

extent per the area setting action count can be set proportional to a continuous repetition count of the area setting actions. For instance, a zoom-in extent corresponding to an area setting action 'one time' can be two times. A zoom-in extent corresponding to area setting actions 'two times' can be four times. Thus, as the continuous repetition count of the area setting actions gets incremented, it is able to set a greater zoom-in extent. On the contrary, it is understood that the zoom-in extent per the area setting action count can be set inversely proportional to a continuous repetition count of the area setting actions.

[0078] In one embodiment, the terminal is able to zoom in a specific part of an image displayed on the touchscreen to a zoom-in extent inverse proportional to a size of the set area. A process for zooming in an image to correspond to an area setting action for the touchscreen is explained with reference to FIG. 9A and FIG. 9B. In FIG. 9A and FIG. 9B, assume that a map, on which a moving route of the mobile terminal 100 is marked, is displayed as a result of driving the position-location module 115.

[0079] Referring to FIG. 9A, a user draws a circle 911 formed clockwise on the touchscreen using a pointer 913. In this case, the mobile terminal 100 may then recognize a center 911-1 of the circle 911 and a size of the circle 911. Subsequently, the mobile terminal 100 displays a specific part of an image displayed in FIG. 9A(a) centering on the center 911-1 to a zoom-in extent corresponding to the size (generally, it can be determined as a diameter or radius of the circle) of the circle 911 in a manner of zooming in the corresponding (See FIG. 9A(b)).

[0080] Referring to FIG. 9B(a), a user draws a circle 912 formed clockwise on the touchscreen using a pointer 913. In this case, the mobile terminal 100 recognizes a center 912-1 of the circle 912 and a size of the circle 912. And, assume that the size of the circle 912 shown in FIG. 9B is twice larger than that of the former circle 911 shown in FIG. 9A. Subsequently, the terminal mobile 100 displays a specific part of an image displayed centering on the center 912-1 to a zoom-in extent corresponding to the size of the circle 912 in a manner of zooming in the corresponding part.

[0081] In this case, a zoom-in extent per area size can be stored in the memory 160. And, a zoom-in extent per area size can be set by a user or the mobile terminal 100. Moreover, a zoom-in extent per area size can be set inversely proportional to an area size. For instance, a zoom-in extent corresponding to a radius '1 cm'/2 cm' of a circle forming an area may correspond to 'four time'/'two times'. Hence, it is able to set the zoom-in extent smaller as the area size gets larger. It should be understood that the zoom-in extent per the area size can also be set proportional to the area size.

[0082] The mobile terminal 100 is able to display a specific part of an image displayed on the touchscreen in a manner of zooming in the specific part to a zoom-in extent proportional to a speed of a drag action for setting an area. For this, a process for zooming in an image to correspond to an area setting action for the touchscreen is explained with reference to FIG. 10 in aspect of an image configuration as follows. In FIG. 10, assume that a map, on which a moving route of the terminal 100 is marked, is displayed as a result of driving the position-location module 115.

[0083] Referring to FIG. 10(a), a user draws a circle 1011 formed clockwise on the touchscreen using a pointer 1013. In this case, the mobile terminal 100 recognizes a speed of a drag action for setting a center 1011-1 of the circle 1011 and a size

of the circle 1011. If a drag speed is '5 m/s', for example, the terminal displays a specific part of an image displayed centering on the center 1011-1 in a manner of zooming in the specific part to a zoom-in extent corresponding to the drag speed '5 m/s', for example, as shown in FIG. 10(b).

[0084] If a drag speed FIG. 10(a) is '10 m/s', for example, the mobile terminal 100 displays a specific part of an image displayed centering on the center 1011-1 in a manner of zooming in the specific part to a zoom-in extent corresponding to the drag speed of '10 m/s' FIG. 10(c). In this case, a zoom-in extent per drag speed can be stored in the memory 160. And, a zoom-in extent per drag speed can be set by a user or the mobile terminal 100.

[0085] Moreover, a zoom-in extent per drag speed can be set proportional to a drag speed. For instance, a zoom-in extent corresponding to a drag speed '5 m/s'/'10 m/s' may correspond to 'four time'/'two times'. Hence, it is able to set the zoom-in extent greater as the drag speed gets higher. It is understood that the zoom-in extent per the drag speed can be set inverse proportional to the drag speed.

[0086] Referring now to FIG. 6, a user inputs a touch action corresponding to an image zoom-out command to the mobile terminal 100 via the touchscreen [S640]. In this case, the touch action corresponding to the image zoom-out command can include an area setting action performed by the user on the touchscreen. For instance, in case that a looped curve having an inner area is drawn on the touchscreen by the area setting action, the mobile terminal 100 can recognize that the touch action corresponding to the image zoom-out command has been input thereto. In this case, if a curve is drawn instead of the looped curve, the mobile terminal 100 is able to analogize a looped curve most similar to the drawn curve.

[0087] A touch action according to a touch count corresponding to the image zoom-out command, a touch pressure, a touch direction or a touch time may also be input as the touch action corresponding to the image zoom-out command to the mobile terminal 100. In the following description, the touch action corresponding to the image zoom-out command is explained by limiting it to a user's area setting action for the touchscreen. In one embodiment, the mobile terminal 100 obtains a pattern of an area setting action and is then able to discriminate whether the area setting action is provided for an image zoom-in or an image zoom-out.

[0088] For instance, the mobile terminal 100 may be able to discriminate whether the area setting action is for the image zoom-in or the image zoom-out according to a drag direction of an area, a position of a point touched by a pointer after area setting, or a last position of the pointer according to an area setting completion. This will be explained in the following description with reference to FIGS. 15 to 17.

[0089] In one embodiment, the mobile terminal 100 may directly enter the step S640 without passing through the above-described steps S610 to S630 (image zooming-in and displaying steps) or may not perform steps after the step S640 (image zooming-out and displaying steps) after completion of the steps S610 to S630. This is because the process according to the image zoom-in and the process according to the image zoom-out in the present invention may be separately executed.

[0090] The mobile terminal 100 zooms out the image displayed on the touchscreen to correspond to the touch action corresponding to the image zoom-out command input in the inputting step S640, e.g., to the area setting action [S650]. The mobile terminal 100 then displays a whole image includ-