

[0173] The display screen 391 detects an inducing voltage generated by the user's touching the display screen 391 and supplies the detected voltage to a signal processing circuit 372. The processing circuit 372 calculates a coordinate on the display screen 391 in which the inducing voltage is generated, identifies the user (communication device), and supplies the information of the calculated one to the personal computer 373. The personal computer 373 controls the projector 374, projects a predetermined image onto the display screen 391, and performs a processing based on the information supplied from the signal processing circuit 372. The projector 374 projects the image information supplied from the personal computer 373 from frontward on the display screen 391.

[0174] A switch 392 is e.g. a switch for illumination that is provided on the wall 390. The display screen 391 is provided, covering the switch with itself. Further, the personal computer 373 recognizes a coordinate of the switch 392 on the display screen 391.

[0175] Switches 393 to 395 are formed by images projected on the display screen 391 by the projector 374. When the user operates the switches 393 to 395 with a finger and the like, i.e., when the user touches any linear electrodes at positions onto the switches 393 to 395 are projected, a processing corresponding to each of the switches is performed.

[0176] Following will be explained about the operation. When the user operates the switch 392, i.e., when the user touches a linear electrode at a position of the switch 392, an inducing voltage generated on the display screen 391 is supplied to the signal processing circuit 372. The signal processing circuit 372 detects a coordinate from which the inducing voltage is generated, identifies the user (communication device), and supplies the information to the personal computer 373.

[0177] The personal computer 373 identifies the user who touches the switch 392 based on the information supplied from the signal processing circuit 372. Then, the personal computer 373 displays a specified image onto the display screen 391 and the like, i.e. performs a preset processing.

[0178] Further, when the user touches a linear electrode at any of positions on which the switches 393 to 395 are projected, an inducing voltage that is generated on the display screen 391 is supplied to the signal processing circuit 372. The signal processing circuit 372 detects a coordinate at which the inducing voltage is generated, identifies the user (communication device), and supplies the information to the computer 373.

[0179] The personal computer 373 identifies the user who touches the display screen 391 and identifies the switch that the user touches, based on the information supplied from the signal processing circuit 372. Then, the personal computer 373 displays a specified image onto the display screen 391 and the like, i.e. performs a preset processing by each of the switches.

[0180] In the above-mentioned, the number of the switches projected onto the projector 374 is three, consisting of the switches 393 and 395. However, the number is not limited thereto. Any number is available. Further, each of the switches may be provided at any position, if the position lies within an area where the projector 374 is projected. Further,

setting of the positions, the number, and the corresponding processes and the like of these switches are different by the user. For example, setting of the user who operated the switch 392 may be displayed on the display screen 391.

[0181] Further, the computer 373 controls illumination and the other units (not shown in the figure) and the like. In the other hand, the user operates the switches 393 to 395. Thereby, these units may be controlled.

[0182] As above-mentioned, using the present invention, without making the user notice a device relating of the invention, a ubiquitous computing environment can be constructed that actively backups a human life.

[0183] FIG. 30 shows an example of construction in which an input device is used that is constructed by the resistor array formed in a manner.

[0184] An input device 410 is formed by a resistor array in a manner. Electrodes 411X1 and 411X2 are detection conductors (i.e. electrodes) that detects an input level in Y-axis direction. Electrodes 411Y1 and 411Y2 are detection conductors (i.e. electrodes) that detects an input level in X-axis direction.

[0185] A linear amplifier 412X amplifies a signal detected at the electrode 411X1 and outputs the amplified signal to a differential amplifier 417X and a low-pass filter 413.

[0186] Linear amplifiers 412X2, 412Y1, and 412Y2 respectively amplify each of signals that is detected at the electrodes 411X2, 411Y1, and 411Y2. The linear amplifier 412X2 outputs the amplified signal to an inverter 416X2 and the low-pass filter 413. The linear amplifier 412Y1 outputs the amplified signal to a differential amplifier 417Y and the low-pass filter 413. And, the linear amplifier 412Y2 outputs the amplified signal to an inverter 416Y2 and the low-pass filter 413.

[0187] The low-pass filter 413 smoothes outputs of the linear amplifiers 412X1, 412X2, 412Y2, and 412Y2 and supplies the smoothed outputs to an A/D conversion unit 414. The A/D conversion unit 414 converts each of the outputs of the low-pass filter 413 into digital data and detects a coordinate. The detected coordinate is output from an output terminal 415 to e.g. a personal computer or the like.

[0188] Further, the inverter 416X2 inverts an output of the linear amplifier 412X2 and supplies the inverted output to the differential amplifier 417X. Likewise, the inverter 416Y2 inverts an output of the linear amplifier 412Y2 and supplies the inverted one to the differential amplifier 417Y.

[0189] The differential amplifier 417X makes difference between the output of the linear amplifier 412X1 and the output of the inverter X2 amplify in a saturation manner, regards the amplified one in the saturation manner as a logic level output, and outputs the logic level output to an adder 418. The differential amplifier 417Y makes difference between the output of the linear amplifier 412Y1 and the output of the inverter Y2 amplify in a saturation manner, regards the amplified one as a logic level output in the saturation manner, and outputs the logic level output to the adder 418.

[0190] The adder 418 adds the output of the differential amplifier 417X to the output of the differential amplifier 417Y and outputs the added one to a demodulator 419. The