etry, size, and/or any other suitable feature. Each of the plurality of cavities **125** are preferably able to outwardly deform independently from each other, allowing the user interface system **100** to be adapted to a variety of user input scenarios. Alternatively, the plurality of cavities **125** may be grouped into a plurality of portions, wherein the cavities **125** within one group will outwardly deform together. This may be applied to scenarios wherein a group of cavities **125** are assigned to a particular user input scenario, for example, as a dial pad on a mobile phone or as a QWERTY keyboard. The processor **160** preferably selectively controls the outward deformation of the particular region **113** of each cavity **125**. However, any other suitable method of controlling the cavities **125** may be used.

[0069] The processor **160** preferably also selectively receives and/or interprets signals representing the presence of a force applied by a user to any cavity **125**. The sensor **140** for each cavity **125** is preferably arranged in an array network that preferably communicates the location of each sensor **140** to the processor **160** to allow the processor **160** to selectively receive and/or interpret signals coming from each cavity **125**. In the variation of the sensor **140** as a capacitive sensor, as shown in FIGS. **22** and **23**, the array includes a first number of X-conductors **142** and a second number of Y-conductors **144**. In a first variation, as shown in FIG. **22**, the first number of X-conductors **142** is preferably equivalent to the number of cavities **125**, wherein each X-first conductor **142** corresponds to one cavity **125**, and the second number of Y-conductors **144** is preferably equivalent to the number of columns of cavities **125**, wherein each Y-conductor **144** corresponds to all the cavities **125** within one column of cavities **125**. In this first variation, the location of a user touch is preferably determined by detecting a change in the measured capacitance value between one X-first conductor **142** and the corresponding Y-conductor **144** for a particular cavity **125**. Because each cavity **125** is associated with one X-first conductor **142**, the processor **160** is able to detect the location of the cavity **125** over which the user had applied a force. In a second variation, as shown in FIG. **23**, the first number of X-conductors **142** is preferably equivalent to the number of rows of cavities **125**, wherein each X-first conductor **142** corresponds to all the cavities **125** within one row of cavities **125**, and the second number of Y-conductors **144** is preferably equivalent to the number of columns of cavities **113**, wherein each Y-conductor **144** corresponds to all the cavities **113** within one column of cavities **144**. In this second variation, the location of a user touch is preferably determined by detecting a change in the measured capacitance value between one X-first conductor **142** and one Y-conductor **144**. Because each cavity **125** corresponds to a different intersection of the X-conductors **142** and the Y-conductors **144**, the processor **160** is able to detect the location of the cavity **125** over which the user had applied force. In a third variation, the first number of X-conductors **142** and the second number of Y-conductors **144** are both preferably equivalent to the number of cavities **125**, one X-first conductor **142** and one Y-conductor **144** correspond to one cavity **125**. In this third variation, the location of a user touch is preferably determined by detecting a change in the measured capacitance value between one X-first conductor **142** and one Y-conductor **144**. Because each cavity **125** corresponds to a different pair of the X-conductors **142** and the Y-conductors **144**, the processor **160** is able to detect the location of the cavity **125** over which the user had applied force.

[0070] Alternatively, the array network of sensors **140** may include a plurality of sensors **140**, each coupled to a cavity **125**, that each output a signal specific to the cavity **125**. For example, in the capacitive sensor variation of the sensor **140**, the sensor **140** for a first cavity **125** may send a signal of 0.5 nF when a user input is detected and a signal of 1 nF when no user input is detected, the sensor **140** for a second cavity **125** may send a signal of 5 nF when a user input is detected and a signal of 10 nF when no user input is detected, the sensor **140** for a third cavity **125** may send a signal of 50 nF when a user input is detected and a signal of 100 nF when no user input is detected, and the sensor **140** for a fourth cavity **125** may send a signal of 500 nF when a user input is detected and a signal of 1000 nF when no user input is detected. Because each cavity **125** sends a different signal, the processor **160** is able to detect the location of the user input based upon the type and/or value of the signal that is received from the sensors **140**. The plurality of sensors **140** for the cavities **125** may also be arranged in a parallel relationship (such that the overall capacitive value for a plurality of capacitors in parallel equate to the sum of the individual capacitive values) to facilitate the processor **160** in sensing the location of the user input. For example, using the aforementioned example values for the signals from the sensors **140** of a first, second, third, and fourth cavities **140**, the processor **160** may receive a combined signal of 555.5 nF from the sensors **140** when a user input is detected from all of the first, second, third, and fourth cavities **125** and a signal of 1111 nF from the sensors **140** when no user input is detected from any of the first, second, third, and fourth cavities **125**. When a user input is detected from the third cavity **125** and not from the first, second, and fourth cavities **125**, then the combined signal to the processor **160** may be 1061 nF. Similarly, when a user input is detected from both the second and third cavities **125**, then the combined signal to the processor **160** may be 1056 nF. The processor **160** is then able to interpret the locations of the user input directly from the value of the signal that is received from a plurality of sensors **140** of the cavities **125**, simplifying electrical routing, mechanical components, and programming in the user interface system **100**. The sensors **140** may also be arranged in series or in any other suitable electrical arrangement.

[0071] The array arrangements described above also provide the advantage of utilizing multiple sensors **140** to more accurately locate the presence of a user input. User input onto a first expanded particular region **113** may affect the sensor **140** readings for a second expanded particular region **113**. By collectively analyzing readings from multiple sensors **140**, the particular region **113** upon which the user provides an input may be more accurately determined. For example, in the variation wherein the sensor **140** is a pressure sensor, the pressure sensed by other sensors **140** within the system may be increased when a user provides input at a first particular region **113**. By sensing the increase of pressure sensed by sensors **140** adjacent to a particular region **113**, the location of the user input may be more accurately determined. Additionally, the array arrangements described above allows for multiple inputs provided at a single time to be detected by the system.

[0072] The sensors **140** are preferably located within the cavities **125**, but may alternatively be located adjacent to the cavities **125** or both within and adjacent to the cavities **125**. By placing sensors **140** both within and adjacent to the cavities **125**, user inputs provided to locations other than the