[0042] FIG. **4**A-**4**D are schematic views of information represented on a display device, which includes control elements that are partly magnified in accordance with an ascertained control spotlight;

[0043] FIG. **5**A-**5**D are schematic views of a display device on which the control elements are scaled as a function of a size of an ascertained control spotlight;

[0044] FIG. **6**A-**6**C are schematic views of a display device on which control elements are scaled differently as a function of a control intention;

[0045] FIG. **7**A-**7**B are schematic views of a display device on which control elements of a list are scrolled through as a function of a control intention;

[0046] FIG. **8** is a schematic representation of an interactive control device in a motor vehicle;

[0047] FIG. **9-17** illustrate static gestures performed by a hand;

[0048] FIG. **20-27** illustrate dynamic gestures performed by a hand; and

[0049] FIG. **28-33** illustrate complex gestures performed by a hand.

DETAILED DESCRIPTION

[0050] FIG. **1** shows a block diagram depicting a method **10** for operating an interactive control device. As represented by a method block **12**, the method includes a representation of information on a display device. A layout for the representation of the information may be initially selected such that it is designed for an optimal visual communication of information. In the following, such a layout is called a visual layout.

[0051] The control device detects sensor information **12**. The sensor information on the one hand includes information about one or several user(s). This information is called user information. The latter includes in particular information about bodily actions of the user(s), which are detected by sensor units. The bodily actions include for example an arm movement, which may be ascertained for example by a sensor unit which detects using cameras and/or a sensor unit based on ultrasound. Furthermore, using the sensor unit equipped with cameras it is possible to detect a viewing direction of the user(s). Directing one's view to the display device represents a particularly important bodily action since a control operation is usually preceded by a look onto the display device of the interactive control device. Additionally, the detected sensor information may include information about a driving situation or a surrounding environment of the motor vehicle. Certain control actions may frequently be preceded by certain driving events.

[0052] On the basis of the detected sensor information, a control intention of the user(s) is subsequently ascertained **14**. In order to ascertain a control intention of the user, the various information contained in the sensor information, especially the user information, is evaluated. For this purpose, particularly the behavior of the user(s), i.e. the bodily action(s) of the user(s), are evaluated and assessed. If a change in the viewing direction onto the display device of the interactive control device is established, for example, and if correlated in time a movement of the arm or the hand, which is spatially nearest to the interactive control element, is detected, then a control intention may be deduced. Many different combinations of individual information are possible, which may be evaluated and assessed. For example, a targeted movement of a body part in the direction of the control unit may be a precondition for a control intention to count as detected.

[0053] With the aid of a query, a check is performed as to whether the control intention has changed **16**. If this is not the case, then the representation of the information on the display device is continued without change. If a change in the control intention has occurred, i.e. if a control intention has been recognized or if it is established that a control intention no longer exists, then the information that is represented on the display device is adapted in accordance with the control intention or the nonexistent or no longer existing control intention **18**. A change exists even if the control intention has become (more) concrete.

[0054] If the change of the control intention lies in the fact that a control intention of a user is detected that did not exist previously, then the information to be displayed is changed such that the layout on the display device is optimized for a haptic control operation. Example embodiments may provide for no control elements to be graphically represented in the visual layout. In the haptic layout, the control elements are inserted, i.e. their transparency level of 100% is reduced. There may likewise be a provision to switch from a pictorial representation to a text representation. In example embodiments, in which small control elements are graphically represented in the visual layout, the control elements in the haptic layout may be magnified. The adaptation may further include a change in the design of the control elements, for example an animation of the control element (widget). In a display device in the form of an autostereoscopic three-dimensional display device, a spatial protrusion of the control elements or a spatially anterior superposition of the representation of the information may be provided.

[0055] The ascertainment and adaptation of the represented information may occur in steps that may transition into one another continuously. First, a control intention is ascertained using sensor information of a first sensor unit. The first sensor unit may include an imaging sensor system, for example a camera system. If this general control intention has been detected, then the visual layout is switched to a haptic layout. Control elements are inserted for example, which were previously not visible.

[0056] When ascertaining the control intention, example embodiments furthermore provide for a position and a surrounding region on the display device to be ascertained, which is intended for a control action, i.e. an activation of a control element. This process is called a determination of a control spotlight **20**.

[0057] Various sensor information may be evaluated for ascertaining the control spotlight. In particular, a direction of movement of a body part of the user and a speed of movement, a viewing direction onto the display device and information about the driving situation are evaluated individually or jointly. As the result of ascertaining the control spotlight, one obtains a position on the display device, which indicates the intended target position, and a radius, which is a measure for the uncertainty of the ascertained intended target position. Exemplary embodiments may provide for the shape of the control spotlight to be noncircular. This is advantageous in particular if the control direction deviates greatly from a direction of a surface normal of the display surface of the display device.

[0058] The information that characterizes the control spotlight (position/radius and/or other indication of region) is taken into account when adapting the information to be represented. For example, the control elements are scaled as a function of the distance from the position and a planar overlap