directed toward an undeformable (first) region of the tactile layer **120** may be redirected substantially sideways through the interconnected cavities; though the fluid **110** is thus beneficially motivated toward a deformable (second) region of the tactile layer **120**, the fluid **110** may also be directed out of the perimeter sides of the permeable layer **140**, thus releasing fluid pressure within the permeable layer **140** and limiting outward deformation of the deformable region of the tactile layer **120**. (Beneficially, however, in this variation and any other variation in which fluid ports **144** communicate a portion of the fluid **110** in a direction substantially perpendicular to the support surface **142**, the displacement device **150** may increase fluid pressure within the permeable layer **140** proximal to both the first region **121** and the second region **122** but draw the fluid **110** only toward the second region **122** and thus deform only the second region **122**.) The perimeter wall thus prevents such release of fluid pressure and is preferably incorporated in this variation (and potentially other variations) of the permeable layer **140**. In another variation, the perimeter wall cooperates with any of the retaining wall **130**, the permeable layer **140**, and the electronic device to define the reservoir **170**. The perimeter wall may be substantially independent of the permeable layer **140** but may also be integral with the permeable layer **140** or physically coextensive with the retaining wall **130**. However, the perimeter wall may also be physically coextensive with the tactile layer **120**, retaining wall **130**, or any other element of the user interface system **100**. In the variation in which the displacement device modifies the orientation of a portion of the retaining wall **130**, the perimeter wall preferably deforms where necessary to accommodate the change in orientation.

[0046] As described above, the user interface system **100** may include a reservoir **170** that contains a portion of the fluid **110**. The reservoir **170** is preferably a proximal reservoir that is substantially adjacent to the permeable layer **140**, as shown in FIGS. **1** and **5**, but may also be a remote reservoir, as shown in FIG. **5**. As the fluid **110** is displaced toward the tactile layer **120**, additional fluid is preferably provided to the permeable layer **140** by the reservoir **170**; as the fluid no is displaced away from the tactile layer **120**, the fluid **110** is preferably recollected by the reservoir **170**. The reservoir **170** may also replenish fluid to the permeable layer **140**, such as following a leak or other loss of the fluid **110**, though the reservoir **170** may provide additional fluid for any other suitable function. The reservoir **170** is preferably coupled to the permeable layer **140** via the displacement device **150** (i.e. the displacement device **150** is arranged between the reservoir **170** and the permeable layer **140**) such that the displacement device **150** draws fluid from the reservoir **170** and toward the permeable layer **140**, and vice versa. Furthermore, the reservoir **170** may be substantially rigid such that the reservoir **170** does not substantially deform as the fluid **110** is drawn therefrom, but the reservoir **170** may alternatively be substantially deformable, such as in a variation of the reservoir **170** that is a pliable (e.g., plastic, silicone, or rubber) pouch that deforms as fluid is drawn from or into the reservoir **170**. However, the reservoir **170** may be arranged in any other suitable fashion and take any other form.

[0047] The variation of the reservoir **170** that is a proximal reservoir **170** is preferably in direct fluid contact with the permeable layer **140**, as shown in FIGS. **1** and **5**. The proximal reservoir **170** may be coupled to (or partially defined by) the permeable layer **140** opposite the support surface **142**, but may alternatively be a substantially large cavity within the permeable layer **140** and containing fluid accessible by any number of the fluid ports **144**. The proximal reservoir **170** may also include support pillars **139** that support the proximal reservoir **170** and substantially maintain the shape of the reservoir **170**, such as the support pillars **139** shown in FIG. **5**. In the variation of the permeable layer **140** that is porous, the permeable layer **140** may accept fluid from any side; thus, the proximal reservoir **170** may be arranged in any suitable orientation to communicate the fluid **110** to any side of the permeable layer **140**. The variation of the reservoir **170** that is a remote reservoir is preferably coupled to the permeable layer **140** (or an additional proximal reservoir) via a channel, but may be coupled using any other suitable element or method.

[0048] The reservoir **170** may also include a second displacement device **150** that displaces the fluid no within the user interface system **100**. This preferably decreases the load on the displacement device **150** and may be particularly useful in the variation that includes a remote reservoir, wherein the fluid no must be displaced over a substantial distance. For example, the remote reservoir may be coupled to a second displacement device **150** that is a clamp, wherein the clamp may be manually operated to displace fluid toward the permeable layer **140**. In this example, the clamp may be a hinge and/or slider on a mobile phone or any other suitable device such that, when actuated, fluid is drawn from the remote reservoir and motivated toward the permeable layer **140** (or vice versa). However, any other suitable type of second displacement device **150** may be used and may or may not be substantially similar to the displacement device **150**. The second displacement device **150** may also be used in place of the displacement device **150**.

[0049] The user interface system **100** may further comprise a pressure sensor that detects ambient air pressure (or barometric or atmospheric pressure) proximal to the user interface system **100**. The pressure sensor may be of any type of pressure sensor, such as a piezoresistive, capacitive, electromagnetic, piezoelectric, optical, or potentiometric pressure sensor. In the retracted state, the displacement device **150** preferably adjusts the fluid pressure at the back surface **125** of the second region **122** to substantially match the ambient air pressure such that the second region **122** does not deform undesirably (i.e. deviate from flush with the first region **121**). For example, in the retracted state, the displacement device **150** preferably reduces the fluid pressure at the back surface **125** of the second region **122**, when the user interface system **100** is transferred from substantially sea level to a substantially high altitude, such that the second region **122** does not outwardly deform in the presence of reduced ambient air pressure at higher altitudes. The pressure sensor may also serve as a reference for the displacement device **150**, wherein, in the expanded (or recessed) state, the displacement device **150** increases (or decreases) the pressure at the back surface **125** of the second region **122** by a pre-specified pressure above (or below) the ambient air pressure such that the second region **122** deforms substantially identically at various ambient air pressures. However, the pressure sensor may function and/or cooperate with the displacement device **150** in any other way.

[0050] As a person skilled in the art will recognize from the previous detailed description and from the figures and claims, modifications and changes can be made to the preferred embodiments of the invention without departing from the scope of this invention as defined in the following claims.