

phony modules, or computing devices, such as laptop or desktop computers, incorporated with telephony facilities.

For purposes of explanation, specific numbers, materials and configurations are set forth in order to provide a thorough understanding of the present invention. However, it will also be apparent to one skilled in the art that the present invention may be practiced without the specific details. In other instances, well-known features are omitted or simplified in order not to obscure the present invention. The phrase “in one embodiment” will be used repeatedly, however the phrase does not necessarily refer to the same embodiment, although it may.

Referring now to FIGS. 1-3, wherein two front views of two wireless mobile phones **100** and **200**, in accordance with two embodiments, and an internal component view of wireless mobile phone **100/200**, in accordance with one embodiment, suitable for use to practice the present invention, are shown. As will be described in more detail below, operating logic **300** (FIG. 3) of phone **100/200** are incorporated with the teachings of the present invention to allow a user to quickly dial or re-dial a callee in a “corrected” calling format, to enhance the usability and usage experience of phone **100/200**. Typically, the “corrected” calling format is a calling format, requiring certain dialing prefix, including possibly the need of a country and/or an area code. In one embodiment, these enhancements to operating logic **300** include voice recognition logic to detect incorrect dialing, and facilitate automatic re-dialing with the corrected dialing format.

For the illustrated embodiments, phone **100/200** includes body casing **116/216**, display **108/208**, standard input keypad **102/202** having a number of conventional alphanumeric keys, “talk” and “end talk” buttons **104/204**, cursor control buttons **106/206**, antenna **110/210**, ear speaker **112/212**, and microphone **114/214**. Alphanumeric keys include in particular a number of special character keys, such as the “*” key and the “#” key (not explicitly identified).

Internally, wireless mobile phone **100/200** includes elements found in conventional mobile client devices, such as micro-controller/processor **302**, digital signal processor (DSP) **304**, non-volatile memory **306**, general purpose input/output (GPIO) interface **308**, and transmit/receive (TX/RX) **312** (also known as transceiver), coupled to each other via bus **314** and disposed on a circuit board **320**.

Except for the enhancements provided to operating logic **300**, and usage of one or more of the alphanumeric keys as “append key or keys”, to be described more fully below, the enumerated elements perform their conventional functions known in the art. In particular, the alphanumeric keys are employed to enter e.g. dialing prefix or prefixes, such as the long distance dialing prefix “1”, a country code or an area code dialing prefix. Cursor control buttons **106/206** are employed to interact with various menu options and selection of list elements, including selection of a phone number from a list of saved phone numbers. “Talk” button **104/204** is employed to initiate or place a call. Beside employed to store operating logic **300**, non-volatile memory **306** is also employed to store a number of working data, including a last dialed phone number. TX/RX **312** is employed to transmit and receive signals. TX/RX **312** may support one or more of any of the known signaling protocols, including but are not limited to CDMA, TDMA, GSM, and so forth. The constitutions of these elements are known, and will not be further described. As to operating logic **300**, it may be implemented in the assembly or machine instructions of processor **302**, or a high level language that can be compiled into these assem-

bly or machine languages. Voice recognition logic if included may employ any one of a number of voice recognition techniques known in the art.

Accordingly, except for the enhancements provided, phone **100/200** otherwise represents a broad range of wireless mobile phones, including both the analog as well as the digital types (of all signaling protocols). The two embodiments differ in the relative disposition of antenna **110/210** to ear speaker **112/212**, and the relative disposition of keypad **102/202** to display **108/208**. In the first embodiment, similar to conventional prior art wireless mobile phones, antenna **110** and ear speaker **112** are both disposed near top end **118a**, whereas in the second embodiment, unlike conventional prior art wireless mobile phones, antenna **210** is disposed near bottom end **218b** while ear speaker **212** is disposed near top end **218a**. Further, in the first embodiment, similar to conventional prior art wireless mobile phones, keypad **102** is disposed in the lower half **124b** of phone **100** beneath display **108**, whereas in the second embodiment, unlike conventional prior art wireless mobile phones, keypad **202** is disposed in the upper half **224a** of phone **200** above display **208**. In other words, except for enhanced operating logic **300** of the present invention, the first embodiment represents a wide range of wireless mobile phones known in the art. Similarly, except for enhanced operating logic **300** of the present invention, the second embodiment is disclosed in co pending application 09/767,526, filed on Jan. 22, 2001, entitled “A Wireless Mobile Phone with Inverted Placement of Antenna and Keypad”, which is hereby fully incorporated by reference.

Note that, a device such as wireless mobile phone **100/200** having display **108/208** necessarily has a reading orientation. By definition, the surface the display is disposed is the front surface. The front surface in turns definitively defines the left side surface, the right side surface, and top and bottom ends **118a/218a** and **118b/218b**. For example, textual data are either rendered from left to right and top to bottom, as denoted by arrows **220a** and **220b**, as in the case of the English language, or right to left and top to bottom, as denoted by arrows **222a** and **222b**, as in the case of the Hebrew language, or top to bottom and right to left, as denoted by arrows **220b** and **222a**, as in the case of the Chinese language. Thus, the manner in which textual data are rendered definitively defines which end is the top end, and which end is the bottom end.

Referring now to FIG. 4, wherein a block diagram illustrating the operating flow **400** of a first aspect of the method of the present invention, is shown. As illustrated, in accordance with the first aspect of the method of the present invention, a user enters (and phone **100/200** accepts) a dialing prefix, block **402**. As alluded earlier, in addition to e.g. the long distance dialing prefix “1” or “011”, the dialing prefix may further include a country and/or an area code. At block **404**, the user further enters (and phone **100/200** accepts) an append indicator. In one embodiment, the “#” key is employed as the append indicator. In another embodiment, the “*” key is employed instead. In yet other embodiments, other “special” character or dedicated function key may be used instead.

Thereafter, for this first aspect, at block **406**, the user enters (and phone **100/200** accepts) a dialing request. In one embodiment, the user makes the dialing request using e.g. the “Talk” button **104/204**. In response, phone **100/200**, more specifically, operating logic **300**, places a call to a callee using a last dialed phone number, preceded by the earlier entered dialing prefix, block **408**.

Accordingly, under this first aspect, a user may easily and quickly correct his/her mistake, and re-replaces a call to a callee using the last dialed phone number, but in an alternate “extended” dialing format, including a dialing prefix.