

stored in the smartcard device can be used to make a keyboard download over a network, such as the Internet, a keyboard layout in the traveler's native language. If a network is not available, a smartcard device may also include an actual keyboard applet or keyboard layout. The keyboard applet or keyboard layout would then be downloaded directly from storage on the smartcard device rather than from the network.

A layout flag may also be set using switches such as rotatable keyboard layout selector 221 and keyboard layout indicator switch 212 on keyboard input device 110. Accordingly, keyboard applet 114 checks to determine if a layout flag is set by switches on the keyboard (step 406). Keyboard applet 114 then sets the layout flag based upon the setting of the keyboard switches on the keyboard (step 408). Some keyboards may have the display elements on each keycap but may not have switches on the keyboards. On a keyboard without these switches, keyboard applet 114 may set the layout flag according to an environment variable set in the operating system (step 410). The operating system, an application, or a user can set this environment variable to select the appropriate keyboard layout. The keyboard applet 114 then sets the layout flag to the environment variable value (step 412). Alternatively, if techniques discussed above do not set the layout flag, keyboard applet 114 selects a default value for the layout flag (step 414). This default value may be stored in NVRAM 128.

FIG. 5 is a flowchart indicating the method steps used by a keyboard applet to display a keyboard layout on keyboard input device 110. These steps relate to step 308 in FIG. 3. Initially, keyboard applet 114 determines if the layout flag corresponds to the keyboard layout in use on the computer system (step 502). Generally, keyboard applet 114 queries NVRAM 128 for parameters that indicate the keyboard layout in use on the input device. NVRAM can be used to store data accessed when computer system 101 is booted as well as during execution. If the layout flag corresponds to the keyboard layout in use on the system then the keyboard layout is loaded from NVRAM 128, memory 126, or other storage areas associated with computer system 101 (step 504).

If the layout flag does not correspond to the keyboard layout in use, then keyboard applet 114 must locate and display the appropriate keyboard layout. Keyboard applet 114 locates a keyboard layout that corresponds to the layout flag and uses the keyboard layout for keyboard input device 110. If keyboard applet 114 requires an update, keyboard applet 114 may also locate an updated keyboard applet capable of loading the keyboard layout corresponding to the layout flag (step 506). Generally, keyboard applets and keyboard layouts are stored on a server computer connected to a network such as the Internet.

Accordingly, keyboard applet 114 downloads and stores a keyboard layout or a new keyboard applet into keyboard input device 110 (step 508). Typically, the new keyboard applet will replace the existing applet when computer system 101 is rebooted. Application 112 then executes the keyboard applet to load the appropriate keyboard layout (step 510). Applications executing on computer system 101 use keyboard applet 114 to process keystrokes entered on keyboard input device 110 (step 512).

In operation, a user operates a keyboard input device 110 as indicated by the method steps in the flowchart in FIG. 6. Initially, the user selects a keyboard layout (step 602). The user can select the keyboard layout by setting switches on keyboard 110 as discussed above. A keyboard applet implemented in accordance with the principles described herein

locates the proper keyboard layout and loads it into keyboard input device 110 (step 604). The appropriate symbols are displayed on keyboard input device 110 and the keyboard applet processes the users keystrokes (step 606).

While specific embodiments have been described herein for purposes of illustration, various modifications may be made without departing from the spirit and scope of the invention. Instead of using a keyboard input device as discussed above, other implementations consistent with the present invention can also be applied to any input device capable of displaying symbols on a selectable button or area. These input devices can include mice, joysticks, touch pads, touch-screens, and other devices used to interact with a computer system. In another implementation, a keyboard applet and keyboard layout can be stored in memory on the computer system instead of memory in the keyboard input device. The keyboard applet is executed on the computer system and used to display symbols corresponding to the keyboard layout on the keyboard input device. Furthermore, although aspects of the present invention are described as being stored in memory and other storage mediums, one skilled in the art will appreciate that these aspects of the present invention can also be stored on or read from other types of computer-readable media, such as secondary storage devices, like hard disks, floppy disks, or CD-ROM; a carrier wave or other propagation medium from the Internet; or other forms of RAM or ROM. Accordingly, the invention is not limited to the above described embodiments, but instead is defined by the appended claims in light of their full scope of equivalents.

What is claimed is:

1. A method of configuring an input device for a data processing system, the input device having a set of display elements capable of displaying symbols the method comprising:

selecting an input device layout;
determining whether the selected input device layout is displayed;
determining a location of the selected input device layout when it is determined that the selected input device layout is not displayed;
retrieving the selected input device layout; and
displaying a set of symbols on the display elements corresponding to the input device layout.

2. The method of claim 1 wherein selecting an input device layout further comprises reading a layout flag indicating the input device layout.

3. The method of claim 1 wherein selecting an input device layout further comprises reading a switch value indicating the input device layout.

4. The method of claim 1 wherein selecting an input device layout further comprises reading a value from a smartcard indicating the input device layout.

5. The method of claim 1 wherein retrieving further comprises:

downloading the selected input device layout from a server connected to the network.

6. The method of claim 1 wherein retrieving further comprises:

downloading an applet having the selected input device layout; and

processing keystrokes from an input device using the applet and the selected input device layout.

7. The method of claim 1 wherein the retrieving the input device over the network further comprises:

determining if the selected input device layout is already loaded in the input device; and