[0018] The user interface system **100** functions to deform the second region **122** of the tactile layer **120** to provide the user with tactile guidance when operating a device to which the user interface is coupled. The user interface system **100** is substantially similar to the user interface system described in U.S. patent application Ser. No. 12/319,334 titled "User Interface System" and/or U.S. patent application Ser. No. 12/497,622 titled "User Interface System," which are incorporated in their entirety by this reference. The user interface system **100** preferably cooperates with a visual guide (e.g., an image output by the digital display **190** and transmitted though the tactile surface **124**) to provide a message, a choice, or any other suitable type of communication to the user, but may alternatively operate independently of a visual guide. The user interface system **100** preferably provides tactile guidance that is substantially adapted to a use of the device. The user interface system **100** may deform additional regions of the tactile layer **120**, independently and/or concurrently with the second region **122**, to provide further adaptability to the use of the device. FIGS. **7**B and **7**C depict a second region **122** and a third region **123** that are independently deformed. The user interface system **100** is preferably applied over an image that is static (e.g., a label) or dynamic (e.g., from the digital display **190**); the user interface is preferably substantially transparent to permit transmission of the image through the user interface system **100**. However, any other suitable optical property of the user interface system **100** may suffice. As shown in FIG. **8**, the user interface system **100** of the preferred embodiment may be incorporated into an electronic device that includes a digital display, such as a vehicle console, a desktop computer, a laptop computer, a tablet computer, a television, a radio, a desk phone, a mobile phone, a smartphone, a PDA, a personal navigation device, a personal media player, a camera, or a watch. The user interface system **100** of the preferred embodiment may also be incorporated into an electronic device without a digital display, for example, onto a steering wheel of a vehicle, a remote control, or a keypad. The user interface system **100** may, however, be incorporated in any suitable device that tactilely and/or visually interfaces with a user.

[0019] The volume of fluid **110** of the preferred embodiment functions to transmit fluid pressure to the back surface **125** of the second region **122** to motivate a deformation of the second region **122**. The fluid **110** preferably also functions to support the deformed (i.e., expanded) second region **122** when a user applies a force to the deformed second region **122**. The fluid **110** is preferably a substantially incompressible fluid, such as oil, water, alcohol, and/or liquid paraffin, but may alternatively be a compressible fluid, such as air. However, the fluid **110** may be any other suitable type of fluid. A portion of the fluid **110** is preferably contained within the permeable layer **140**, such as within the fluid ports **144** of the permeable layer **140** or within a cavity (e.g., reservoir) defined by the permeable layer **140**. As shown in FIGS. **1** and **5**, the user interface system **100** may also include a proximal and/or remote reservoir, respectively, that stores a portion of the fluid **110**. However, the fluid may be arranged within the user interface system **100** in any other suitable arrangement. The fluid **110** is preferably substantially chemically inert in the presence of the tactile layer **120**, the permeable layer **140**, the displacement device **150**, the touch sensor **160**, the reservoir **170**, and/or any other element of the user interface system **100** in contact with the fluid **110**; specifically, the fluid **110** preferably does not corrode and is not corroded by any component of the user interface system **100** in contact with the fluid **110**. Properties of the fluid **110** preferably remain substantially unchanged under normal operating conditions of the user interface system **100** or the device to which the user interface system **100** is applied. For example, if the user interface system **100** is used in an airplane, the properties of the fluid **110** preferably remain substantially unchanged between sea level and higher altitudes. However, the fluid **110** may have any other suitable chemical property.

[0020] As shown in FIGS. **2** and **5**, the tactile layer **120** of the preferred embodiment functions to provide a tactile surface **124** that is touchable by the user and interfaces with a user in a tactile manner. The tactile layer **120** is preferably continuous, such that a user, when swiping a finger across the tactile surface **124**, does not perceive any interruptions or seams therein. The tactile layer **120** is also preferably planar (i.e. flat) in the retracted state, but may alternatively form a non-planar (e.g., curved) surface. The tactile layer **120** may be arranged on a single plane, but may alternatively be arranged along a first plane and a second plane. For example, a portion of the tactile layer **120** may be arranged on a first surface of a device and a second portion of the tactile layer **120** may be arranged on a second surface of the device that is adjacent but not tangent to the first surface.

[0021] As shown in FIG. **9**, the tactile layer **120** further functions to define the second region **122** that outwardly deforms, from the retracted state to the expanded state, when fluid is displaced to the back surface **125** of the second region **122** (e.g., fluid pressure at the back surface **125** of the second region **122** increases above ambient air pressure); the second region **122** is preferably proud of the first region **121** in the expanded state and thus tactilely distinguishable, from the first deformable region **121**, by the user. The tactile layer **120** also functions to define the first region **121** that remains substantially undeformed despite the state of the second region **122**. The second region **122** preferably "relaxes" or "undeforms" back to the retracted state when the fluid **110** is drawn (or fluid pressure is released) from the back surface **125** of the second region **122**; in the retracted state, the second region **122** is preferably flush with the first region **121** at the tactile surface **124**. In a recessed state, the tactile layer **120** may also inwardly deform toward and/or conform to a concave contour defined by the permeable layer **140** (shown in FIG. **3**); fluid drawn away from the back surface **125** of the second region **122** preferably pulls the second region **122** into the concave contour. The recessed state preferably provides the user with additional tactile feedback that is distinguishable from the retracted state and the expanded state. The second region **122** is preferably operable between the expanded and the retracted states but may also be operable solely between the expanded and recessed states or between all of the expanded, retracted, and recessed states; the second region **122** may, however, be operable in any other state.

[0022] The tactile layer **120** is preferably elastic to permit deformation of the second region **122** in the various states. In a first variation, the tactile layer **120** is relatively more elastic in specific areas (e.g., proximal to the second region **122**) and relatively less elastic in other areas (e.g., proximal to the first region **121**); the tactile layer **120** is therefore preferably more capable of deformation at the relatively more elastic areas. In a second variation, the tactile layer **120** is generally uniformly elastic. In a third variation, the tactile layer **120** includes or is comprised of a smart material, such as Nickel Titanium (commonly referred to as "Nitinol"). The tactile layer **120** is also