example case illustrated in FIG. **1***a*, the detection directions of the first force component and the second force component are substantially perpendicular with respect to each other, i.e. the x-direction and the y-direction. It is, however, sufficient that the detection directions of the first force component and the second force component are mutually intersecting, i.e. they do not necessarily have to be perpendicular to each other. In the example case illustrated in FIG. **1***b*, both the first force component and the second force component are detected in the y-direction but the first force component and the second force component are detected at different points of the sensor element.

[0040] FIG. **1***c* illustrates an example case in which the force sensor equipment comprises force detectors **103***a*-**103***d* that are arranged to detect force components Fy**1**-Fy**4**, respectively, and force detectors **103***e*-**103***h* that are arranged to detect force components Fx**1**-Fx**4**, respectively. The x-component of resultant force directed to the sensor surface **102** is Fx**3**+Fx**4**−Fx**1**−Fx**2**, the y-component of the resultant force is Fy**3**+Fy**4**−Fy**1**−Fy**2**, and torque directed to the sensor surface with respect to the geometrical middle point of the sensor surface is (Fy**1**−Fy**2**+Fy**4**−Fy**3**)×Dx/2+(Fx**1**−Fx**2**+Fx**4**−Fx**3**)×Dy/2. The force sensor equipment can be provided also with a force detector that is arranged to detect the z-component of the resultant force in which case the resultant force can be detected in all three dimensions. An electronic device that is connected to the user interface can be controlled, for example, on the basis of location and/or movement of an external object touching the sensor surface, on the basis of temporal changes of the strength and/or the direction of the resultant force, and on the basis of temporal changes of the torque.

[0041] FIGS. **1***a*, **1***b*, and **1***c* present example cases in which the force sensor equipment comprises one or more force detectors that are connected to edges of the sensor element **101**. Alternative realizations for the force sensor equipment are illustrated in FIGS. **1***d*-**1***h*. FIG. **1***e* shows a section taken through A-A of FIG. **1***d*, FIG. **1***g* shows a section taken through A-A of FIG. **1***f*, and FIG. **1***h* shows a section taken through B-B of FIG. **1***g*. FIGS. **1***d* and **1***e* illustrate an example case in which the force sensor equipment comprises a torsional sensor **103** connected to the sensor element **101** and arranged to detect torque T caused by common effect of force components directed to the sensor surface **102**. FIGS. **1***f*, **1***g*, and **1***h* illustrate an example case in which the force sensor equipment comprises a ring-sensor **103** arranged to detect first and second components Fx and Fy of force F directed to the sensor surface **102**. The ring-sensor **103** is located around a rod **104** that is attached to the sensor element **101**. The rod is supported with a flexible joint **106** to surrounding structures.

[0042] FIG. **2***a* shows an electronic device **200** comprising a user interface according to an embodiment of the invention. FIG. **2***b* shows the A-A section view of the electronic device. A coordinate system **230** is shown for presentational purposes. The user interface of the electronic device comprises a sensor element **201** that has a sensor surface **202**. The sensor element is arranged to produce a location indicator that is adapted to indicate a location of a spot **231** of the sensor surface **202** that is closest to an external object **220**. The location indicator is an output signal of the sensor element **201**. The location indicator can express, for example, x- and y-coordinates of the spot **231**. In the exemplifying situation shown in FIGS. **2***a* and **2***b* the external object is a finger **220** of a user of the electronic device **200**. It is also possible to use a sensor element that is capable of producing a location indicator adapted to indicate locations of two or more spots of the sensor surface which are simultaneously touched by (or sufficiently near to) two or more external objects. The user interface comprises force sensor equipment arranged to produce a force indicator **225** that is adapted to indicate a temporal change of a first force component directed to the sensor surface and a temporal change of a second force component directed to the sensor surface. The first force component can be e.g. an x-component of force directed to the sensor surface **202** and the second force component can be e.g. a y-component of the force directed to the sensor surface. The force sensor equipment comprises force detectors **203***a* and **203***b* that are arranged to detect forces in the x-direction. The force sensor equipment comprises also force detectors (not shown) that are arranged to detect forces in the y-direction. The force detectors can be, for example, according to what is depicted in FIG. **1***c*. Output signals of the force detectors constitute the force indicator **225**. The user interface comprises a processor unit **205** that is arranged to control the electronic device on the basis of the location indicator and the force indicator. The user interface can comprise a vibration generator **235** responsive to the force indicator and/or to the location indicator. Mechanical vibration generated with the vibration generator can be used e.g. for indicating that the electronic device has received a control action from the user.

[0043] In the electronic device shown in FIGS. **2***a* and **2***b*, the sensor surface **202** is also a display screen with the aid of which visual information can be shown. It is also possible that a display screen is only a part of the sensor surface **202** or the sensor surface **202** is only a part of a display screen. The user interface of the electronic device can comprise also a keyboard **210** and/or other means for exchanging information between the electronic device and the user.

[0044] In a user interface according to an embodiment of the invention, the sensor surface **202** is a touch sensitive sensor surface that is arranged to produce the location indicator as a response to a situation in which the external object **220** touches the sensor surface.

[0045] In a user interface according to an embodiment of the invention, the sensor surface **202** is a capacitive sensor surface that is arranged to produce the location indicator as a response to a situation in which the distance d between the sensor surface and the external object **220** is less than a pre-determined limit value.

[0046] In a user interface according to an embodiment of the invention, the sensor surface **202** is a combined touch sensitive and capacitive sensor surface. In other words, the sensor element **201** is capable of detecting a situation in which the external object does not touch the sensor surface but the distance d between the sensor surface and the external object is less than the pre-determined limit value and the sensor element is capable of distinguishing the above-described situation from a situation in which the external object touches the sensor surface.

[0047] In a user interface according to an embodiment of the invention, the processor unit **205** is capable of controlling the electronic device **200** to execute a pre-determined function as a response to a situation in which a pre-determined change is detected in at least one of the following: strength of the x-component of the force directed to the sensor surface and strength of the y-component of the force.