

**[0014]** In first aspect of the invention, a method for providing a touch pad UI input device in a mobile terminal is presented. The method implemented in the flip-type mobile terminal includes at least following steps: observing the position angle of the touch pad UI input device relative to the mobile terminal and; if the touch pad UI input device is closed it acts as a mechanical protector for the surface of the touch pad UI and the display unit and; if the touch pad UI input device is opened (more than few degrees, such as for example opened about 90° but not more than approximately 180°), it is used in a same way as an input device in laptops and; if the touch pad UI input device is opened more than 180° or especially if it is opened completely (essentially 360°, whereupon the touch pad is located in the back side of the mobile terminal) it acts as a pointing and input device using tips of middle fingers, for example. Further, when the touch pad UI input device is opened more than 180°, movements of the fingers (in vertical directions if the touch pad is hinged to the lowest or upper part into the mobile terminal or alternatively in horizontal direction if the touch pad is hinged to the right or left part into the mobile terminal) on the touch pad has to be read contrary to the situation where the touch pad UI input device is opened at maximum 180°.

**[0015]** The method implemented in the monoblock-type mobile terminal and also in flip-type terminal construction when the touch pad is opened completely or located in the back side of the mobile terminal includes at least the following steps: observing movements or the position of the user fingertip on the touch pad UI by a touch sensitive means of the touch pad UI input device and determining and also displaying the position of the cursor on the display by the position of the fingertip on the touch pad. The method may also include the step of observing presses of the user fingertip on the touch pad UI input device, especially if the touch pad UI input device comprises a pressure sensitive means, and determining a click-operation by pressing the touch pad with the finger. Clicking may be achieved also by pressing a certain button by a thumb, where the button locates, for example, in the front side of the mobile terminal.

**[0016]** Further the method according to an additional embodiment of the present invention implemented in the monoblock-type mobile terminal and also in flip-type terminal construction may include the step of dividing the touch pad UI virtually into the two or more portion, for example one portion for a left hand and one portion for a right hand, whereupon a user can move a cursor with his right hand finger, scroll a content displayed in the display of the mobile terminal in the direction of up/down by moving his left hand finger to the up/down or in the direction of left/right by moving his left hand finger to the left/right on the surface of the touch pad UI input device. Furthermore it may be possible for the user to zoom the content of the display in/out by moving his left finger on the left portion of the surface of the touch pad UI, for example, and at the same time pressing the right portion of the touch pad UI input device by a right hand finger, for example. Alternatively, at the same, when the user moves his finger on the surface of the touch pad UI, he can press, not the surface of the touch pad UI, but a certain button, such as a button locating, for example, in the front side of a mobile terminal in order to zoom the content of the display in or out. The button may be

pressed for example by a thumb. The method described above may advantageously be utilized for example in improved web-browsing.

**[0017]** In a second aspect of the invention, a mobile terminal embodying the invention is presented. The flip-type mobile terminal construction comprises a separate touch pad UI input device hinged to the mobile terminal in a way that in a closed position the touch pad UI input device act as a mechanical protector for the touch sensitive surface of the touch pad UI and the display unit. Further the touch pad UI input device is arranged to operate as an input device in laptops when opened more than few degrees (opened about 90° but not more than approximately 180°, for example). In addition the touch pad UI input device is also arranged to operate as a pointing and input device using tips for example of middle fingers when opened completely (essentially 360°, whereupon the touch pad is located in the back side of the mobile terminal). Furthermore the flip-type mobile terminal comprising the hinged touch pad UI input device is arranged to observe the position angle of the touch pad UI input device relative to the mobile terminal and function according to a certain mode characteristic for each position of the touch pad, such as for example operate on standby mode when the touch pad is closed and activating for example a virtual keyboard on the display when the touch pad is opened. Especially, the mobile terminal or alternatively the touch pad UI is arranged to read the movements of the fingers in vertical directions on the touch pad contrary in mode where the touch pad is opened more than approximately 180° as in mode where the touch pad is opened 180° or less.

**[0018]** In addition the mobile terminal or touch pad UI according to the invention is arranged to observe movements or the position of the user fingertip on the touch pad by a touch sensitive means of the touch pad UI input device and determine and also display the position of the cursor in the display by the position of the fingertip on the touch pad. Further according to an embodiment of the invention the touch pad UI input device may be pressure sensitive, whereupon the mobile terminal or touch pad UI may be arranged to observe presses of the user fingertip on the touch pad by a pressure sensitive means of the pressure sensitive touch pad UI input device and determine a click-operation by pressing the touch pad with the finger.

**[0019]** Alternatively the touch pad UI input device or a sensitive area may be arranged fixedly into the back side of the mobile terminal in a monoblock-type terminal construction whereupon the monoblock-type mobile terminal is arranged to operate as a flip-type terminal construction which touch pad UI is completely opened.

**[0020]** It should also be noted that the touch pad UI input device according to any embodiment of the invention may comprise a pressure sensitive means under the touch pad UI surface for example so that a user can do point and click—operations as normally done with a mouse and the position of the cursor on the display is determined by the position of the fingertip on the touch pad and clicking is achieved by pressing the touch pad with the same finger in the most advantageous embodiment of the invention. Clicking may be achieved also by pressing a certain button locating, for example, in the front side of a mobile terminal. The button may be pressed for example by a thumb. In addition it should