer. The messaging device **200** is configured to send and receive signals, such as voicemail, text messages, and other data messages, over a network such as a cellular network or the Internet. The messaging device **200** may comprise a wireless network interface and/or a wired network interface (not shown in FIG. **2**). Although the device **200** is illustrated as a handheld messaging device in FIG. **2**, other embodiments may comprise different devices, such as video game systems and/or personal computers.

[0056] As shown in FIG. **2**, the messaging device **200** comprises a housing **202** and a display **216**. In some embodiments, display **216** may comprise an LCD display. In other embodiments, display **216** may comprise a plasma display, or other type of display known in the art. Display **216** is configured to receive a display signal and output an image associated with that display signal. In some embodiments, the display signal may comprise a vga, hdmi, svga, video, s-video,