

in the selected keys are averaged and used together in step S116 to generate the new position of every representative position.

[0112] The main embodiment described above includes the following features:

[0113] (i) candidate keys are selected based on proximity of their representative positions to the selected position;

[0114] (ii) candidate words are selected based on the proximity of the representative positions of relevant keys to the selected position and word likelihood; and

[0115] (iii) representative positions are repositioned based on the selected positions relative to the representative positions of the intended keys.

[0116] However, the present invention does not require that all of (i), (ii) and (iii) are present. For instance different aspects of the invention include any one or more of these:

[0117] 1—(i) without (ii) or (iii) [for instance deciding on candidate keys based upon distance and putting the top candidate into the message line];

[0118] 2—(ii) without (i) or (iii) [for instance deciding on the closest key and only generating a word list for that key];

[0119] 3—(iii) without (i) or (ii) [for instance deciding on the closest key and resetting the representative position for that key];

[0120] 4—(i) and (ii) without (iii) [for instance deciding on candidate keys based upon distance, putting the top candidate into the message line and generating a word list as described];

[0121] 5—(i) and (iii) without (ii) [for instance deciding on candidate keys based upon distance, putting the top candidate into the message line and resetting the representative position for that key];

[0122] 6—(ii) and (iii) without (i) [for instance deciding on the closest key, only generating a word list for that key top and resetting the representative position for that key]; or

[0123] 7—(i), (ii) and (iii) [as described].

[0124] These combinations are not just possible for the main embodiments of (i), (ii) and (iii), but also for the various alternatives mentioned and others.

[0125] In the main embodiment, the bigger keys, such as the space and return keys are not included, in that if the selected position falls within the display area of any such key, that key is always taken to have been selected. For this purpose, such keys would be taken not to be within the virtual keyboard for the purposes of step S102.

[0126] In an alternative, the bigger keys in the virtual keypad are provided with several representative positions (although only one display area appears in the virtual keyboard). If a selection operation leads to a selected position near any one of those representative positions, then the particular key is operated. Splitting the larger keys, in effect, into several smaller keys each with its own representative position, allows the larger keys to be as much of a

potential candidate as the smaller ones (although associated candidate words would be by way of an indication of a space, a line break or whatever else would be appropriate). It also allows their representative positions to be re-calibrated in the same way.

[0127] It is also or alternatively possible for the smaller keys (i.e. most of the keys) to have several representative positions, spaced apart. In this manner, if a selected position falls between the representative positions belonging to the same key, it can be decided that that key alone was intended.

[0128] The above described embodiments relate to a virtual keyboard and selection of keys thereon by a touch screen of a mobile telephone. It is clearly evident that the invention would apply to almost any situation where a touch screen is used, for instance in a PDA or even non-mobile environments. Additionally, this invention is also applicable to other systems where there are selectable portions on a screen, representing individual symbols, instructions or such like. It would be particularly useful where parallax is a problem (for instance selection by light beam on a light sensitive front screen or selection by cursor movement in a screen in front of the selection screen). It would also be useful in other systems where a user's selection may not be as accurate as it should, for instance even in a normal mouse selection environment.

[0129] Of course the arrangement of any keyboard is not limited to that shown. For example the letter and number keys can easily vary. Further, the alphabet does not need to be Roman but could be Greek, Cyrillic, Arabic or any other one or could be replaced with characters, such as Chinese, Japanese or others. Likewise the numbers symbols could be Arabic, Chinese or others.

[0130] The invention is not just limited to use with a keyboard. The functions provided, at least those relating to determining candidates for what was intended and for re-calibration, can be used with the selection of any button from a set of buttons or other selectable portions in an image.

[0131] The detailed description provides a preferred exemplary embodiment only and is not intended to limit the scope, applicability or configuration of the invention. Rather, the detailed description of the preferred exemplary embodiment provides those skilled in the art with an enabling description for implementing the preferred exemplary embodiment of the invention. It should be understood that various changes can be made in the function and arrangement of elements without departing from the spirit and scope of the invention as set forth in the appended claims.

We claim:

1. A method for use in deciding a selectable portion that is selected during a selection operation from amongst a first plurality of selectable portions of an image displayed on a screen, where the selection operation indicates a selected position in the image and each of said first plurality of selectable portions has a representative position within the image, the method comprising:

receiving input data identifying the selected position, indicated during the selection operation; and

deciding on at least one candidate for the selected selectable portion, using the position of the selected position