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(54) Controlling a common terminal by using a memory card

(57) There is provided a system and method for controlling a common terminal 20, 30, 40, 50, wherein a memory card 4 of large memory size is used to read and write necessary data together with an identifier. The system includes a card reader/writer 10, a controller 20 for controlling data transmission between the reader/writer 10 and a card interface 40, the card interface 40 interfacing the controller with a central processing unit 30, the central processing unit 30 having a predetermined control program to perform the control function of the controller 20, and a keyboard 50 for applying key data to the processing unit 30. In use, if the identifier matches a stored code, the terminal performs a function according to the key data and data stored in the card. The result of the function may be written in the card memory. The terminal may be a facsimile or copying machine.

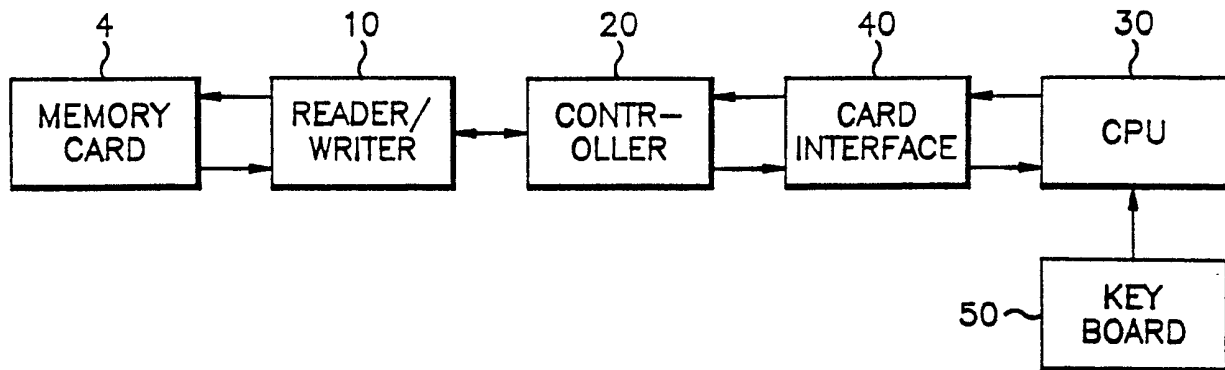
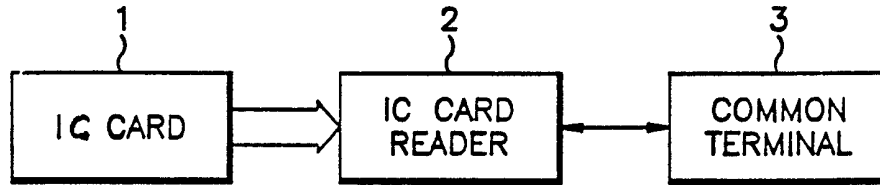


FIG. 3



(PRIOR ART)
FIG. 1

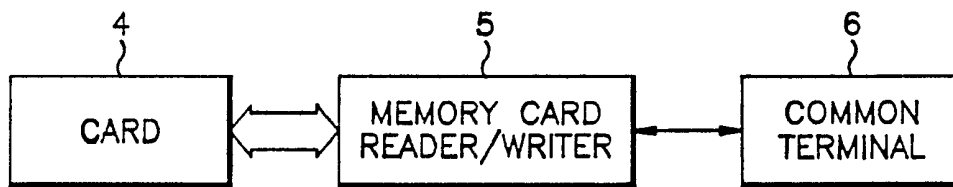


FIG. 2

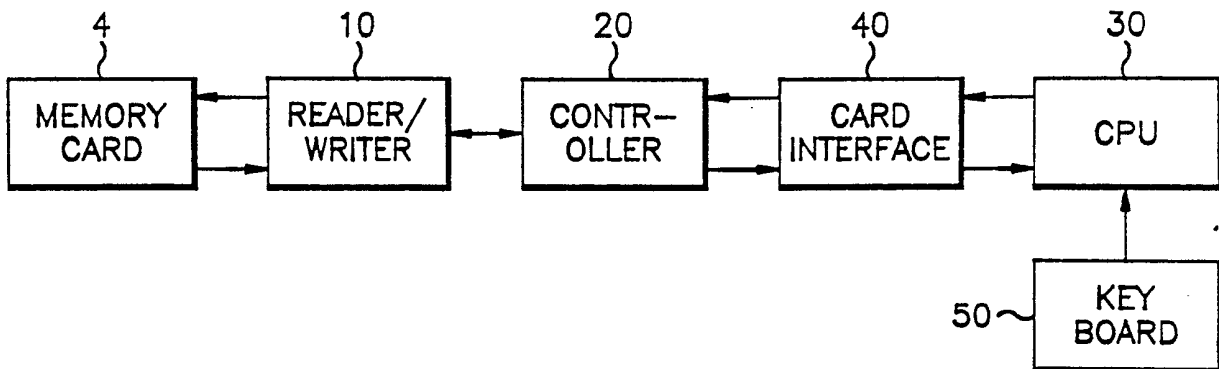


FIG. 3

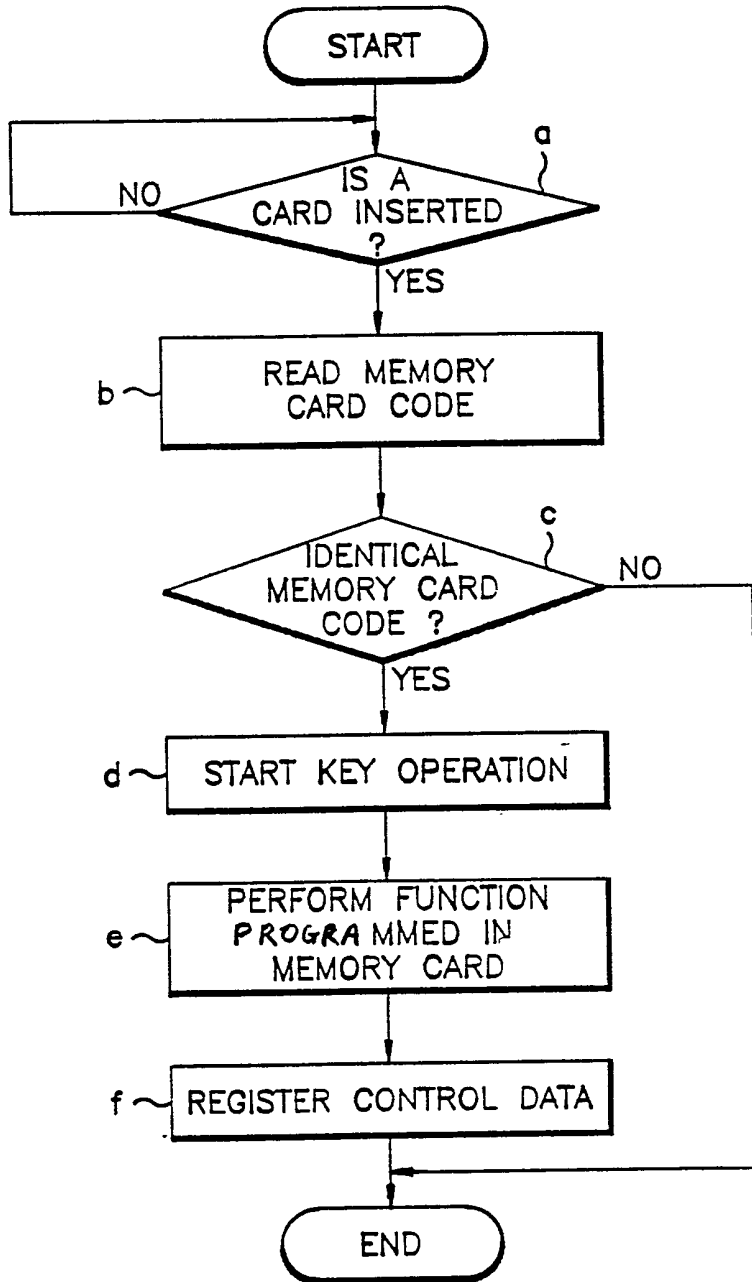


FIG. 4

- 1 -

**A SYSTEM AND METHOD FOR CONTROLLING A COMMON TERMINAL BY
USING A MEMORY CARD**

The present invention concerns a system and method
5 for controlling a common terminal for a plurality of users
by using a memory card.

Presently, there is a growing tendency for a single
office automation machine such as a facsimile, copying
10 machine, etc. to be commonly used by multiple users.
Hence, it is necessary to control each of the users that
use the commonly used machine. Such control may include
limitations of the time of use of the machine and possible
functions thereof. Accordingly, there has been developed
15 an integrated circuit card (IC card) to identify each user
of the commonly used terminal.

Referring to Figure 1 of the accompanying
diagrammatic drawings, a conventional system for
20 controlling a common terminal includes an IC card 1, a
reader 2 for reading the IC card, and a common terminal 3.
The IC card 1 contains an identifier to identify each
user. All the specific requirements or data concerning
each identifier are stored in the common terminal 3 that
25 may be operated by the IC card 1 via the IC card reader 2.

In such a conventional system, when the common
terminal 3 is replaced by another common terminal or the
system is down, all of the data concerning the IC cards
30 needs to be re-input to the common terminal, because each
IC card only contains an identifier. Moreover, the common
terminal needs to be equipped with a memory of large
capacity to store all of the data concerning many IC
cards. Of course, new data may not be written in the IC
35 card, and the identifier cannot be changed.

Preferred embodiments of the present invention aim to provide a system and method for controlling a common terminal, wherein a memory card of large memory size is used to read and write necessary data together with an
5 identifier.

According a first aspect of the present invention, there is provided a system for controlling a common terminal by a memory card, the system comprising:

10 memory card means having a memory region to read and write an identifier as well as various programmed functional data for the use of the common terminal;

reading and writing means coupled to said memory card means, for reading and writing data from and into said
15 memory card means;

a controller coupled to said reading and writing means, for controlling data transmission between said reading and writing means and a card interfacing means;

20 said card interfacing means, arranged to interface said controller with a central processing unit;

said central processing unit having a predetermined control program to perform the control function of said controller; and

25 a keyboard for supplying to said central processing unit key data corresponding to functions of which data is stored in said memory region of said memory card means.

The invention includes a method of controlling a common terminal by use of a system according to the above
30 described first aspect, comprising the steps of:

reading a code of said memory card means inserted into said reading and writing means to check the validity of said memory card means;

performing the function of said memory card means corresponding to key data generated by operating said keyboard when the code proves to be valid; and

5 registering the result of performing the function of said memory card as control data into said memory card.

The invention also includes a system for control of a common device by a plurality of memory devices, the system comprising:

10 a plurality of memory devices each having a memory which stores an identifier and data to control operation of said common device; and

reading and writing means for reading data from and writing data into said memory devices.

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Preferably, the data which is written into said memory devices can be used to control the common device in subsequent operations of the common device.

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The invention includes a system for control of one or more common terminals by use of any one of a plurality of memory devices, each having an identification code and containing data to control operating functions of the common terminal(s), wherein in use the identification code is compared with a stored code and if the identification code matches the stored code then the common terminal(s)

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may be operated in accordance with said control data.

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A system according to the present invention, said system arranged to control a common terminal by using a memory card may include: a memory card having a memory region of large capacity to read and write; a reader and writer for reading and writing data from and into the memory card; a controller for controlling the data

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transmission between the reader and writer and a card

interface; a central processing unit (CPU) having a predetermined control program to perform the control function of the controller; said card interface interfacing the controller with the CPU; and a keyboard
5 for applying key data to the CPU.

For a better understanding of the invention and to show how the same may be carried into effect, reference
10 will now be made, by way of example only, to Figures 2 to 4 of the accompanying diagrammatic drawings, in which:

Figure 2 is a block diagram of one example of a system embodying the invention;
15

Figure 3. is a more detailed block diagram of the system of Figure 2; and

Figure 4 is a flow chart illustrating an example of
20 the operation of the system of Figure 2.

The system of Figure 2 includes a common terminal 6 for use by many users. A memory card 4 has a memory region to read and write. A reader/writer 5 reads data
25 stored in the memory card 4 and provides it to the common terminal 6 and writes data produced from the common terminal 6 into the memory card 4.

The memory card 4 has an identifier code as well as
30 various functional data used to adapt the common terminal 6 to perform a function in accordance with the functional data. Thus, if the memory card 4 is inserted into the reader/writer 5, the common terminal 6 may be operated by selecting the keys thereof to perform a function which is
35 stored in the memory card 4. For example, if the common

terminal is a facsimile, and a one-touch dial key is pressed, the memory card 4 with a stored one-touch dial key table enables the common terminal 6 to perform the function corresponding to the inherent one-touch dial key of the memory card 4. Hence, the common terminal 6 may call different fax destinations according to different memory cards, for the same one-touch dial key.

Referring to Figure 3, the memory card 4 has a large read/write memory capacity. The reader/writer 10 reads and writes data from and into the memory card 4 according to a predetermined control. A controller 20 controls data transmission between the reader/writer 10 and a card interface 40. A central processing unit (CPU) 30 has a predetermined control program to perform the control function of the controller 20. The card interface 40 interfaces the controller 20 with the CPU 30. A keyboard 50 generates key data to be input to the CPU 30. The reader/writer 10 and controller 20 shown in Figure 3 may serve as the memory card reader/writer 5 shown in Figure 2, and the CPU 30, the card interface 40 and keyboard 50 may serve as the common terminal 6 shown in Figure 2.

Referring to Figure 4, operation of the CPU 30 shown in Figure 3 includes the steps of: reading the code of the memory card 4 inserted into the reader/writer 10 to check the validity of the memory card for example to determine whether the memory card is authorised to use the common terminal, performing the programmed function of the memory card corresponding to the key data generated by operating the keyboard 50 when the code proves to be valid, and registering the result of performing the programmed function of the memory card 4 as control data into the memory card 4.

An example of the operation of the system of Figure 2 will now be described with reference to Figs. 3 and 4.

5 In step (a) of Figure 4, when the system is supplied with power, the CPU 30 checks via the card interface 40 and the controller 20 whether or not a memory card 4 is inserted into the reader/writer 10 to call the system.

10 In step (b), the reader/writer 10 reads the code of the inserted memory card 4 under control of the controller 20. If the code does not match a stored identity code, the operation is ended in step (c). Otherwise, the key operation is started in step (d). Namely, the user generates key data by operating the keyboard 50, so that
15 the CPU reads the data stored in the memory card 4 corresponding to the key data, and the common terminal can thus perform the function corresponding to the data stored in the memory card.

20 The function corresponding to the data stored in the memory card 4 will be explained by way of example only with reference to a facsimile machine for the common terminal.

25 For example, for frequently called destinations, the user of the facsimile stores in advance into the memory card 4 data which corresponds to a multi-addressing calling function. Then the memory card 4 is inserted into the system, and the keyboard is operated to generate the
30 key data corresponding to the data stored in the memory card, so that the CPU reads the data stored in the memory card 4 to perform the corresponding function.

35 Thereafter, the reader/writer 10 writes into the memory card the result of the operation as control data in

step (f). This control data is used in the next operation. The memory card 4 may store all the data concerning many functions, since the memory capacity of the memory card 4 is large.

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As described above, the illustrated system may eliminate the need for a memory of large capacity in a common terminal, and instead employs a memory card to store all the necessary data including an identifier code. Hence, even if the common terminal has been down, it is not necessary to re-input lost data concerning each memory card, which itself stores all of the necessary data. Further, the data stored in the memory card may be freely changed since data may be freely written in the memory card.

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While a preferred embodiment of the invention has been particularly shown and described, it will be understood by those skilled in the art that modifications in detail may be made without departing from the scope of the invention.

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The reader's attention is directed to all papers and documents which are filed concurrently with or previous to this specification and which are open to public inspection with this specification, and the contents of all such papers and documents are incorporated herein by reference.

25

All of the features disclosed in this specification (including any accompanying claims, abstract and drawings), and/or all of the steps of any method or process so disclosed, may be combined in any combination, except combinations where at least some of such features and/or steps are mutually exclusive.

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Each feature disclosed in this specification (including any accompanying claims, abstract and drawings), may be replaced by alternative features serving the same, equivalent or similar purpose, unless expressly stated otherwise. Thus, unless expressly stated otherwise, each feature disclosed is one example only of a generic series of equivalent or similar features.

The invention is not restricted to the details of the foregoing embodiment(s). The invention extends to any novel one, or any novel combination, of the features disclosed in this specification (including any accompanying claims, abstract and drawings), or to any novel one, or any novel combination, of the steps of any method or process so disclosed.

CLAIMS

1. A system for controlling a common terminal by a memory card, the system comprising:

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memory card means having a memory region to read and write an identifier as well as various programmed functional data for the use of the common terminal;

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reading and writing means coupled to said memory card means, for reading and writing data from and into said memory card means;

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a controller coupled to said reading and writing means, for controlling data transmission between said reading and writing means and a card interfacing means;

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said card interfacing means, arranged to interface said controller with a central processing unit;

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said central processing unit having a predetermined control program to perform the control function of said controller; and

a keyboard for supplying to said central processing unit key data corresponding to functions of which data is stored in said memory region of said memory card means.

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2. A method of controlling a common terminal by use of a system according to claim 1, comprising the steps of:

reading a code of said memory card means inserted into said reading and writing means to check the validity of said memory card means;

performing the function of said memory card means corresponding to key data generated by operating said keyboard when the code proves to be valid; and

5 registering the result of performing the function of said memory card as control data into said memory card.

3. A system for control of a common device by a plurality of memory devices, the system comprising:

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 a plurality of memory devices each having a memory which stores an identifier and data to control operation of said common device; and

15 reading and writing means for reading data from and writing data into said memory devices.

4. A system according to claim 3, in which the data which is written into said memory devices can be used to
20 control the common device in subsequent operations of the common device.

5. A system for control of one or more common terminals by use of any one of a plurality of memory devices, each
25 having an identification code and containing data to control operating functions of the common terminal(s), wherein in use the identification code is compared with a stored code and if the identification code matches the stored code then the common terminal(s) may be operated in
30 accordance with said control data.

6. A system or method for controlling a common terminal by use of a memory device substantially as herein before described with reference to Figures 2, 3 or 4 of the
35 accompanying drawings.