Title: METHOD FOR OPERATING A MOBILE COMMUNICATION DEVICE AND MOBILE COMMUNICATION DEVICE

Abstract: A method of operating a mobile communication device, which comprises at least two parts (11, 12, 13), which can be oriented with respect to one another in at least a first and a second position to thereby provide two different physical appearances of the mobile communication device, wherein at least a region of a display (56) and one or more navigation keys (51) of the mobile communication device are accessible to a user when the parts of the mobile communication device are oriented with respect to one another in the first position, is disclosed. In accordance with the method an array (62) of selectable contacts is displayed on the accessible region of the display of the communication device when the parts of the mobile communication device are oriented with respect to one another in the first position; one of the selectable contacts is selected by using the one or more navigation keys; and a function is executed with respect to the selected contact by means of orienting the parts of the mobile communication device with respect to one another in the second position.
METHOD FOR OPERATING A MOBILE COMMUNICATION DEVICE AND MOBILE COMMUNICATION DEVICE

TECHNICAL FIELD OF THE INVENTION

The disclosed embodiments relate to mobile communication devices and their operation. The invention relates particularly to the operation of their user interfaces in order to obtain simplified presentation, selection and/or execution of functions of the mobile communication devices.

BACKGROUND OF THE INVENTION

Devices such as mobile communication devices have user interfaces, which allow their users to receive information relating to the status of the devices and to control various functions of the mobile communication devices. For example, the user interface may present information in the form of a menu of available options, which allows the user to scroll through a list of headings, each of which may provide access to a list of sub-headings or available features, eventually selecting a desired feature.

As the mobile communication devices have become more and more complex, also their user interfaces have become more and more complex. The information presented to the user may be extensive and as a consequence the user may experience difficulties in navigating through the information in order to find information relating to the status of the device and to control various functions.

Concurrently, the mobile communication devices have become smaller and smaller, which means that the size of their
graphical user interfaces, i.e. displays, are limited, making the presentation of information yet harder.

Therefore the menu structures of the user interfaces have become more complex with more hierarchical levels, which implies that finding information and controlling functions are not only more difficult, but also more time-consuming. To find a piece of information or to control a single function may involve several interactions between the user and the mobile communication device.

SUMMARY OF THE INVENTION

It is an object of the present invention to provide a method of operating a mobile communication device, by which functions are easier to control.

It is in this respect a particular object of the invention to provide such a method, which, by combining and presenting information in a novel manner, provides for a simpler and faster handling of the mobile communication device.

It is a further object of the invention to provide such a method, which minimizes the use of numerous menus to select from.

It is still a further object of the invention to provide such a method, by which access to basic information and basic functionality is particularly simplified.

It is yet a further object of the invention to provide such a method, which is flexible, reliable, and user-friendly.

There are still further objects of the invention to provide a mobile communication device, which allows a user to carry out a method that fulfills the above objects.
According to a first aspect of the invention there is provided a method of operating a mobile communication device, which comprises at least two parts, which can be oriented with respect to one another in at least a first and a second position to thereby provide two different physical appearances of the mobile communication device, wherein at least a region of a display and one or more navigation keys of the mobile communication device are accessible to a user when the parts of the mobile communication device are oriented with respect to one another in the first position, is disclosed. In accordance with the method an array of selectable contacts is displayed on the accessible region of the display of the communication device when the parts of the mobile communication device are oriented with respect to one another in the first position; one of the selectable contacts is selected by using the one or more navigation keys; and a function is executed with respect to the selected contact by means of orienting the parts of the mobile communication device with respect to one another in the second position.

According to a second aspect of the invention there is provided a mobile communication device, which implements the above method in response to user selections and commands.

According to a third aspect of the invention there is provided a method of operating a mobile communication device, which comprises at least two parts, which can be oriented with respect to one another in at least a first and a second position to thereby provide two different physical appearances of the mobile communication device, wherein at least a region of a display and one or more navigation keys of the mobile communication device are accessible to a user when the parts of the mobile communication device are oriented with respect to one another in the first position, is disclosed. In accordance with the method
an array of selectable functions is displayed on the accessible region of the display of the communication device when the two parts of the mobile communication device are oriented with respect to one another in the first position; one of the selectable functions is selected by using the navigation key; and the selected function is executed by means of orienting the two parts of the mobile communication device with respect to one another in the second position.

According to a fourth aspect of the invention there is provided a mobile communication device, which implements the method according to the third aspect of the invention in response to user selections and commands.

Various embodiments of the invention are set out in the appended dependent claims.

The disclosed embodiments provide for an improved operation of the mobile communication device. The user interface facilitates the handling and provides more intuitive, easily understandable, and faster operation.

Further characteristics of the invention and advantages thereof will be evident from the following detailed description of embodiments of the invention and the accompanying Figs. 1-10, which are given by way of illustration only, and thus are not limitative of the disclosed embodiments.

**BRIEF DESCRIPTION OF THE DRAWINGS**

Figs. 1-4 illustrate, schematically, a mobile communication device according to an embodiment of the present invention. Figs. 1a-c illustrate the device in front, side, and back elevation views in a first or ready state; Figs. 2a-c illustrate the device in front, side, and back elevation views in a second
or active state; Figs. 3a-c illustrate the device in front, side, and back elevation views in a third or standby state; and Fig. 4 illustrates housing parts of the device in an exploded view.

Fig. 5 illustrates, schematically, the mobile communication device in the second or active state in greater detail.

Fig. 6a illustrates, schematically, a software structure as used for displaying a two-directional menu on a display of the mobile communication device of Figs. 1-5; and Fig. 6b is a table of icons and their description as used in the menu structure of Fig. 6a.

Figs. 7a-d illustrate, schematically, a user interface of the mobile communication device of Figs. 1-5 at various stages during the process of placing of a call.

Figs. 7e-f illustrate, schematically, special functions of the user interface of the mobile communication device of Figs. 1-5.

Figs. 8a-c illustrate, schematically, the user interface of the mobile communication device of Figs. 1-5 at various stages during the process of preparing and sending a message.

Figs. 9a-d illustrate, schematically, the user interface of the mobile communication device of Figs. 1-5 at various stages during the process of calling back a missed call.

Figs. 10a-c illustrate, schematically, the user interface of the mobile communication device of Figs. 1-5 at various stages during the processes of adding a new person to a list of contacts and of opening an existing contact.
DETAILED DESCRIPTION OF EMBODIMENTS

With reference to Figs. 1-4, a mobile communication device of an embodiment of the present invention has a product architecture divided into three main parts - an interaction part 11, a first base part 12, and a second base part 13. The interaction part 11 slides in the first base part 12 and the first base part 12 slides in the second base part 13 to thereby transform the mobile communication device between three different physical as well as operational states during use.

Figs. 1a-c illustrate the device in a first or ready state, Figs. 2a-c illustrate the device in a second or active state, and Figs. 3a-c illustrate the device in a third or standby state.

The active state is reached from the ready state by sliding the interaction part 11 upwards, e.g. by pushing a protrusion known as a push bump 15 upwards by a thumb or similar. Similarly, the ready state is reached from the active state by sliding the interaction part 11 back. The movement between the ready and active states is associated with different operational actions of the mobile communication device, which will be further described below.

The third or standby state is reached from the ready state by pressing the first 12 and second 13 base parts together. The pressing together is made achievable by pressing two release buttons 16 on the sides of the mobile communication device thereby activating a release mechanism. During the pressing together, the first base part 12 slides, together with the interaction part 11, into the second base part 13, while a flexible rubber section 14 is compressed, until a locked position is reached. The compression of the rubber section 14 is
easily seen in Fig. 3b. In order to transform the mobile communication device back to the ready state the two release buttons 16 are pressed to once more activate the release mechanism, and the ready state is automatically reached: the mobile communication device extends oneself in a smooth movement caused by the flexible rubber section 14, while returning to its decompressed condition. The movement between the ready and standby states is associated with different operational actions of the mobile communication device, which will be further described below.

Fig. 4 illustrates the interaction part 11 and the first 12 and second 13 base parts in an exploded view. The interaction part 11 comprises, inter alia, several parts of a user interface of the mobile communication device: input keys, a display, and an earpiece. The first base part 12 comprises an RF unit, an antenna, and a loudspeaker; and the second base part 13 comprises baseband circuitry, the above mentioned release mechanism, a battery, a SIM-card cradle and remaining parts of the user interface: a microphone and optionally a vibrator. It shall, however, be appreciated that the division of the components among the parts 11, 12, and 13 may alternatively be made in a plurality of other manners.

Fig. 5 illustrates main parts of the user interface in more detail. The user interface comprises input devices such as navigation keys 51; a no/end key 53; an OK/send key 53; alphanumeric keys 54; and the above mentioned microphone 55. The navigation keys 51 include up/down navigation keys 51a, a horizontal navigation key 51b, a cancel key 51c, a soft key 51d, and the push bump 15. The output devices comprise the display 56 and the earpiece 57.
The mobile communication device is provided with software for displaying a two-directional menu 58 on the display 56, which represents a novel composition with a novel principle of interaction. It provides the user with immediate navigation, which is strongly linked to a physical interaction. The user navigates through two perpendicular arrays containing selectable functions and selectable contacts. In the vertical array the user selects a function, e.g. call or message, and in the horizontal array the user selects a contact (or a particular function, which will be described below). By transforming the mobile communication device into the active state by aid of the push bump 15 the selected combination is executed (details will be given below). Hereby, also the transformation of the mobile communication device constitutes part of the input user interface of the mobile communication device. The invention provides tangible use and immediate software interaction. In the following, these interaction aspects will be disclosed in detail.

Fig. 6a illustrates, schematically, a software structure as used for displaying the two-directional menu 58 on the display 56 of the mobile communication device and Fig. 6b is a table of icons and their description as used in the menu structure.

The software structure is a two-dimensional matrix, through which the user may scroll or navigate using the up/down navigation keys 51a and the horizontal navigation key 51b. By using the up/down navigation keys 51a vertical scrolling or navigation is achieved and by pressing or sliding over left-hand and right-hand sides of the horizontal navigation key 51b horizontal scrolling or navigation is achieved. The navigation keys may be exchanged for joystick, track ball, roller or other
control devices (none of which being shown here). Touch screen functionality may alternatively be used.

By vertical scrolling a function is selected from a vertical array 61, e.g. a message register containing incoming and outgoing messages, a call register containing missed, incoming and outgoing calls, a call function, a message function, a details function allowing contacts to be added, deleted, and edited, a history function containing communication (calls and messages) information divided by contacts, and a settings function allowing e.g. time, alarm, ring tones, and language to be set. The functions may be divided into basic and advanced functions, e.g. the first four functions may be basic functions and the latter three functions may be advanced functions.

Further functions such as a music playing function, a radio receiver function, and a picture shooting function may be provided. Similarly several separate message functions such as e.g. SMS, MMS, facsimile, and e-mail message functions, may be provided.

To avoid being limited to a default telephone number and/or the complexity of selecting telephone number in a further menu for the call function, there may be provided separate functions for calling mobile and fixed-line or wire telephone numbers and/or for calling work telephone numbers and private telephone numbers.

By horizontal scrolling a contact is selected from one of a plurality of horizontal arrays 62. For the functions call, message, details, and history the contacts are preferably arranged in alphabetical order, whereas for the message and call registers, the contacts are preferably arranged in temporal,
i.e. chronological, order with the last incoming or outgoing
message and the last missed, incoming or outgoing call first.

Each function and each contact are visualized by a respective
icon as shown in the Figures. When the mobile communication
device is turned on or activated after having not been used for
some time, the call function (or other function) may be selected
as default. Either the first contact in the list of contacts for
the call function or no contact at all may be selected as a
default setting.

Typically, the array 61 of functions and one of the arrays 62 of
contacts is displayed at a time, i.e. the array 62 of contacts
belonging to the selected function. However, in an alternative
version a two-dimensional matrix such as the one depicted in
Fig. 6a is actually displayed, possibly with the array 62 of
contacts belonging to the selected function differentiated from
the other arrays of contacts. When the settings function is
selected, no row of contacts is displayed.

Typically, the function and contact icons are moved during
scrolling and a function is selected by moving its icon
vertically to a particular position of the display, i.e. the
position at the intersection of the vertical and horizontal
arrays as shown e.g. in Fig. 5. Similarly a contact is selected
by moving it to the intersection position during the horizontal
scrolling. Alternatively a function and a contact are selected
by highlighting them or by marking them in any other manner,
i.e. by a cursor or the like. The term selection as used in the
present context should thus be understood as differentiating
them from other functions and contacts. Subsequent to this, a
function is executed based on the selected function and contact
by means of a further user command.
Further, the scrolling may be closed ended or open ended or cyclic (so that an "endless" circular scrolling is enabled). Such cyclic scrolling may be enabled in one direction only, e.g. to the right in Fig. 5.

When having selected a basic function and a contact, the function is executed with respect to the contact by transforming the mobile communication from the ready state into the active state by aid of the push bump 15. If the function is the call or call register function the selected contact is called and if the function is the message or message register function, message editor is opened with the selected contact as addressee allowing the user to prepare and send the message.

This two-directional menu structure thus solves the problem of going in and out of menu levels, i.e., going between a first and a second level, back and forth, by merging the menu levels into one level thereby offering selection of functions and contacts simultaneously in a single menu. The advantage is that there is only one level, i.e. one user interface menu, which the user needs to relate to, thereby providing a faster and simpler navigation, selection and operation process.

It shall be appreciated that the message function may comprise several message services such as e.g. SMS, MMS, facsimile, and e-mail services. In such instance there may be provided possibilities to define a default message function for each contact that should be used in the above process if more than one message address is specified for the contact.

Similarly, the call and message functions may be merged to one single call/message service and in such circumstances there may be provided possibilities to define a default action (i.e. call or message) for the call/message function for each contact that
should be used in the above process. If the message function is an SMS, MMS, or combined SMS/MMS function, the default action can be defined also in case the contact only contains a single mobile telephone number since the mobile telephone number constitutes the address for both a call and an SMS/MMS message.

Generally, if there are several actions that can be performed for a single command, i.e. placing a fixed-line telephone call, placing a mobile telephone call, opening an SMS editor, opening an MMS message editor, opening a combined SMS/MMS editor function, opening a facsimile message editor, opening an instant messaging editor and/or opening an e-mail message editor, each being associated with a respective address type, i.e. a fixed-line telephone number, a mobile telephone number, an instant messaging address and/or an e-mail address, they could be put in a priority order as a user setting for a group of contacts. Then, the single command triggers one of the actions to be performed with respect to a selected contact, where the action to be performed is the action of highest priority that can be performed with respect to the contact, i.e. that is associated with an address type, which is among the address type or types associated with the addresses of the selected contact. For example, if the priority order is selected to be: opening an SMS editor, placing a fixed-line call, placing a mobile phone call, and opening an instant messaging editor in falling order, the action to be performed in response to the single command is opening the SMS editor provided that the selected contact has a mobile telephone number. If the selected contact only has a fixed-line telephone number, a facsimile number, and an e-mail number, the action to be performed in response to the single command is placing a fixed-line call to the selected contact.
Some users, i.e. young users, almost never make telephone calls; they almost solely send messages. Therefore, some models of mobile communication devices may contain a general user setting to allow the opening of SMS editor instead of placing a call as default. The user may then adjust some contacts so that the preferred channel of communication is voice.

A mobile communication device containing a prior art list of contacts, from which a user may select a given contact and then place a call by pressing a call, OK or send button, may thus be adjusted according to this aspect of the invention so that the default function will be to open a message editor instead. If the user wants to call the person, this would be possible through an option list displayed in response to a user command after having selected the contact in the lists of contacts.

The remaining functions in the list of functions 61 of Fig. 6a are advanced functions and can preferably only be selected when the mobile communication already is in the active state. In the ready state these functions may be differentiated, e.g. shadowed, or not displayed at all.

For the functions call, message, and detail a new person contact is provided at the left-hand side of the vertical function list when the mobile communication device is turned on or activated. Choosing this contact and the call function the software prompts, upon transformation of the mobile communication device to the active state, the user to key the telephone number the user wants to call. After this the call can be placed by pressing the OK/send key.

Similarly, choosing the new person contact and the message function the software prompts, upon transformation of the mobile communication device to the active state, the user to key the
telephone number, to which the user wants to send a message. Thereafter the message can be prepared and subsequently transmitted in any known fashion.

If the message function contains separate message functions such as e.g. SMS, MMS, facsimile, and e-mail message functions, the mobile communication device may have a default setting to run a message application of either one of the message functions upon transformation of the mobile communication device to the active state.

If the call and message functions is merged to one single call/message service as depicted above, the mobile communication device may have a default setting to either place a call or to open a message editor upon transformation of the mobile communication device to the active state.

If the new person contact and the details function are selected, and the combination is executed, e.g. by pressing the OK/send button 53, the software adds a new contact to the list of contacts and the contact is opened allowing the user to fill in the contact.

When having selected a particular contact first and having thereafter scrolled upwards to the call register there may be different options on how to handle the scrolling. If the particular contact exists in the call register, it may be selected automatically, and if not, the first contact in the list may be selected or no contact at all may be selected. Alternatively, the first contact in the list is selected or no contact at all is selected. When having selected a particular contact in the message or call register, this particular contact is preferably kept selected when scrolling down to any of the functions call, message, details, and history.
To answer a call the mobile communication device is transformed to the active state. If the user does not want to answer the call the cancel key is pressed. If the mobile communication device is equipped to receive a number presentation, the calling party can be identified before determining whether the call should be answered or not.

To place a call the user may perform in the manner described below with reference to Figs. 7a-d, which illustrate, schematically, the user interface of the mobile communication device at various stages during the process of placing of the call. The call function is selected whereupon the list of contacts appears as a row to the right of the call function icon. This stage of the process is shown in Fig. 7a. Then, the horizontal navigation key is used to scroll among the contacts of the contact list as shown in Fig. 7b. When a particular contact is selected, this contact is shown at the intersection of the horizontal and vertical bars. In the illustrated case the contact "Alan Johnson" is selected. This stage is illustrated in Fig. 7c. Finally, the call is placed by transforming the mobile communication device to the active state as shown in Fig. 7d.

It shall be appreciated that the software of the mobile communication device provides for scrolling of functions and contacts in any order, e.g. the above call may be placed by first choosing the contact by horizontal scrolling and then choosing the function, i.e. the call function, by vertical scrolling – all in a single menu.

Fig. 7e illustrates a particular function, which is optionally implemented. When scrolling through the list of contacts the soft key 5Id provides the possibility to select other telephone numbers than a default telephone number for a given contact if such telephone numbers exist. If other telephone numbers than
the default telephone number exist a drop-down list or a pop-up window is shown upon pressing the soft key 5I'd and another telephone number can be selected. The scrolling through the list of alternative telephone numbers may e.g. be performed by pressing the soft key 5I'd repeatedly.

Fig. 7f illustrates another function, which is optionally implemented. When scrolling through the list of contacts some of the contact icons may be differentiated in appearance e.g. by a background glow to indicate that these contacts are frequently called contacts. The software may be provided for registering the call pattern constantly and can thereby automatically adjust the differentiation of the contact icons to match the current pattern.

To prepare and send a message, the user may perform in the manner described below with reference to Figs. 8a–c, which illustrate, schematically, the user interface of the mobile communication device of Figs. 1–5 at various stages during the process of preparation and transmission of the message. The horizontal navigation key is used to scroll among the contacts of the contact list as is shown in Fig. 8a. When a particular contact is selected this contact is shown at the intersection of the horizontal and vertical bars. In the illustrated case the contact "Alan Johnson" is selected. However, the message function has not been selected yet. Actually the call function icon is located at the intersection of the horizontal and vertical bars. The vertical navigation keys are used to scroll among the functions and in Fig. 8b is shown a stage, in which the message function has been selected, and is thus located in the intersection of the horizontal and vertical bars. Finally, the message application is launched by transforming the mobile communication device to the active state as is shown in Fig. 8c.
As a result a message editor is shown on the display and a message can be prepared using the alphanumeric keys. When the message has been prepared it is sent to the selected contact by pressing the OK/send key. Obviously, the function can be selected before the contact as was described with reference to Figs. 7a-d.

All missed calls are registered and can be found under the call register function. To indicate that there exists a new missed call, the call register icon is differentiated e.g. by an animated frame such as a glowing edge and there is displayed a text informing the user of how many missed calls there are. Fig. 9a illustrates schematically the user interface of the mobile communication device at this stage. The differentiation of the icon and the text are displayed until the user executes the call register function, whereupon a list of contact icons with a call history including the contacts with missed calls is displayed in the horizontal array. If there is more than one missed call from a single contact, a contact icon for that contact may appear at several positions in the list, which is, as described above, ordered chronologically. To call back a missed call, the user scrolls horizontally as shown in Fig. 9b until he/she finds the contact icon associated with the missed call. When the contact icon is located at the intersection of the horizontal and vertical bars as shown in Fig. 9c the call is placed by transforming the mobile communication device to the active state. In Fig. 7d the mobile communication device is in its active state and the display shows the action being performed.

The physical appearance of the mobile communication device when transformed into the active state is suitable for the call and message preparing functionality: the device becomes longer to provide a distance between the earpiece 57 and the microphone 55
that is approximately adapted to the distance between the ear and the mouth of a user. Further, the no/end key 53, the OK/send key 53, and the alphanumeric keys 54 are exposed when the interaction part 11 slides out from the first base part 12 so that they can be used e.g. for preparing a message.

The functionality of adding a new contact to the list of contacts is found in the details function. Since this function is an advanced function the user has to start with transforming the mobile communication device to the active state without having selected a combination of a function and a contact as shown in Fig. 10a. The user scrolls through the list of functions by using the up/down navigation keys to select the details function and scrolls through the list of contacts by using the horizontal navigation key to select the new person function. When the details function and the new person contact is located at the intersection of the horizontal and vertical bars as shown in Fig. 10b, a form for adding a new person to the lists of contacts is displayed by pressing the OK/send key 53.

If on the other hand an existing contact is selected as shown in Fig. 10c ("Alan Johnson"), this contact is opened by pressing the OK/send key 53. When opened the user may use the soft key to select between editing the contact and deleting it.

Next, the functionality of the third transformation state, the standby state, of the mobile communication device will be overviewed. As can be seen from Figs. 1-3, the mobile communication device becomes smaller or more compact, i.e. shorter, when being transformed to the standby state. Further, the flexible rubber section 14 is slided over the navigation keys 51 to protect them. The no/end key 53, the OK/send key 53, and the alphanumeric keys 54 are being covered and protected by the interaction part 11 in this as well as in the ready state.
Preferably, the mobile communication device is set to a standby mode when being transformed to the standby state. The standby mode indicates that the device is not being capable of being used. No calls or messages will be received, no calls can be placed, and no messages can be sent. (The RF functionality may or may not be switched off.) When the mobile communication device is transformed into the standby state, its display informs the user of the action, and afterwards the display is blank. The mobile communication device is preferably indicating discretely that it is powered on and being in the standby state.

The physical transformation of the mobile communication device when placed in the standby state is suitable for the standby functionality: the device becomes compact and all keys are protected.

Alternatively, the mobile communication device is set to another mode, such as flight mode (the RF functionality is switched off) or a meeting or silent mode (the ring signal is switched off) when being transformed to the standby state.

If the mobile communication device is provided with applications not related to telephony, such as e.g. a music player, a radio tuner, or a camera, these may or may not be operable in the standby state.

The two-directional menu and the transformation of the mobile communication device between different and operational states according to the present invention bring the functionality out to the surface of the mobile communication and thus closer to the user. The invention provides for tangible use and immediate software interaction that supports and compliments the tangibility. The transformation in length is intuitive: the longer the mobile communication device is made, the more active
mode is entered. Further, the operation mode can readily be found by visual or tactile inspection of the mobile communication device.

It shall be appreciated that while the illustrated embodiment comprises three parts, which can be oriented with respect to one another in three different positions to thereby provide three different physical appearances and corresponding operational states of the mobile communication device, the invention is not limited to such version. The number of parts may be two or larger than three, and the number of physical and operational states of the mobile communication device may be two or larger than three, each being associated with a respective operational mode. For instance, four physical states of the mobile communication device may correspond to active, ready, silent, and standby modes as defined above. The parts may be oriented with respect to one another in different positions by means of sliding movements, twisting movements, folding movements, or any combination thereof.

While the above embodiment contains numerous improvements and novel features, most of them can be used separately, in other contexts, or in other kinds of mobile communication devices. It shall thus be appreciated by a person skilled in the art that various changes may be made to the above embodiment without departing from the broader spirit and scope of the invention as set forth in the appended claims. The description and drawings are accordingly to be regarded in an illustrative rather than a restrictive sense.
1. A method of operating a mobile communication device, which comprises at least two parts (11, 12, 13), which can be oriented with respect to one another in at least two different positions to thereby provide two different physical appearances of the mobile communication device, wherein at least a region of a display (56) and one or more navigation keys (51) of said mobile communication device are accessible to a user when the at least two parts of the mobile communication device are oriented with respect to one another in at least a first of the two different positions, said method being characterized by the steps of:

- displaying an array (62) of selectable contacts on the accessible region of the display of said communication device when the at least two parts of the mobile communication device are oriented with respect to one another in the first one of the at least two different positions;

- selecting one of the selectable contacts by using said one or more navigation keys; and

- executing a function with respect to the selected contact by means of orienting the at least two parts of the mobile communication device with respect to one another in a second one of the two different positions.

2. The method of claim 1 wherein a call is placed to the selected contact by means of orienting the at least two parts of the mobile communication device with respect to one another in a second one of the two different positions.

3. The method of claim 1 or 2 wherein an incoming call is answered by means of orienting the at least two parts of the mobile communication device with respect to one another in a second one of the two different positions.
mobile communication device with respect to one another in the second one of the two different positions.

4. The method of any of claims 1-3 wherein

- an array (61) of selectable functions is displayed on the accessible region of the display of said communication device when the at least two parts of the mobile communication device are oriented with respect to one another in the first one of the at least two different positions;

- one of the selectable functions and one further of the selectable contacts are selected by using said one or more navigation keys; and

- executing said selected one of said selectable functions for said selected one further of said selectable contacts by means of orienting the at least two parts of the mobile communication device with respect to one another in the second one of the two different positions.

5. The method of claim 4 wherein said selected one of said selectable functions is a message function and said execution of said selected one of said selectable functions for said selected one further of said selectable contacts is the displaying of a message preparation area for preparation of a message with said selected one of said selectable contacts as the intended recipient.

6. The method of any of claims 1-5 wherein said communication device has a first length when the at least two parts of the mobile communication device are oriented with respect to one another in the first of the two different positions and a second length when the at least two parts of the mobile communication device are oriented with respect to one another in the second of the two different positions.
the two different positions, said second length being greater
than said first length.

7. The method of any of claims 1-6 wherein the distance between
a microphone (55) and an earpiece (57) of the mobile
communication device is altered when the at least two parts of
the mobile communication device are oriented with respect to one
another in the second of the two different positions to thereby
provide for a suitable location of the microphone and earpiece,
which is adapted to the user of the mobile communication device
during a call.

8. The method of any of claims 1-7 wherein user input keys (54)
of the mobile communication device are made accessible to the
user of the mobile communication device when the at least two
parts of the mobile communication device are oriented with
respect to one another in the second of the two different
positions to thereby provide for a more advanced control of the
mobile communication device.

9. The method of any of claims 1-8 wherein the at least two
parts of the mobile communication device are oriented with
respect to one another in the second of the two different
positions by means of a sliding movement, a twisting movement, a
folding movement, or any combination thereof.

10. The method of any of claims 1-8 wherein the at least two
parts of the mobile communication device are oriented with
respect to one another in the second of the two different
positions by means of sliding the at least two parts in relation
to one another.

11. The method of any of claims 1-10 wherein said at least two
parts is oriented with respect to one another in a third
position different from said first and second positions to thereby provide a third physical appearance of the mobile communication device different from said two different physical appearances.

12. The method of claim 11 wherein said display and said one or more navigation keys of said mobile communication device are hidden when the at least two parts of the mobile communication device are oriented with respect to one another in the third position.

13. The method of claim 11 wherein the mobile communication device is made shorter by means of orienting the at least two parts of the mobile communication device with respect to one another in the third position.

14. The method of claim 11 wherein the mobile communication device is put into a standby mode by means of orienting the at least two parts of the mobile communication device with respect to one another in the third position, in which standby mode the mobile communication device is not capable of receiving or placing calls.

15. The method of any of claims 1-14 wherein

- the mobile communication device comprises first, second, and third parts (11, 12, 13);

- the first part is caused to slide relative the second and third parts to orient the three parts of the mobile communication device with respect to one another in the second position; and
- the first and second parts are caused to slide relative the
third part to orient the three parts of the mobile communication
device with respect to one another in a third position, wherein

- said communication device is put into a selected operational
state when the three parts of the mobile communication device
are oriented with respect to one another in the third position.

16. A mobile communication device, which comprises at least two
parts (11, 12, 13), which can be oriented with respect to one
another in at least two different positions to thereby provide
two different physical appearances of the mobile communication
device, characterized in that at least a region of a display
(56) and one or more navigation keys (51) of said mobile
communication device are accessible to a user when the at least
two parts of the mobile communication device are oriented with
respect to one another in at least a first of the two different
positions, wherein said mobile communication device is provided
for (A) displaying an array (62) of selectable contacts on the
accessible region of the display when the at least two parts of
the mobile communication device are oriented with respect to one
another in the first one of the at least two different
positions; and (B) in response to (i) a user selection of one of
the selectable contacts via said one or more navigation keys and
(ii) orientation of the at least two parts of the mobile
communication device with respect to one another in a second one
of the two different positions, executing a function with
respect to the selected contact.

17. A method of operating a mobile communication device, which
comprises at least two parts (11, 12, 13), which can be oriented
with respect to one another in at least two different positions
to thereby provide two different physical appearances of the
mobile communication device, wherein at least a region of a
display (56) and a navigation key (51) of said mobile
communication device are accessible to a user when the at least
two parts of the mobile communication device are oriented with
respect to one another in at least a first of the two different
positions, said method being characterized by the steps of:

- displaying an array (61) of selectable functions on the
  accessible region of the display of said communication device
  when the at least two parts of the mobile communication device
  are oriented with respect to one another in the first one of the
two different positions;

- selecting one of the selectable functions by using said
  navigation key; and

- executing the selected function by means of orienting the at
  least two parts of the mobile communication device with respect
  to one another in a second one of the two different positions.

18. The method of claim 17 wherein

- the selected function is a call or a message function; and

- the execution of said selected function is the placing of a
  call to a contact or the displaying of a message preparation
  area for preparation of a message with a contact as the intended
  recipient.

19. A mobile communication device, which comprises at least two
parts (11, 12, 13), which can be oriented with respect to one
another in at least two different positions to thereby provide
two different physical appearances of the mobile communication
device, wherein at least a region of a display (56) and a
navigation key (51) of said mobile communication device are
accessible to a user when the at least two parts of the mobile
communication device are oriented with respect to one another in
at least a first of the two different positions, wherein said
mobile communication device is provided for (A) displaying an
array (61) of selectable functions on the accessible region of
the display when the at least two parts of the mobile
communication device are oriented with respect to one another in
the first one of the two different positions; and (B) in
response to (i) a user selection of one of the selectable
functions via said one or more navigation keys and (ii)
orientation of the at least two parts of the mobile
communication device with respect to one another in a second one
of the two different positions, executing the selected function.
FIG. 5
New person: When combined with the call function the software prompt you to key in the number you wish to call.
New person: When combined with the message function the software prompt you to key in the phone number you wish to write.
New person: When combined with the edit function you can add a new contact to the phone book.

**FIG. 6A**

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<td>Contact.</td>
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<td>Call register: Contains all missed, in and outgoing calls.</td>
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<td>Out</td>
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<td>Call function.</td>
<td>Message function.</td>
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<td>Details function: Contains all contact info. Where contacts are added, deleted or edited.</td>
<td>History function: Contains all communication info, both calls and messages divided by contacts</td>
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<td>Settings function: time &amp; alarm, tones, language, memory and enhancements.</td>
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**FIG. 6B**
### A. CLASSIFICATION OF SUBJECT MATTER

According to International Patent Classification (IPC) or to both national classification and IPC:

- INV. H04M1/247
- H04M1/2745
- H04M1/02
- ADD. H04M1/725

### B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

- H04M

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

- Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
  - EPO-Internal

### C. DOCUMENTS CONSIDERED TO BE RELEVANT

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<td>GB 2 389 Oil A (NIPPON ELECTRIC CO [JP]; NIPPON ELECTRIC CO) 26 November 2003 (2003-11-26) abstract page 4, line 10 - page 5, line 20 page 11, lines 23-25 page 17, line 18 - page 18, line 18 figures 1-10</td>
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Further documents are listed in the continuation of Box C

See patent family annex

- 'A' document defining the general state of the art which is not considered to be of particular relevance
- 'E' earlier document but published on or after the international filing date
- 'L' document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
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- 'T' later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- 'X' document of particular relevance, the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
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- 'S' document member of the same patent family

Date of the actual completion of the international search: 26 November 2007

Date of mailing of the international search report: 05/12/2007

Name and mailing address of the ISA/IB: Pohl, Martin

European Patent Office, P B 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel (+31-70) 340-2040, Tx 31 651 epo nl, Fax (+31-70) 340-3016

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<td>EP 1 298 891 A (TOKYO SHIBAURA ELECTRIC CO [JP]) 2 April 2003 (2003-04-02)</td>
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<td>GB 2 387 988 A (NIPPON ELECTRIC CO [JP]) 29 October 2003 (2003-10-29)</td>
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<tr>
<td>GB 2389011 A</td>
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<td>CN 1447575 A</td>
<td>08-10-2003</td>
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<td>HK 1059520 A1</td>
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<td>JP 2003289348 A</td>
<td>10-10-2003</td>
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<td>US 2004204202 A1</td>
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<td>UO 03077097 A1</td>
<td>18-09-2003</td>
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<td>JP 2003119078 A</td>
<td>11-04-2003</td>
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<td>US 2003083022 A1</td>
<td>01-05-2003</td>
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<tr>
<td>GB 2387988 A</td>
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<td>CN 1461135 A</td>
<td>10-12-2003</td>
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<td>JP 2003319044 A</td>
<td>07-11-2003</td>
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<td>US 2003202656 A1</td>
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<td>HK 1044259 A1</td>
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