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(54) Abstract Title
A secure storage unit having a communications interface for receiving an access code which comprises in part an authorised time slot

(57) A secure storage unit 108, method of use of such a unit and internet portal for carrying out the method. The secure storage unit 108 having a communications interface 344 for receipt of an authorisation access code from a delivery management system 104, wherein the authorisation access code comprises in part an authorised time slot in which the access code may be used to access the storage unit 108. Many preferable features are disclosed including: the use of a wireless link (e.g. GSM, SMS, Bluetooth) to communicate with the storage unit, provision of a solar panel on the storage unit and transmitting an alarm signal to the delivery management system if an unauthorised access code is used. A preferred method includes the steps of receiving notification of an order for goods from a customer and communicating that order to a delivery service along with an authorisation access code. Also disclosed is provision of a part of an authorisation access code via a barcode representation or via a portable communications device.

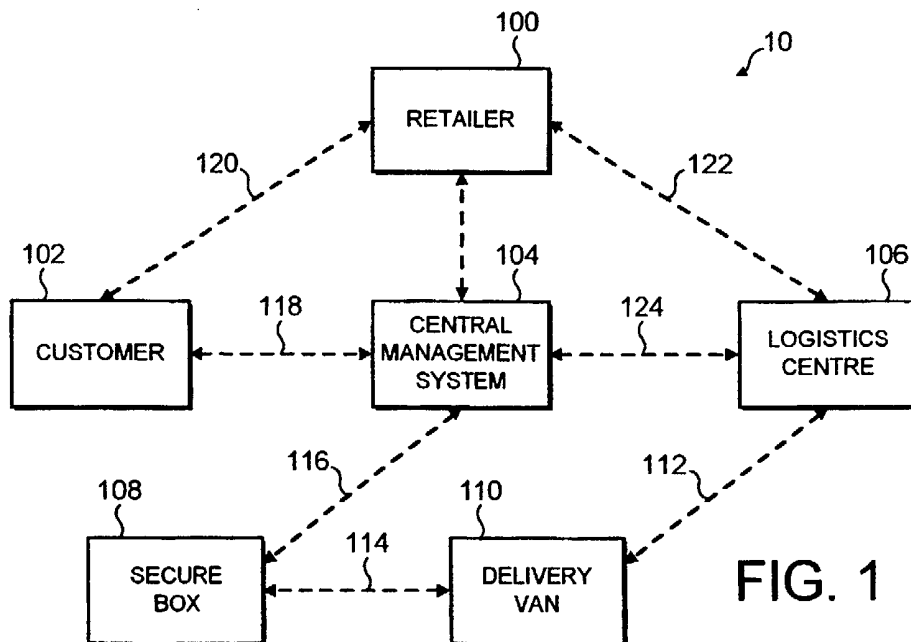


FIG. 1

At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

The print reflects an assignment of the application under the provisions of Section 30 of the Patents Act 1977.

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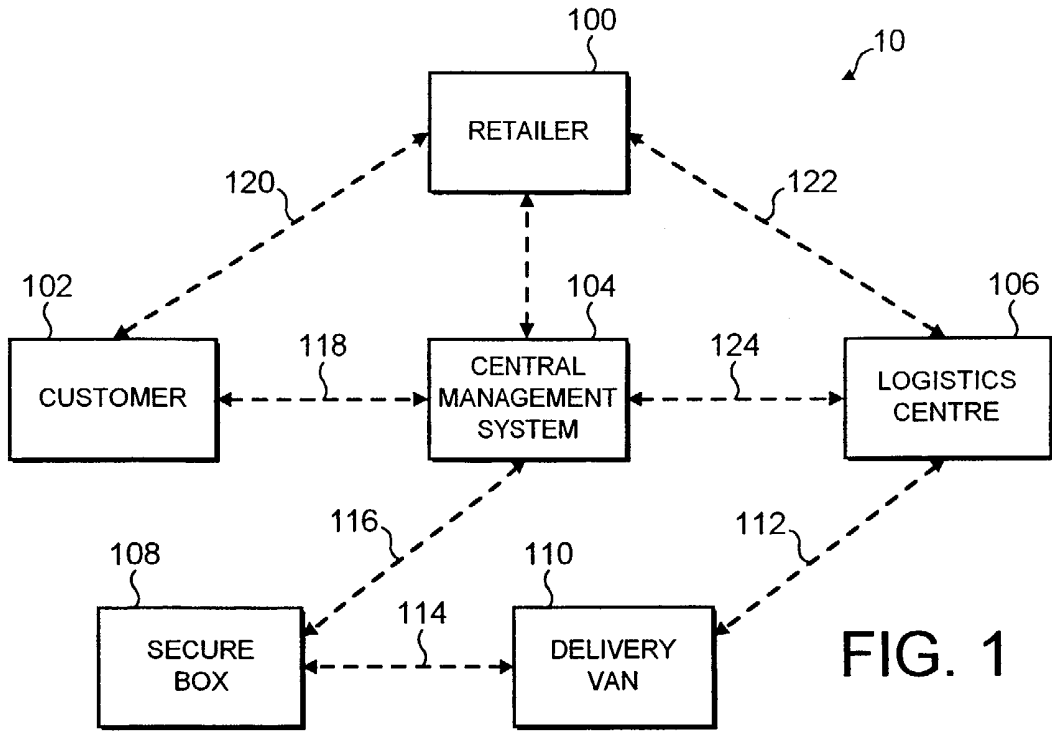


FIG. 1

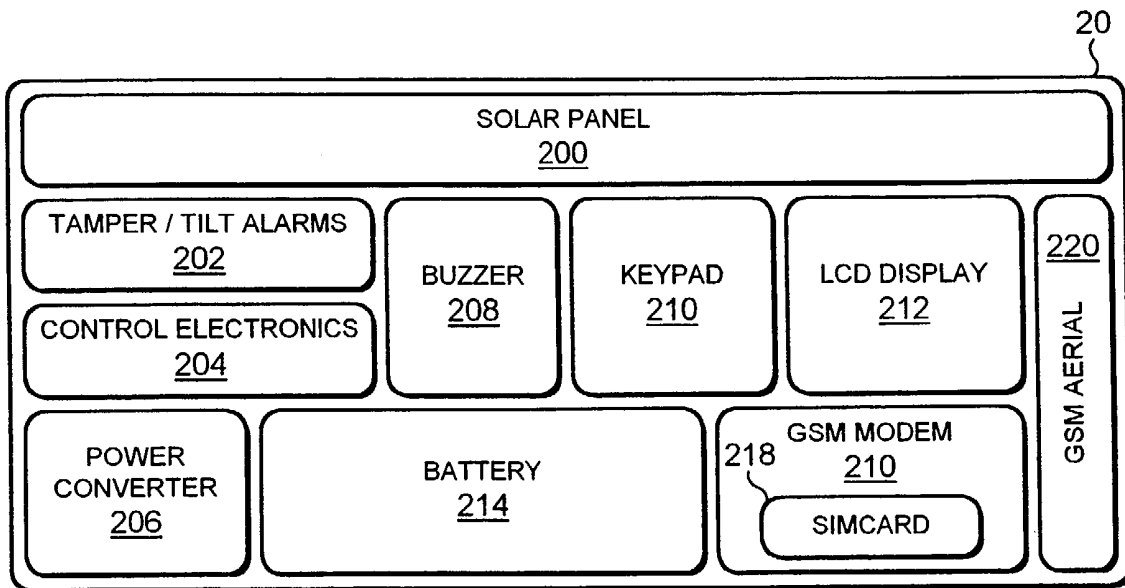


FIG. 2

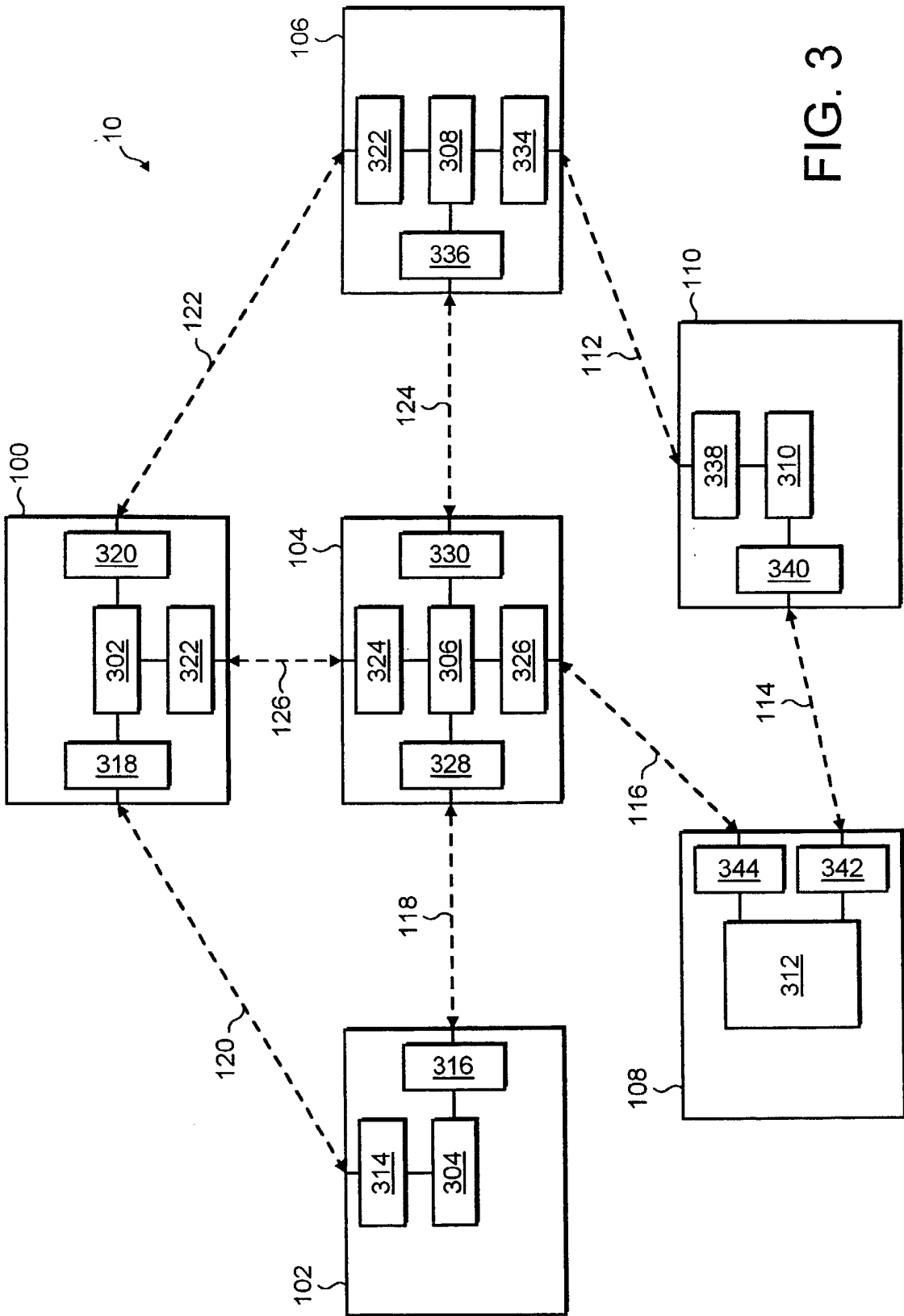


FIG. 3

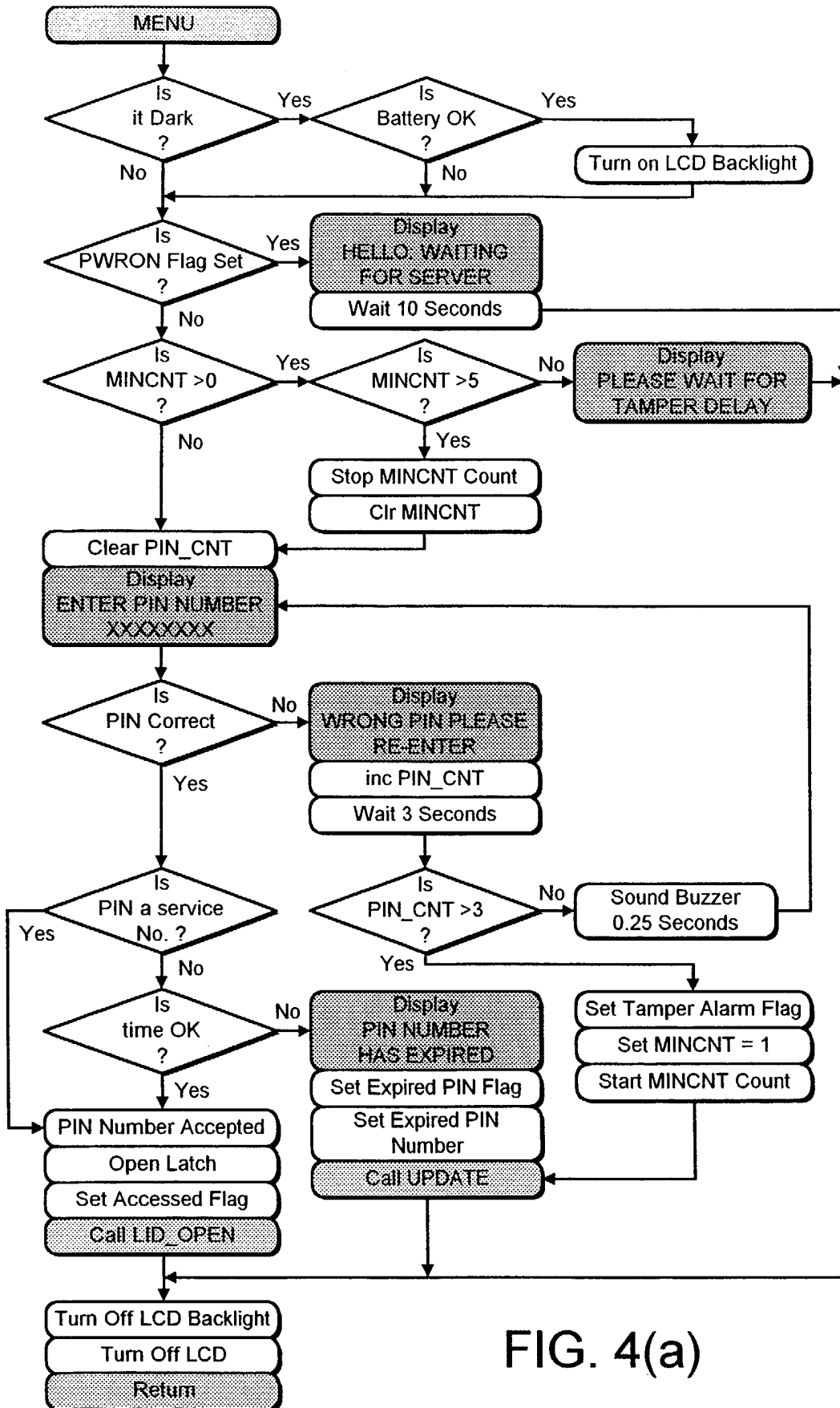


FIG. 4(a)

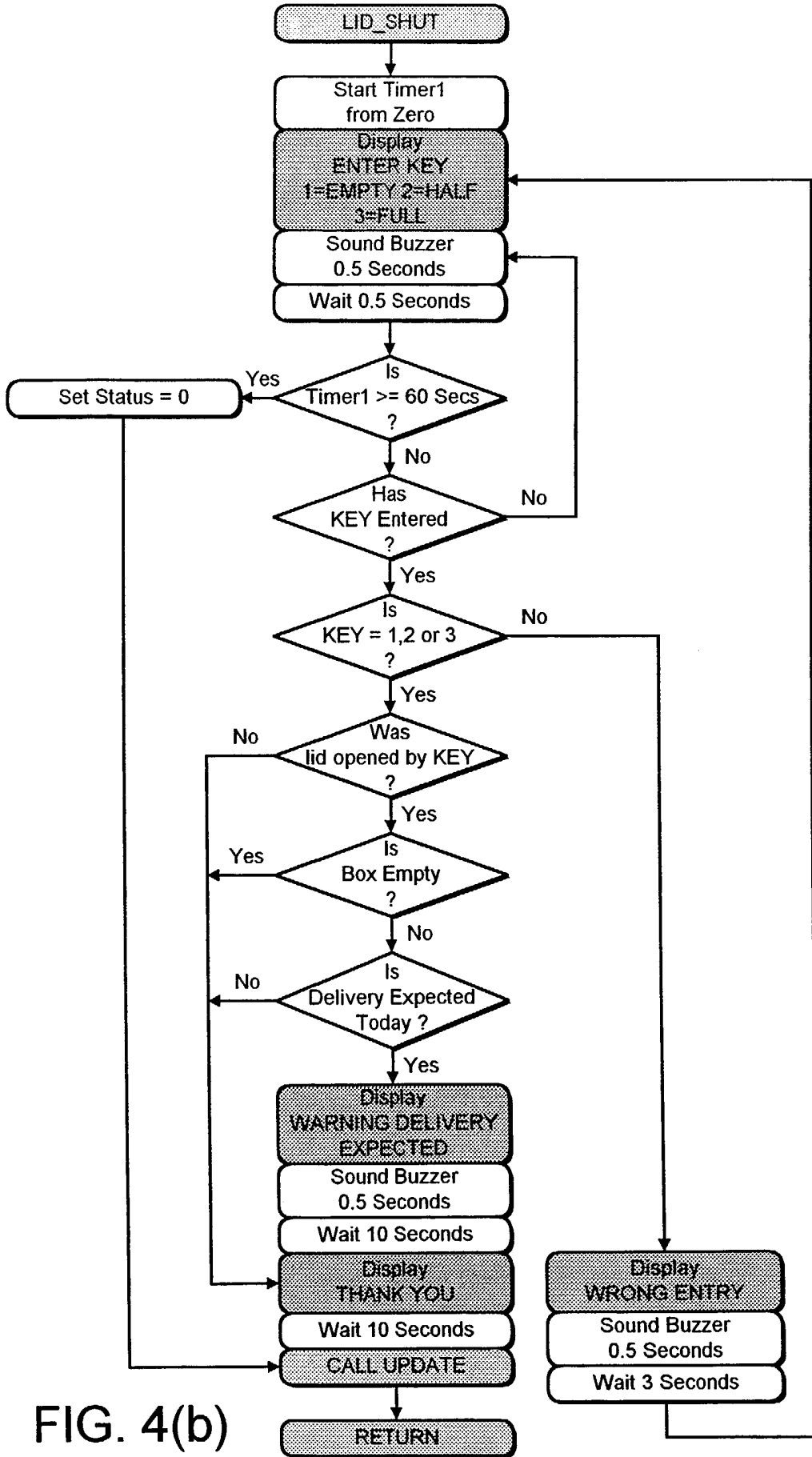


FIG. 4(b)

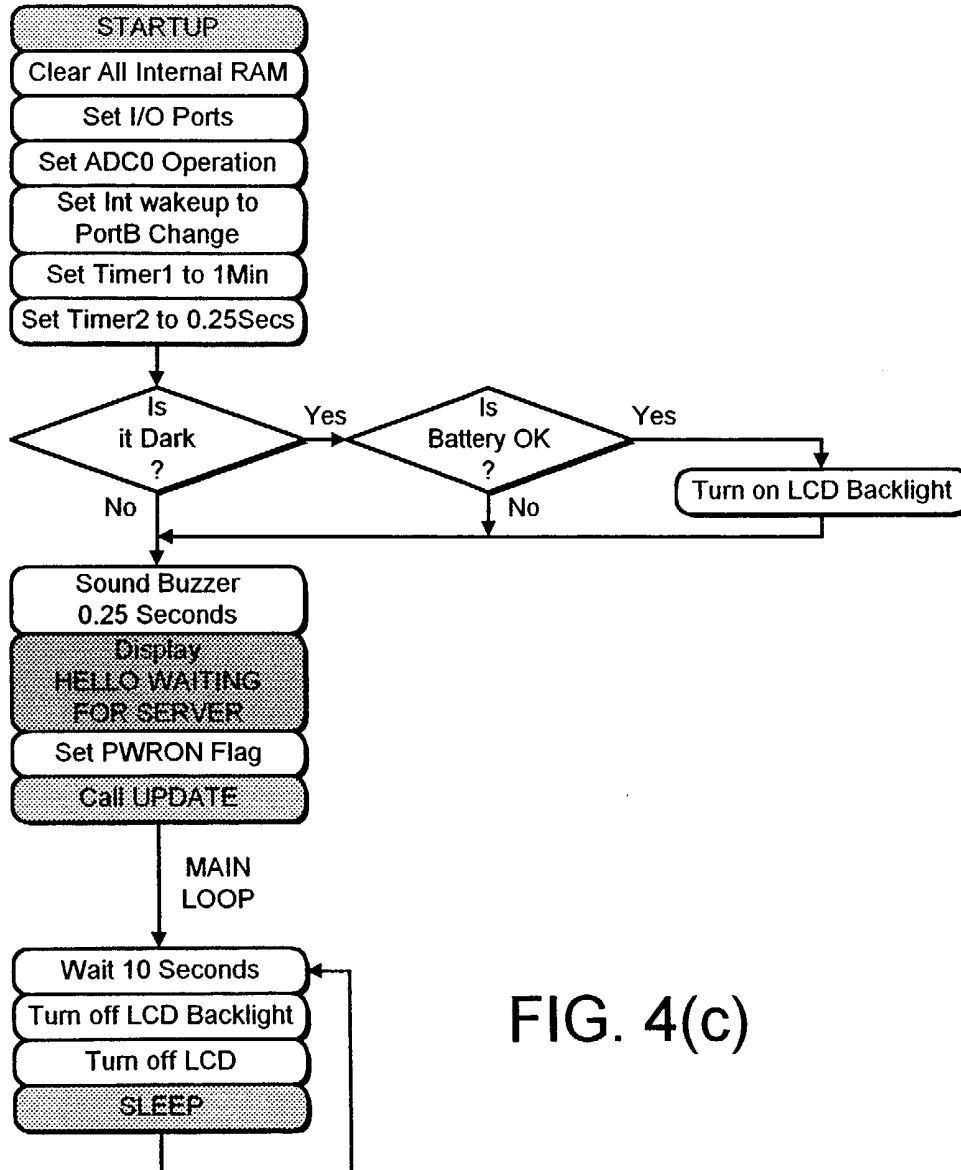


FIG. 4(c)

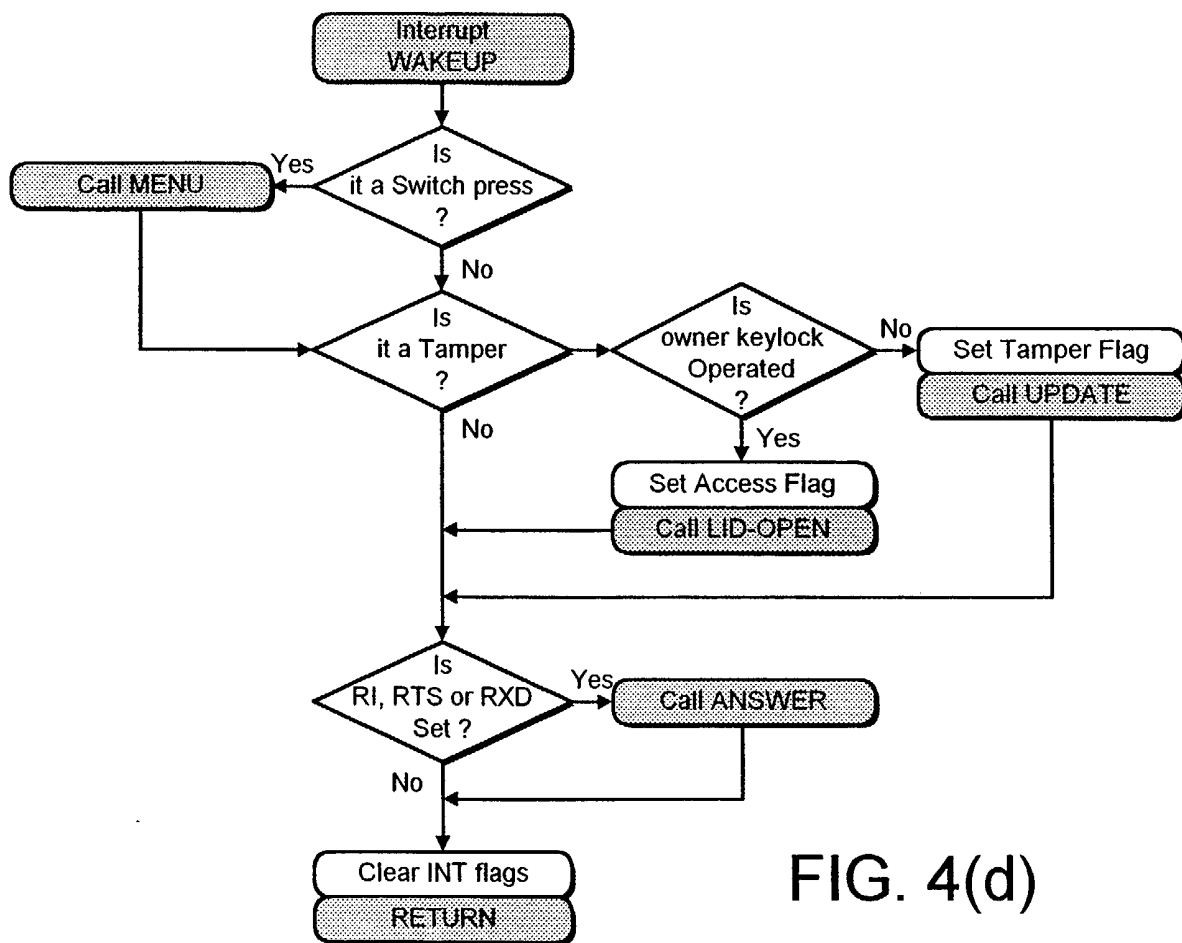


FIG. 4(d)

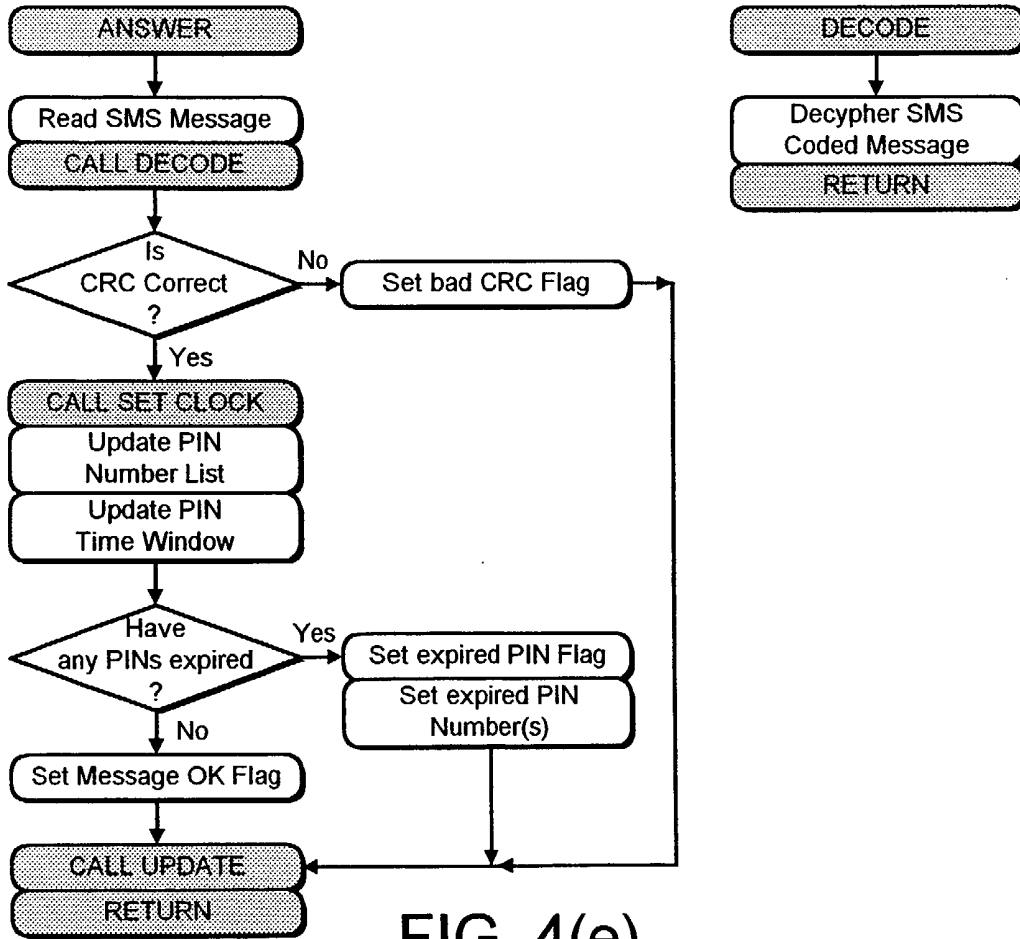


FIG. 4(e)

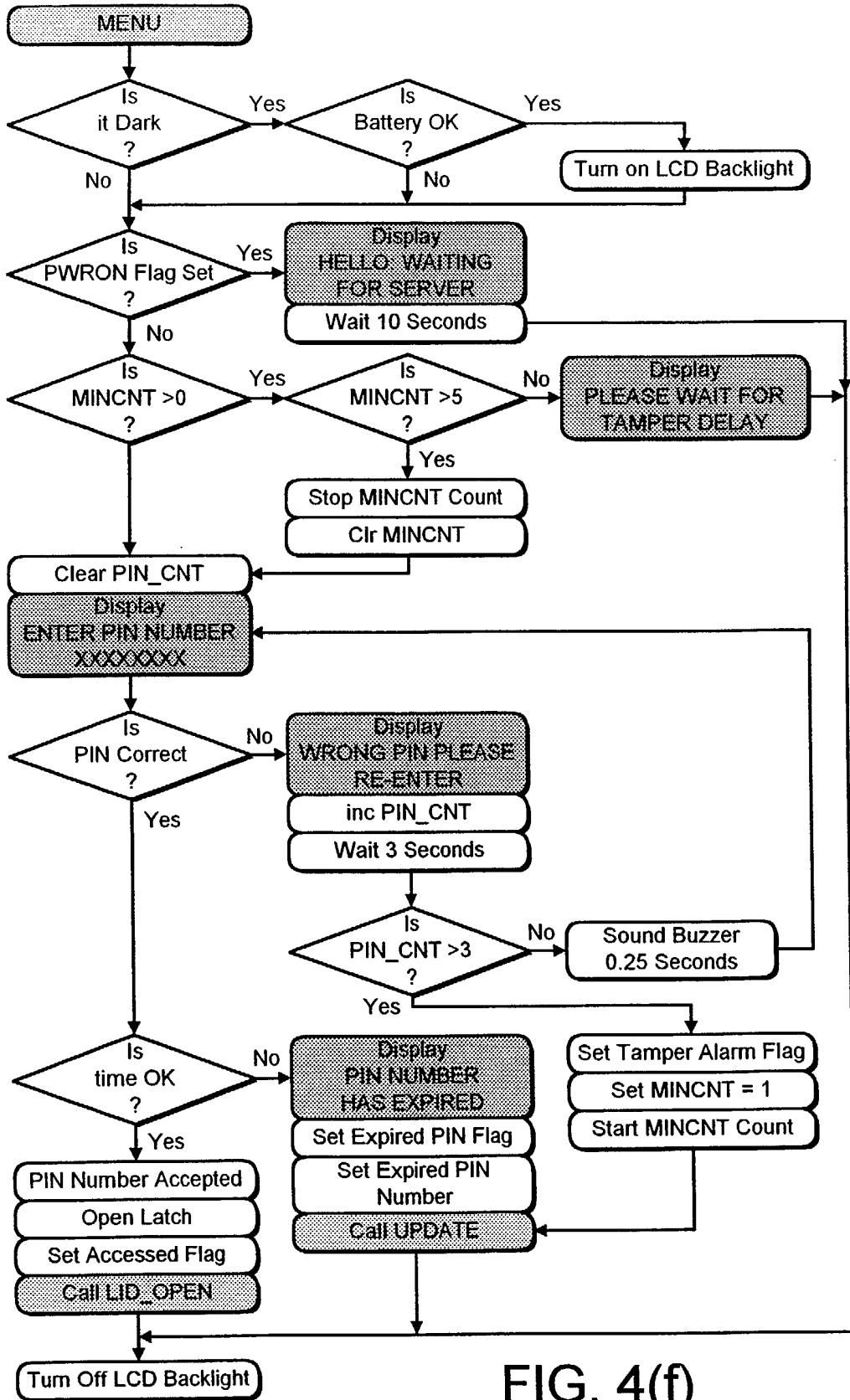


FIG. 4(f)

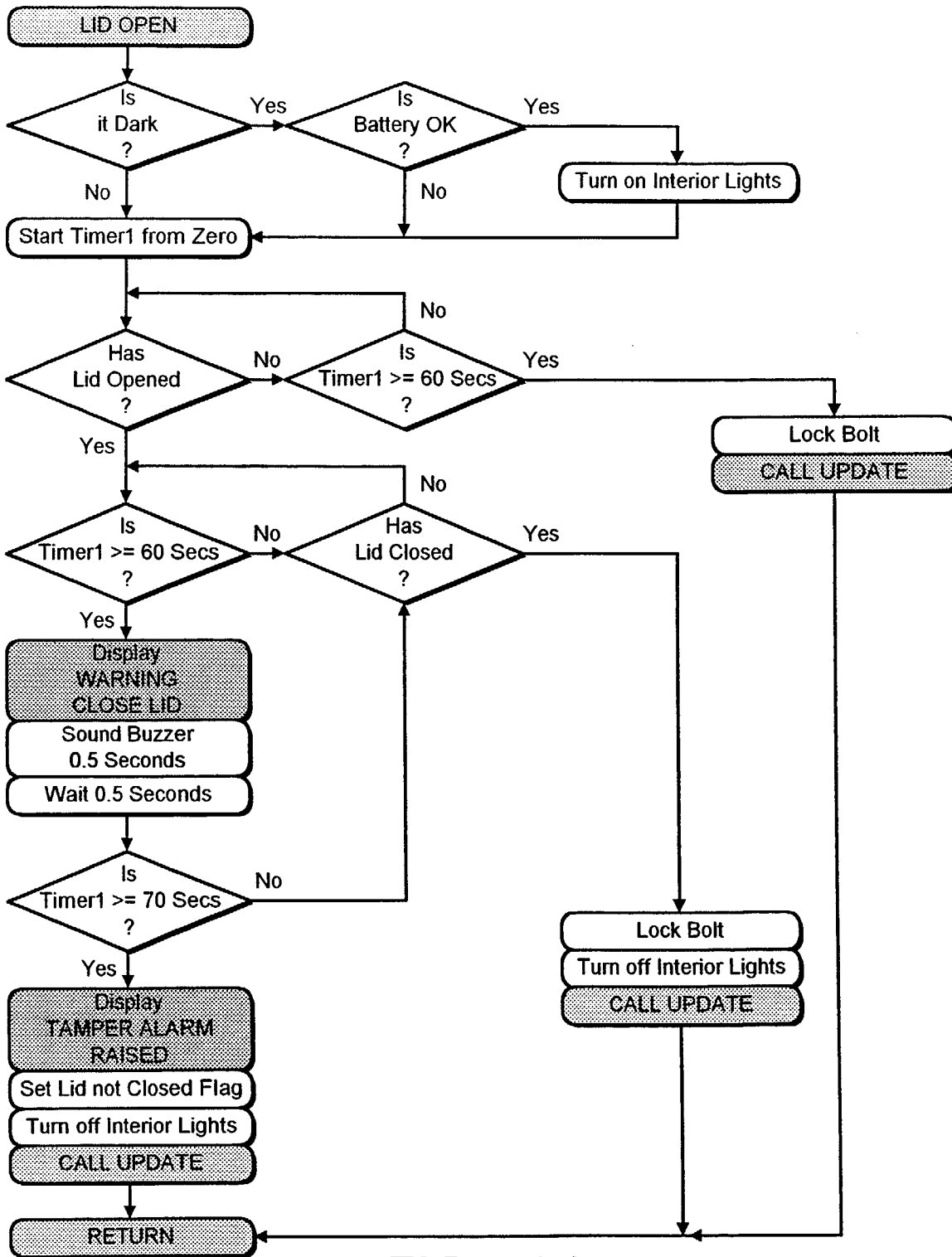


FIG. 4(g)

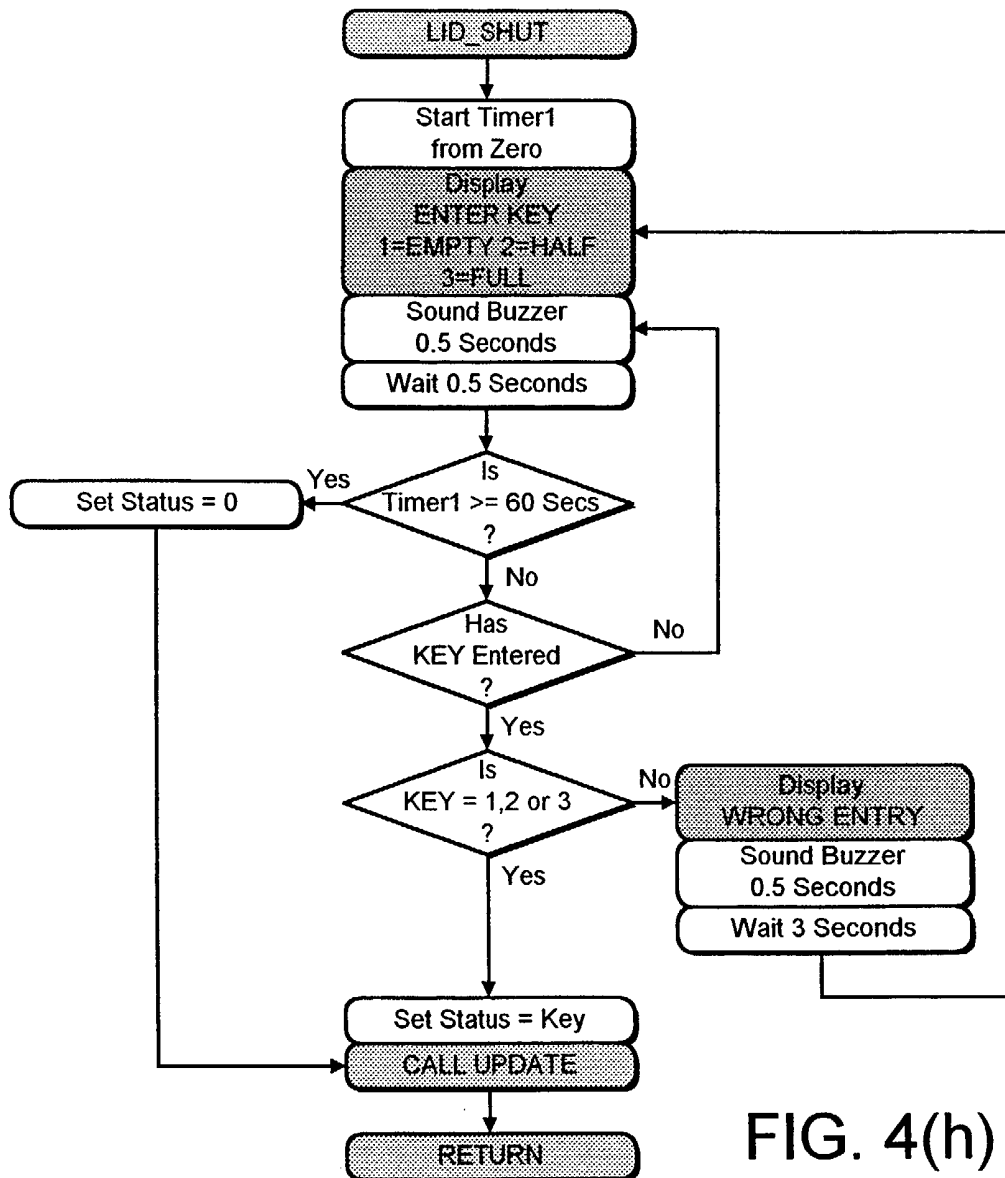


FIG. 4(h)

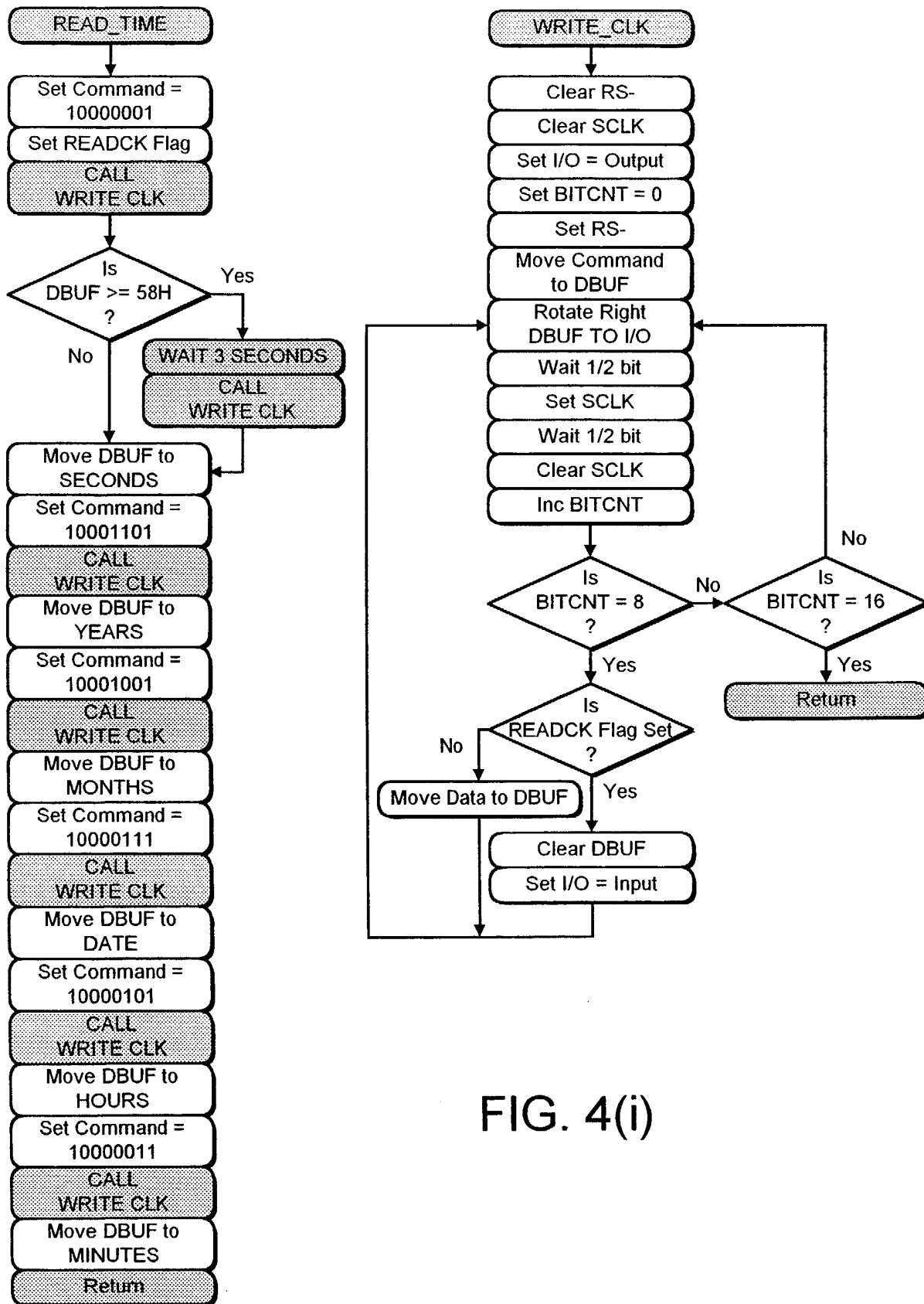


FIG. 4(i)

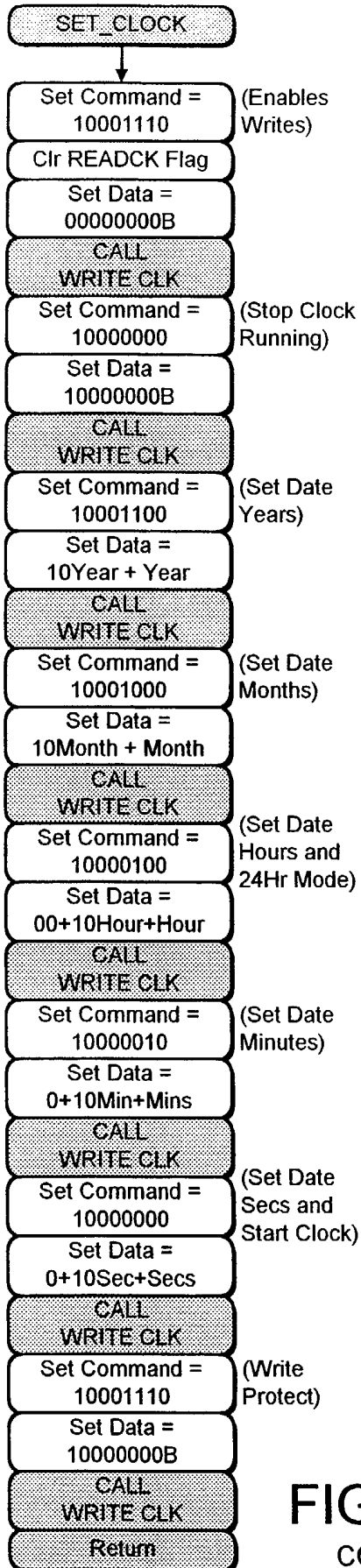
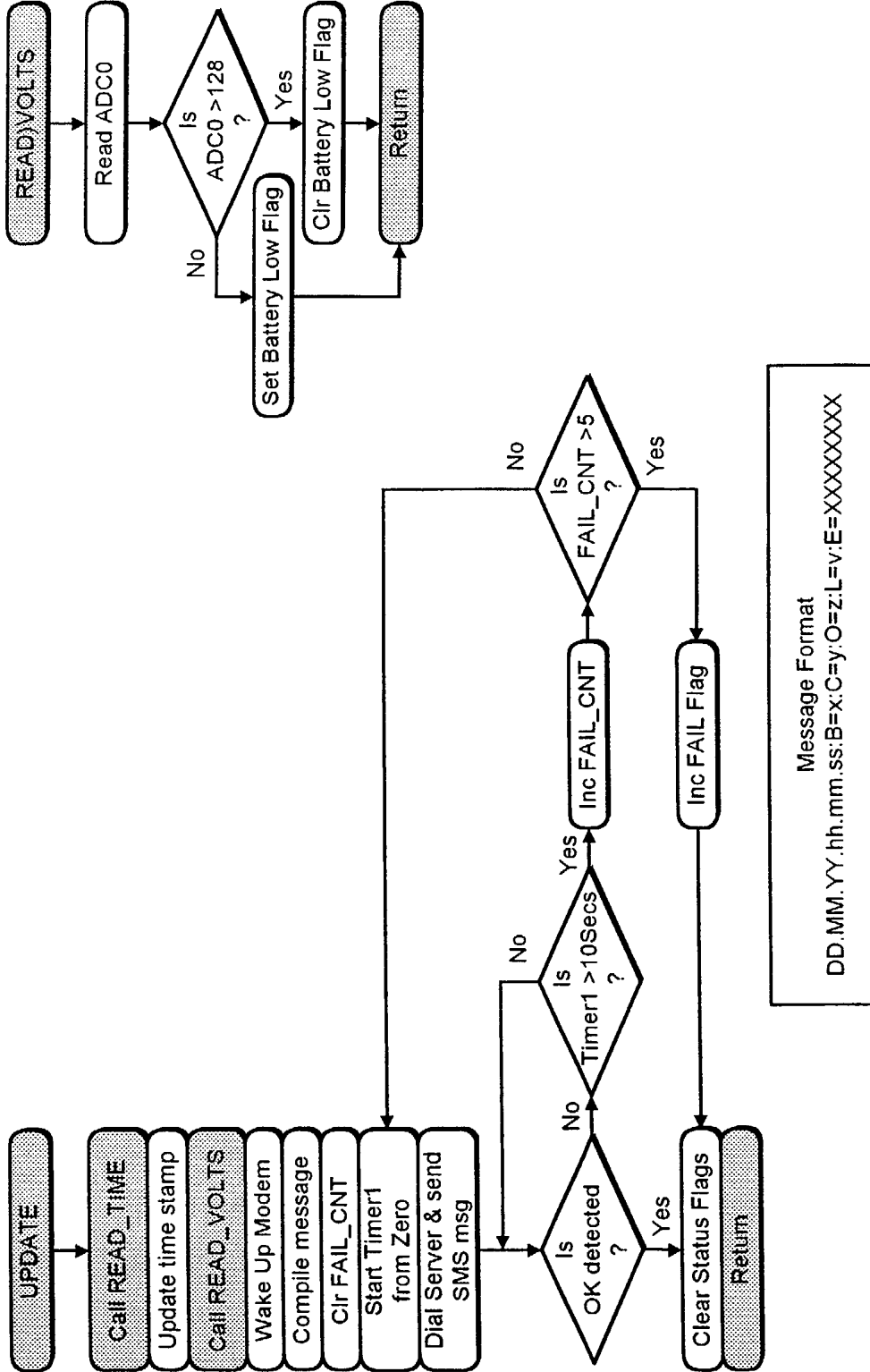


FIG. 4(i)
CONT'D



Message Format
 DD.MM.YY.hh.mm.ss:B=x:C=y:O=z:L=v:E=XXXXXXXX

FIG. 4(j)

SECURE UNATTENDED DELIVERY SYSTEM

The present invention relates to the delivery of goods, ordered by a customer, to a secure unit accessible by the customer. The invention is particularly, but not exclusively, concerned with
5 the delivery of goods ordered using the internet.

The use of the internet for the purchase of goods is a rapidly growing area. Some of the main reasons why customers buy goods on-line over the internet are convenience, price and speed. However despite such advantages associated with buying goods over the internet, the 'final
10 mile' problems of delivering goods to the home deters some customers. This is because of the need to be at home on a particular day or at a particular time in order to receive the goods. Furthermore the process of returning goods to the supplier is also a problem which deters people from buying on-line.

15 Typically in the current market goods are delivered to customers at their home, either because someone happens to be at home when the goods are delivered or because the delivery company arranged with the customer for somebody to be at home at a specific time. Arranging for somebody to be at home at a specific time, or arranging for goods to be left in another agreed place (for example with a neighbour) compromises the convenience of home
20 delivery. The delivery company leaving goods on the property when nobody is at home to accept the delivery compromises security. The delivery of goods through a letter box compromises the choice of goods which can be delivered.

US Patent No. 5,774,053 discloses a storage device that secures goods and that provides a
25 notification that goods have been delivered. The storage device is pre-programmed with a number of access codes that enable access to the storage device. Access codes can be changed only by direct access at the storage device.

30 With the above problems of home delivery in mind, it is an object of the present invention to provide an improved method and system for delivering goods to a customer. The invention is particularly advantageous when applied to the delivery of goods ordered over the internet, but applies equally to goods ordered by telephone, fax, catalogue or from local suppliers

In accordance with a first aspect of the invention, there is provided a storage unit for secure storage, the storage unit having a communications interface for communicating with a delivery management system, wherein the storage unit receives an authorisation access code including an authorised time slot from the delivery management system, the storage unit enabling access thereto responsive to use of the authorisation access code in the authorised time slot at a user interface.

In this aspect, there is also provided a method of controlling a secure storage unit, the storage unit having a communications interface for communicating with a delivery management system, the method comprising: receiving an authorisation access code, including an authorised time slot, from the delivery management system; and enabling access to the storage unit responsive to the use of the authorisation access code in the authorised time slot at a user interface.

In accordance with a second aspect of the invention, there is provided a storage unit for secure storage, the storage unit having a communications interface for communicating with a delivery management system, wherein the storage unit is provided with a bar-code representing at least a part of an authorisation access code, the storage unit enabling access thereto responsive to use of the authorisation access code at a user interface.

In this aspect there is also provided a method of controlling access to a secure storage unit comprising providing a bar-coded display representing at least a part of an authorisation access code; and enabling access to the secure storage unit responsive to use of the authorisation access code at a user interface.

In accordance with a third aspect of the present invention there is provided a portable communications device having a communications interface for communicating with a storage unit, the storage unit enabling access thereto responsive to an authorisation access code, the portable communication device providing at least part of said authorisation access code.

In this aspect there is also provided a method of controlling access to a secure storage unit, comprising providing a portable communications device having a communications interface for communicating with the storage unit, the storage unit enabling access thereto responsive

to an authorisation access code, wherein the portable communication device transmits at least part of the authorisation access code.

5 In accordance with a fourth aspect of the present invention, there is provided a controller for a delivery system comprising: means for receiving notification of an order for goods; means for communicating details of said order to a delivery carrier; and means for communicating with a secure storage unit, wherein responsive to receipt of notification of an order, an authorisation code to enable access to the secure storage unit is transmitted to the delivery carrier and the secure storage unit, the authorisation code including an authorised time-slot
10 for use of the authorisation code.

In this aspect there is also provided a method of controlling a delivery system comprising: receiving notification of an order for goods from a customer; communicating details of the order to a delivery service; wherein the step of communicating details to the delivery service
15 includes providing the delivery service and the delivery unit with an authorisation code to enable access to the delivery unit, the authorisation code including an authorised time-slot.

In accordance with a fifth aspect of the present invention, there is provided a storage unit for secure storage, the storage unit having a communications interface for communicating with a
20 delivery management system, wherein the storage unit receives an authorisation access code having at least two parts from the delivery management system, the storage unit enabling access thereto responsive to use of the authorisation access code in the authorised time slot at a user interface.

25 In this aspect there is also provided a method of controlling a secure storage unit, the storage unit having a communications interface for communicating with a delivery management system, the method comprising: receiving an authorisation access code having at least two parts, from the delivery management system; and enabling access to the storage unit responsive to the use of the authorisation access code in the authorised time slot at a user
30 interface.

In accordance with a further aspect of the invention, there is provided a portal for providing access to a set of retailers each being associated with a secure delivery management system,

the secure delivery management system controlling a delivery to a secure storage unit by the steps of: receiving notification of an order for goods from a customer; communicating details of the order to a delivery service; wherein the step of communicating details to the delivery service includes providing the delivery unit with an authorisation code to enable access to the delivery unit, and making the authorisation access code available to the delivery service, the authorisation code including an authorised time-slot. The portal preferably comprises a website. The authorisation access code is preferably made available to the delivery service via the portal.

10 In a still further aspect there is provided a portal for providing access to a set of retailers each being associated with a secure delivery system utilising a secure storage unit, the storage unit having a communications interface for communicating with a delivery management system, the operation of the secure delivery system comprising the steps of: receiving an authorisation access code, including an authorised time slot, from the delivery management system at the storage unit; and enabling access to the storage unit responsive to the use of the authorisation access code in the authorised time slot at a user interface of the storage unit. The portal preferably comprises a web-site.

The invention will now be described in relation to a particular example as illustrated in the accompanying drawings in which:

Figure 1 illustrates the overall management system of a delivery system in accordance with the present invention;

25 Figure 2 illustrates the main control elements of a secure storage unit in accordance with the present invention;

Figure 3 illustrates the main elements of each of the blocks shown in Figure 1; and

30 Figures 4(a) to 4(j) show flow diagrams illustrating the functionality of the secure box.

In the following description, where reference is made to customers or retailers these references are interchangeable with receiver and sender of goods, which can include all kinds of deliveries, including business documents, or deliveries to business premises.

5 Referring to Figure 1, there is generally illustrated in block diagram form all elements necessary to implement a preferred embodiment of the present invention. A central management system 104 implementing a delivery control system is illustrated. Also illustrated in Figure 1 are: a customer 102, a retailer 100, a logistics centre 106, a delivery van 110 associated with the logistics centre 106, and a secure box or storage unit 108.

10

Referring to Figure 3, the same elements are illustrated with their main functional elements identified.

15 In accordance with the preferred implementation of the present invention, the central management system 104 of the invention is a BearBox central management system provided as a separately managed entity to the retailer 100 and the logistics centre 106. The central management system is preferably implemented on a server. However it will be apparent from reading the following description of this preferred embodiment that in fact the central management system 104, the retailer 100, and the logistic centre 106 may be operated as a
20 single system, for example under the operation of a single company.

In the preferred example, the customer 102 is assumed to be located at their home. The customer 102 is first required to acquire an account with the central management system 104.

25 The preferable way in which the customer acquires an account with the central management system 104 is by purchasing a secure box 108. Purchasing such a box automatically gives the customer an account. In the preferred example, the secure box 108 is a BearBox, and the customer is provided with a BearBox account on purchase thereof.

30 Other options for acquiring an account with the central management system 104 may exist. For example, after purchasing a secure box 108, the customer may telephone the company in charge of the central management system 104 to obtain an account. In a further alternative,

the customer 102 may log-on to a website associated with the central management system 104 in order to register for an account.

5 Once the account is registered, the customer 102 is provided with an account number for future use. The intercommunication between the customer 102 and the central management system 104 is represented by line 118, and in this described preferred embodiment is implemented over the internet.

10 The customer preferably has a computer terminal 314 having a communication interface 314 for communicating with the retailer via lines 120, and a communication interface 316 for communicating with the central management system 104 via lines 118.

15 The customer 102 may log onto a website provided by the retailer 100 for the purpose of ordering goods from the retailer 100. In one example it is assumed that the retailer 100 is integrated into the central management system 104. Therefore when the customer orders goods on the retailer's website, the order form will include a request for the customer to enter their BearBox account number. In the event that a customer 102 does not have a BearBox account and leaves the BearBox account number field blank, then the order will be processed and delivered in another, conventional way.

20 In a particularly advantageous embodiment of the invention, a customer having an account with the central management system 104 logs onto a website associated with the central management system. In the preferred embodiment this is the BearBox website. This website then has links to all retailers who use the delivery system associated with central management system 104. In this way, customers who wish to only order goods over the internet if they are being delivered by the delivery system controlled by the central management system 104 can have direct access to those retailers which provide the service.

30 The BearBox website may also provide means for the customer to change their password (which provides secure access to the website). A BearBox may also be purchased using the website.

Once the customer 102 has placed an order with the retailer 100 requesting BearBox delivery, the retailer 100 communicates with the BearBox central management system 104 via communication lines 126. The communication lines 126 are preferably provided via the internet. During this communication, the central management system 104 provides the retailer 100 with an authorisation code to be used during the remainder of the delivery process. A computer terminal 302 of the retailer is connected to the communication lines 126 via a communications interface 322. A computer terminal 306 or processor of the central management system 126 is connected to the communication lines 126 via a communications interface 324.

That is, the central management system receives a message electronically from the retailer 100. In practice this message will be received from a computer systems associated with the retailer 100. Responsive to such message, the central management system 104 transmits messages electronically to the retailer computer system.

Thereafter, the retailer 100 communicates with the logistic centre 106 via communication line 122, again preferably provided via the internet. The computer 302 is connected to communication lines 122 via communication interface 320. A computer 308 of the logistics centre is connected to the communications lines 122 via a communications interface 332.

The retailer provides the logistic centre 106 with details of the delivery to be made, including the authorisation code provided by the central management system 104 to the retailer. The communication between the retailer and the logistics centre is by means of electronic messages exchanged between their respective computer systems.

Thereafter, the logistic centre 106 communicates with the BearBox central management system 104 via communication link 124, again preferably provided via the internet. The computer 308 and computer 306 are connected to communication lines 124 via communication interfaces 336 and 330 respectively.

The logistic centre 106 uses the authorisation code provided by the retailer 100 to initiate communication with the central management system 104. In response to a valid authorisation

code, the central management system 104 communicates with the logistic centre 106 to confirm delivery details, including providing an authorisation access code or access code.

5 The communication between the logistics centre and the central management system is again by means of electronic messages.

10 The authorisation code is effectively a sequential number, issued each time the retailer makes a new booking, and is used primarily for reference and as a means of searching for a particular booking's details. The access code or authorisation access code is the code that opens the secure box when typed in at a keypad, or entered by other means. It is the authorisation code that the retailer passes on to the carrier.

15 In confirming delivery details, the BearBox central management system 104 communicates with the secure box 108 via communication link 116 to establish that the secure box 108 is fully functional and that it is available to accept delivery. The computer 306 and a controller 312 of the secure box are connected to communication lines 116 via communication interfaces 326 and 344 respectively.

20 The availability of delivery may be determined by, for example, deliveries already arranged to be made to the box which would result in the box being full at particular times.

25 As will be discussed in further detail hereinbelow, the communication link 116 is preferably a wireless link. The communication between the central management system and the secure box is by exchange of electronic messages, as will be described in further detail hereinafter.

30 Once the BearBox central management system 104 has established the functionality and availability of the secure box 108, then it communicates with the logistics centre 106 to arrange an appropriate delivery slot. Preferably, the delivery slot will be limited to a particular time window. That is, the logistic centre 106 will be provided with a particular time window or date window for making delivery to the secure box.

In addition, the central management system 104 will provide the logistic centre 106 with an access code or authorisation access code for the secure box 108. The BearBox central

management system 104 will then communicate the access code or authorisation access code provided to the logistic centre 106 to the secure box 108, together with the details of any date or time window allocated to the logistic centre 106 and associated with the access code.

- 5 In an alternative arrangement, the logistic centre may not receive the access code from the central management system. In this alternative arrangement, the logistic centre obtains the access code by accessing the BearBox website, using a password or other secure means, to retrieve the access code for the delivery.
- 10 Thereafter, the logistic centre 106 provides details of the authorisation code for access to the secure box 108 to a delivery agent 110 or delivery carrier, preferably either a delivery van or delivery person, via communication link 112, which may be a wireless link. The computer 308 and a controller 310 of the delivery agent are connected to communication lines 112 via communication interfaces 334 and 338 respectively.
- 15 The delivery van 110 will of course also carry the goods for delivery. The delivery agent will also be provided with the date and time window for which the authorisation code is valid.
- In this way the logistic centre 106 when arranging and agreeing the delivery window with the central management system 104, may be able to arrange for deliveries in a particular geographical area to be made on the same day or within the same time window. This may make use of delivery agents by the logistic centre 106 much more efficient, and dramatically reduce the number of failed deliveries.
- 20
- 25 The delivery agent then delivers the goods for delivery to the secure box 108 within the time window, using the authorisation code. The details of the secure box 108 are described in further detail hereinbelow, but in this embodiment the box is provided with a keypad for entry of the authorisation code. When the authorisation code is entered in the secure box by the delivery agent, a signal is communicated to the BearBox central management system via communication link 116 to indicate that the delivery has been made. In response to such signal, the BearBox central management system 104 may communicate the successful delivery to any or all of the customer 102, the retailer 100 and the logistic centre 106.
- 30

The central management system 104 is, as discussed herein above, preferably associated with a website, in this preferred embodiment the BearBox.com website. The website may additionally provide means for the customer, retailer, or logistic centre to monitor an order of goods and the progress of delivery.

5

As discussed above the website associated with the central management system 104 may provide an e-commerce portal to the websites of retailers using the BearBox central management system 104 to organise deliveries. In such a way, customers 102 having an account with the BearBox central management system 104 and only wishing to order delivery
10 of goods where the BearBox delivery procedure can be applied, will be able to access all retailers supporting the BearBox delivery system through the BearBox website of the BearBox central management system 104.

15

The implementation of the secure box 108 in accordance with the preferred embodiment of the invention will now be described further with reference to Figure 2. The secure box 108 is a simple to use box for depositing goods delivered to the premises of a customer, such as a private house, when the customer is absent. Access to the box will be available to the customer at any time by means of a key. It is envisaged that in certain embodiments the customer may have a master access code for accessing the BearBox. As discussed herein
20 above, access to all others such as delivery agents will be limited by means of a time windowed access code.

20

Referring to Figure 2, the control electronics 20 for the secure box 108 will comprise the following main blocks: a solar panel 200; tamper/tilt alarms 202; control electronics 204; a
25 power converter 206; a buzzer 208; a keypad 210; an LCD display 212; a battery 214; a GSM modem 216 including a slot for a SIM card 218; and a GSM aerial 220.

25

30

The GSM modem 216 is preferably a dual band 900/1800 with a" SIM card 218, connected to the internal GSM aerial 220. The SIM card may be a "pay as you go" SIM card. In this way
30 the secure box 108 can communicate with the BearBox central management system 104 via a wireless link providing the communication link 116. Although a GSM modem is used in this preferred embodiment, other wireless technology may be provided for communicating on the communication link 116, for example UMTS technology or Bluetooth technology.

The solar panel 200 is intended to provide power to the various electronic elements, and also to charge the battery 214. The dimensions of the solar panel 200 are chosen to suit the power requirements of the unit 20 and the recharge parameters of the battery 214. In the preferable embodiment, the solar panel 200 is dimensioned to provide sufficient power based on one hour of direct sunlight in every 24 hours. The battery 214 itself is selected to suit power requirements for a maximum daily usage based on estimated figures. A facility for external recharging may be supplied to charge new or abused batteries 214 or to accept local power if suitable and available without compromise to the security of the system. The power converter 206 is preferably provided to convert the power from the solar cell 200, or from an external charger to charge the battery 214.

In an alternative embodiment, the unit may be powered directly from a mains power supply.

The control electronics 204 in the preferred embodiment is a microprocessor based card containing non-volatile memory, a real time clock, a tamper monitor, a GSM modem interface, LCD drivers, a microphone and speaker drives, deadlock controls, and configuration control software for the unit. The implementation of such control electronics will be well within the scope of someone skilled in the art.

20

The LCD display 212 will preferably be a small display mounted in a prominent position on the outside of the secure box 108.

The buzzer 208 is preferably provided to provide a small audible warning device to signal, for example, menu selection confirmations and to detect alarm conditions.

25

The keypad 210 is used to obtain access to the secure box 108 by both the customer 102 and the delivery agent, and preferably also to enter information as will be described further hereinbelow for communication to the BearBox central management system 104. The keypad 210 and the LCD display 212 will be used in tandem, with the LCD display 212 providing prompts for the information to be entered via the keypad 210. In addition an LED backlight may be added to the LCD display to enable viewing at night.

30

The design of the detailed mechanical aspects of the secure box 108 is outside the scope of the present invention. The size of the secure box 108 may vary according to different applications, and a customer 102 may be able to choose different sizes of secure box 108 to be fitted at their preferred location. In a preferred implementation, it is intended that the box
5 will be of a size to take two crates of wine or beer, or a household weekly shop. The basic model will be a single box with an opening lid or side. The solar panel 200 discussed herein above will preferably be positioned in the lid of the box. The solar panel 200 will either be mounted behind a toughened plastic panel, or be of a toughened glass construction. The LCD display 212 and keypad 210 are also mounted in a prominent position on the outside of the
10 box. The design of the box is such that damage to the solar panel 200, keypad 210, or LCD display 212 will not enable access to the interior of the box. In a preferable embodiment, the secure box 108 is provided with a mechanical override key activated lock which will allow access to the box in the case of the electronic circuitry failing for whatever reason.

15 The secure box may also be provided with means for fixing removable panels thereto. In this way an owner of a BearBox unit can choose a style of panelling, which perhaps best suit the environment in which the box is located, and change the appearance of the BearBox.

Access to the box can be made by the owner at any time by means of a mechanical key or by
20 entering the PIN number via the local keypad located on the secure box. Access to the box can also be made by delivery agents by entering their unique time-windowed keycode via the keypad. The keycode, and the associated time window, is downloaded by the BearBox central management system 104 directly to the secure box 108 via the GSM modem link. The keycode is preferably encrypted by the central management system 104 before
25 downloading. Once access to the secure box 108 is gained, a confirmation status message will be uploaded to the BearBox central management system 104.

In an alternative embodiment described further hereinbelow, the delivery agent may be able to access the secure box using a wireless link between the box and a portable unit carried by
30 the delivery agent.

Various alternative implementations of the control of the secure box will now be described.

There are various modes of operation in which access to the secure box may be provided. These modes will now be described, and it should be apparent to one skilled in the art that various combinations of these modes may also be used.

5 In a first mode, the authorisation access code is transmitted from the central management system to the secure box 108 and the logistics centre 106. The communications interface 342 of the secure box comprises a user interface incorporating an alphanumeric keypad. The keypad may be any one of a number of designs, and may alternatively be only a numeric keypad or only an alphabetic keypad.

10

The delivery agent is provided with the authorisation access code by the logistics centre 106. The delivery agent may physically obtain the authorisation access code from the logistics centre. In a preferred embodiment, the logistics centre transmits the authorisation code via communications interface 334 on link 112 to the delivery agent, which receives the code at communication interface 338. The processor 310 and communication interface 338 15 may be provided in a van or in a portable device carried by the delivery agent. The processor 310 is also associated with a display for displaying the authorisation access code received at the communication interface 338. The authorisation access code preferably includes an authorised time window within which the code may be used, and this is also displayed to the 20 delivery agent.

In this mode of operation, the delivery agent then enters the authorisation access code in the keypad of the user interface 342, to thereby gain access to the secure box 108.

25 In a further mode, the goods which are being delivered may have a goods authorisation code associated therewith which forms part of the access code required to access the secure box. In this mode, the delivery agent may receive a first part of the authorisation access code, which may be termed a carrier authorisation code, as described above. The second part of the authorisation access code, associated with the goods, is needed as well in order to gain access 30 to the secure box. The goods authorisation access code may be provided on the goods themselves or on paperwork associated with goods. The goods authorisation code may be provided in encoded form, such as a bar-code display. In this case, the delivery agent is provided with a bar-code scanner to read the bar-code and display the goods authorisation

code. Where the delivery agent is provided with a portable device for receiving a part of the authorisation access code from the logistics centre 106, the same portable device may incorporate the bar-code scanner.

- 5 Where two such parts of the access authorisation code are provided, access to the secure box may be provided by a simple combination of the two parts. For example the delivery agent may be issued with a six digit code, and the goods to be delivered may be associated with a four digit code. Combining the two into a ten digit code gives the authorisation access code. Alternative arrangements may exist. For example, it may be required to first enter the carrier
10 authorisation code, and if this is accepted then enter the goods authorisation code.

In a further mode of operation the user interface 342 may include a communications interface for communicating with a remote device, either in conjunction with or in place of the keypad. The remote device may be a portable device carried by the delivery agent, and instead of
15 entering the authorisation access code via the keypad, the delivery agent may simply enter an authorisation access code stored directly in the portable device via the remote communication link. For example, if the logistics centre transmits an authorisation code to the delivery agent having a portable device, the device is merely stored in a memory associated with the processor 310. The delivery agent then accesses the secure box by communicating the
20 authorisation code via the communications interface 340 to the communication link 114, which is received by the communication interface of the user interface 342.

The communication link 114 may be any type of remote or wireless link. Examples are an infra-red link or a Bluetooth link.
25

In a further mode of operation, access to the secure box may be enabled responsive to a combination of the remote link and the keypad.

In a further mode of operation, a bar-code display may be provided on the outside of the
30 secure box 108. The delivery agent, having a portable device including a bar-code scanner, may then scan the bar-code to retrieve at least a part of the authorisation access code. This part of the authorisation access code may be used in combination with any part described

hereinabove to access the secure box, either using the keypad or the remote link to the portable device.

5 In different mode of operation, the authorisation access code may be provided solely in the form of a bar-code display on the outside of the secure box, the delivery agent scanning the bar-code using a portable device to retrieve the full authorisation access code, the authorisation access code then being entered at the user interface using either the keypad of the remote link. In this mode, as discussed above, such a bar-code display may only represent part of the authorisation access code.

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In particular in this mode the authorisation access code provided by the bar-code display on the secure box can be considered to be a box authorisation code and may be equivalent to the carrier authorisation code. The full access authorisation code is then obtained from scanning the goods authorisation code provided on the goods for delivery. The box authorisation code will be fixed, because of the nature of the bar-code display, but the goods authorisation code will vary. Thus the central management system will transmit at least the goods authorisation code part of the authorisation access code to the secure box.

15

From the above description it will be apparent that many different combinations exist, and the skilled reader will be able to derive from the above combinations other than those described.

20

In the above the invention has been described from the perspective of the delivery of goods. The invention may also operate for a customer to return goods. In this arrangement the goods are left in the secure box by the customer, and either the retailer or the central management system notified. The delivery agent then accesses the secure box in exactly the same manner to retrieve the goods. Obviously in this case no goods authorisation access code can be provided on the goods themselves, but it may be provided to the delivery agent on paperwork associate with the return of the goods.

25

30 The technique of providing an authorisation access codes with at least two parts (for example with a carrier authorisation code and a goods authorisation code) is particularly advantageous in ensuring secure delivery.

Instructions for using the secure box 108 are preferably displayed on the LCD display, which preferably has a simple to use English language menu of commands and messages, for example "enter PIN number", "wrong PIN number please re-enter" etc. The precise layout of the menu structure is outside the scope of the present invention.

5

As indicated by the tamper/tilt alarms 202 in Figure 2, the box 108 is preferably provided with electronics to detect unauthorised tampering. If a tamper is detected by means of a movement and tamper switch arrangement then an emergency call or alarm is established to the BearBox central management system 104, and if necessary action taken.

10

Preferably, the secure box 108 additionally monitors the condition of the internal battery 214, and establishes an emergency or alarm call to the BearBox central management system 104 in the event of the battery level falling below a certain level. The battery level at which such alarm is triggered is linked to the time of day, such that a shorter battery life is acceptable in the morning (when power will be provided by the solar panel) but a much longer battery life will be necessary in the evening time.

15

The keypad 210 may also be used by the delivery agent to enter information as to the status of the secure box 108. After making the delivery to the secure box 108, the delivery agent may be prompted by the LCD display to provide information on the status of the box. For example the LCD display may prompt the delivery agent to enter information as to whether the box is now full, empty, or half-full. After the delivery is made, the LCD display may also provide a confirmation code to the delivery agent, which is also communicated to the BearBox central management system 104.

20

In a further preferable embodiment, a bar code may be incorporated into the inside of the secure box, and this may be scanned by a handheld device carried by the delivery agent which will act as proof of delivery for the delivery agent.

25

The BearBox central management system 104 is preferably able to download status information from the secure box 108 at any time, including the battery level and whether goods have been delivered to the box, including identity of the goods delivered to the box by virtue of the authorisation code used by the delivery agent.

30

The BearBox central management system 104 may in addition periodically set and update the real time clock in the secure box 108. Whenever the box is opened, a time stamp and status message will be automatically transmitted to the BearBox central management system 104,
5 including an identification of the means (access code or key) used to open the box.

In the preferable embodiment, the communication between the secure box 108 and the BearBox central management system 104 using the GSM link utilises SMS messages. The SMS messages will cater for the following communications:

10

1. Update time from server to box;
2. Update validation PIN number. This defines a PIN number and a start time/date and stop time/date for the validation window. The number of separate PIN numbers and time windows which can be stored in the box is variable dependent upon the
15 implementation of the electronics in the box. Expired PIN numbers are deleted automatically and an appropriate message sent back to the BearBox central management system 104.
3. Request status from box.
4. Status from box. This defines any current alarms, for example, tamper alarm, battery
20 low alarm or illegal PIN entry alarm. This message preferably also senses the current box status of empty, half full or full.
5. Box delivery has been made. This message is sent each time the box is opened and also contains the status information as defined in 4.

25 An example implementation in the BearBox central management system and the secure box 108, conforming to SMS protocol is as follows:-

Poll from server to box:-

1) Set PIN and time validation window

5 DD.MM.YY.hh.mm.ss: PIN=XXXXXXXX: ON= DD.MM.YY.hh.mm.ss:
OFF= DD.MM.YY.hh.mm.ss:

2) Request status

10 DD.MM.YY.hh.mm.ss RS

Poll from box to server:-

Time Stamp: Current Status: Expired PIN

15

DD.MM.YY.hh.mm.ss: B=x: C=y: O=n: T=z: L=v: E=XXXXXXXX

B= Battery Low alarm (=1 battery=low,=0 battery OK)

T= Tamper alarm (=1 tamper active,=0 no tamper)

20 O= Opened (=1 Box lid accessed,=0=No access)

L= Box lid not closed timeout expired (=1=Box lid open alarm,
=0=box lid closed OK)

C= Box Condition (=3=Full,=2=Half Full,=1=Empty)

E= Expired PIN Number time window has elapsed without entry.

25 (=0 =no expired PINs, or =Pin No)

Figure 5(a) to 5(j) show various flow diagrams representing the operation of the control electronics of the secure box 108 and the user interface.

30 In a preferred embodiment, the BearBox website provides a hub for the functionality of the whole delivery system. All parties involved – the retailer, the carrier and the customer – can access the status of deliveries through the BearBox website using appropriate passwords. In addition, the carrier may preferably retrieve the authorisation access code, or a part thereof,

for making the delivery from the BearBox website. The BearBox website preferably provides an e-commerce portal to all participating retailers supporting the BearBox delivery system. Thus, customers can be confident that all retailers accessed through the BearBox site provide the secure delivery system unique to BearBox.

5

The BearBox itself, the control of which is preferably integrated into the BearBox website, may be adapted according to a particular customer's needs, and various models may be available. The BearBox may incorporate refrigeration means, either solid-state or conventional or both. Retailers and/or delivery carriers may be provided with special thermal packaging for keeping products cool or warm for extended periods.

10

CLAIMS

- 5 1. A storage unit for secure storage, the storage unit having a communications interface for communicating with a delivery management system, wherein the storage unit receives an authorisation access code including an authorised time slot from the delivery management system, the storage unit enabling access thereto responsive to use of the authorisation access code in the authorised time slot at a user interface
- 10 2. The storage unit of claim 1 wherein the authorisation code comprises a plurality of access codes.
- 15 3. The storage unit of claim 2 wherein the goods for delivery have a goods authorisation coded associated therewith, wherein the goods authorisation code forms a part of the authorisation access code.
- 20 4. The storage unit of claim 2 or claim 3, wherein a delivery agent has a carrier authorisation code associated therewith, wherein the carrier authorisation code forms a part of the authorisation access code.
- 25 5. The storage unit of claims 3 and 4 wherein access to the storage unit is enabled responsive to the two parts of the authorisation code.
- 30 6. The storage unit of any one of claims 1 to 5 wherein the user interface includes a keypad, wherein at least a part of the authorisation access code is entered via the keypad.
7. The storage unit of any one of claims 1 to 6 wherein the user interface includes a communications interface for communicating with a remote device, wherein at least a part of the authorisation access code is entered via the remote device.
8. The storage unit of claim 6 wherein the remote device is a portable device.

9. The storage unit of claim 7 or claim 8 wherein the communications interface communicates with the remote device via a wireless link.
- 5 10. The storage unit of claim 9 wherein the wireless link is a bluetooth link or an infra-red link.
11. The storage unit of any one of claims 2 to 10 wherein at least a part of the authorisation access code is provided in encoded form on the storage unit in the form of a bar-code display.
- 10 12. The storage unit of claim 11 wherein there is further provided a remote device including a bar-code reader for displaying the part of the authorisation code.
13. The storage unit of any one of claims 2 to 12 wherein at least part of the authorisation access code is provided in encoded form on goods for delivery.
- 15 14. The storage unit of claim 13 wherein there is further provided a remote device including a bar-code reader for displaying the part of the authorisation code.
- 20 15. The storage unit of any preceding claim wherein the user interface includes a keypad.
16. The storage unit of any preceding claim further including a hinged door for access thereto.
- 25 17. The storage unit of any preceding claim wherein the communications interface is a wireless interface.
18. The storage unit of claim 17 wherein the wireless interface is a GSM interface.
- 30 19. The storage unit of claim 17 or claim 18 wherein the wireless interface communicates with the delivery management system using SMS.

20. The storage unit of any preceding claim wherein the authorised time slot includes a start time and a stop time.
- 5 21. The storage unit of any preceding claim wherein the authorised time slot includes a start date and a stop date.
22. The storage unit of any preceding claim wherein the storage unit transmits an alarm signal to the delivery management system responsive to use of an unauthorised access code.
- 10 23. The storage unit of any preceding claim, including a solar panel.
24. The storage unit of claim 23 wherein the solar panel either powers the storage unit or recharges batteries provided to power the storage unit.
- 15 25. The storage unit of any preceding claim including refrigeration means.
26. The storage unit of any preceding claim including means for attaching removable panels to the storage unit.
- 20 27. A method of controlling a secure storage unit, the storage unit having a communications interface for communicating with a delivery management system, the method comprising: receiving an authorisation access code, including an authorised time slot, from the delivery management system; and enabling access to the storage unit responsive to the use of the authorisation access code in the authorised time slot at a user interface.
- 25 28. The method of claim 27 wherein the authorisation access code comprises a plurality of access codes.
- 30 29. The method of claim 28 including the step of providing goods for delivery with a goods authorisation code, wherein the goods authorisation code forms part of the authorisation code.

- 5
30. The method of claim 28 or claim 29 including the step of providing a delivery agent with a carrier authorisation code, wherein the carrier authorisation code forms a part of the authorisation access code.
31. The method of claims 29 and 30 further including the step of enabling access to the storage unit responsive to the two parts of the authorisation card.
- 10
32. The method of any one of claims 27 to 31 further including the step of entering the authorisation access code via a keypad of the user interface.
33. The method of any one of claims 27 to 32 further including the step of entering at least part of the authorisation access code via a remote device having a communications link with a communications interface of the user interface.
- 15
34. The method of claim 33 wherein the communications link is a wireless link, or a bluetooth link, or an infra-red link.
- 20
35. The method of any one of claims 28 to 34 further including the step of providing at least part of authorisation access code in encoded form on the storage unit in the form of a bar-code display.
- 25
36. The method of any one of claims 28 to 34 further including the step of providing at least part of the authorisation access code in encoded form goods for delivery in the form of a bar-code display.
- 30
37. The method of claim 35 or claim 36, further including the step of providing a remote device including a bar-code reader for displaying the part of the authorisation code.
38. The method of any one of claims 27 to 37 further including the step of providing a hinged door for access to the storage unit.

39. The method of any one of claims 27 to 38 wherein the communications interface is a wireless interface.

40. The method of claim 39 wherein the communications interface is a GSM interface.

5

41. The method of any one of claims 27 to 40 including the step of communicating the authorisation access code to the storage unit using SMS messaging.

42. The method of any one of claims 27 to 41 further including the step of providing a start time and a stop time in the authorised time slot.

10

43. The method of any one of claims 27 to 42 further including the step of providing a start date and a stop date in the authorised time slot.

44. The method of any one of claims 27 to 43 further including the step of transmitting an alarm signal to the delivery management system responsive to use of an unauthorised access code.

15

45. A storage unit for secure storage, the storage unit having a communications interface for communicating with a delivery management system, wherein the storage unit is provided with a bar-code representing at least a part of an authorisation access code, the storage unit enabling access thereto responsive to use of the authorisation access code at a user interface.

20

46. The storage unit of claim 45 wherein a delivery agent is provided with a bar-code scanner for scanning the bar-code to retrieve at least the part of the authorisation access code.

25

47. The storage unit of claim 46 wherein the bar-code scanner displays at least part of the authorisation access code.

30

48. The storage unit of any one of claims 45 to 47 wherein the bar-code represents the full authorisation access code.

49. The storage units of any one of claims 45 to 47 wherein the bar-code represents only part of the authorisation access code.
- 5 50. The storage unit of claim 49 wherein the goods for delivery have a goods authorisation code associated therewith, wherein the goods authorisation code forms a part of the authorisation access code.
- 10 51. The storage unit of claim 50 wherein the goods authorisation code is presented as a bar-code.
- 15 52. The storage unit of any one of claims 45 to 51 wherein the storage unit additionally comprises a communications interface for communicating with a delivery management system, wherein the storage unit receives the authorisation access code from the delivery management system.
- 20 53. The storage unit of claim 52 wherein the authorisation access code additionally includes an authorised time slot.
- 25 54. The storage unit of any one of claims 45 to 53 wherein a delivery agent has a carrier authorisation code associated therewith, wherein the carrier authorisation code forms a part of the authorisation access code.
- 30 55. The storage unit of any one of claims 45 to 54 in which the user interface includes a keypad.
56. The storage unit of any one of claims 45 to 55 in which the user interface includes a wireless communication interface.
57. A method of controlling access to a secure storage unit comprising providing a bar-coded display representing at least a part of an authorisation access code; and enabling access to the secure storage unit responsive to use of the authorisation access code at a user interface.

58. The method of claim 57 further comprising the step of providing a delivery agent with a bar-code scanner for scanning the bar-code to retrieve at least the part of the authorisation access code.
- 5
59. The method of claim 58 wherein the bar-code scanner displays at least part of the authorisation access code.
60. The method of any one of claims 57 to 59 wherein the bar-code represents the full authorisation access code.
- 10
61. The method of any one of claims 57 to 59 wherein the bar-code represents only part of the authorisation access code.
62. The method of claim 61 further comprising the steps of providing the goods for delivery with a goods authorisation code, wherein the goods authorisation code forms a part of the authorisation access code.
- 15
63. The method of claim 62 wherein the goods authorisation code is presented as a bar-code.
- 20
64. The method of any one of claims 57 to 63 further including the step of providing in the storage unit a communications interface for communicating with a delivery management system, wherein the storage unit receives the authorisation access code from the delivery management system.
- 25
65. The method of claim 64 wherein the authorisation access code additionally includes an authorised time slot.
- 30
66. The method of any one of claims 57 to 65 further including the step of providing a delivery agent with a carrier authorisation code, wherein the carrier authorisation code forms a part of the authorisation access code.

67. The method of any one of claims 57 to 66 further including the step of providing a keypad as the user interface.
- 5 68. The method of any one of claims 57 to 67 further including the step of providing a wireless communication interface as the user interface.
- 10 69. A portable communications device having a communications interface for communicating with a storage unit, the storage unit enabling access thereto responsive to an authorisation access code, the portable communication device providing at least part of said authorisation access code.
- 15 70. The portable communication device of claim 69, wherein the storage unit includes a communication interface for communicating with a delivery management system, wherein the storage unit receives the authorisation access code from the delivery management system.
- 20 71. The portable communications device of claim 69 or claim 70, wherein the portable communication device provides a first part of said access code, a second part of said authorisation access code being provided by a goods authorisation code associated with goods being delivered.
- 25 72. The portable communications device of claim 69 or claim 70, wherein the portable communication device provides a first part of said access code, a second part of said authorisation access code being provided by a unit authorisation code associated with the storage unit.
- 30 73. The portable communication device of claim 72 wherein the unit authorisation code is provided in the form of a bar-code display on the unit, the portable communications device further comprising a bar-code scanner.
74. The portable communication device of any one of claims 69 to 73 wherein the communication interface is a wireless link or an infra-red link or a bluetooth link.

- 5 75. A method of controlling access to a secure storage unit, comprising providing a portable communications device having a communications interface for communicating with the storage unit, the storage unit enabling access thereto responsive to an authorisation access code, wherein the portable communication device transmits at least part of the authorisation access code.
- 10 76. The method of claim 75 wherein the storage unit includes a communication interface for communicating with a delivery management system, wherein the storage unit receives the authorisation access code from the delivery management system.
- 15 77. The method of claim 75 or claim 76, wherein the portable communication device provides a first part of said access code, a second part of said authorisation access code being provided by a goods authorisation code associated with goods being delivered.
- 20 78. The method of claim 75 or claim 76, wherein the portable communication device provides a first part of said access code, a second part of said authorisation access code being provided by a unit authorisation code associated with the storage unit.
- 25 79. The method of claim 78 including the step of providing the unit authorisation code in the form of a bar-code display on the unit, the portable communications device further comprising a bar-code scanner.
- 30 80. A controller for a delivery system comprising: means for receiving notification of an order for goods; means for communicating details of said order to a delivery carrier; and means for communicating with a secure storage unit, wherein responsive to receipt of notification of an order, an authorisation code to enable access to the secure storage unit is transmitted to the secure storage unit and made available to the delivery carrier, the authorisation code including an authorised time-slot for use of the authorisation code.
81. The controller of claim 80, wherein the means for communicating with the secure storage unit includes means for determining the status of the secure storage unit.

82. The controller of claim 80 or claim 81 wherein the means for receiving the notification of an order for goods receives said notification from a customer.
- 5 83. The controller of claim 80 or claim 81 wherein the means for receiving the notification of an order for goods receives said notification from a retailer providing said goods.
- 10 84. The controller of claim 83, wherein responsive to receipt of a notification of an order of goods from a retailer, the controller transmits the authorisation code to the retailer, wherein the controller transmits details of the delivery of said goods to the delivery carrier responsive to the delivery carrier transmitting the authorisation code to the controller.
- 15 85. The controller of claim 80, wherein the delivery carrier receives the authorisation code from the retailer.
- 20 86. The controller of any one of claims 80 to 85, wherein the controller receives a notification from the storage unit on completion of delivery to the storage unit.
87. The controller of any one of claims 80 to 86, wherein the controller receives from the storage unit a status message.
- 25 88. The controller of claim 87 wherein the status message indicates the amount of space in the storage unit.
89. The controller of any one of claims 80 to 88 wherein the controller receives an alarm signal from the storage unit responsive to detection of tampering at the storage unit.
- 30 90. The controller of claim 89 wherein tampering is detected by means of a tamper detector.

91. The controller of any one of claims 80 to 88, wherein the controller transmits a message to a customer or a retailer responsive to a successful delivery.

5 92. The controller of any one of claims 80 to 91, wherein the controller is connected to any one or all of the customer, the retailer, or the delivery carrier by a network.

93. The controller of claim 92 wherein the network is the internet.

10 94. The controller of any one of claims 80 to 93 wherein the controller is connected to the storage unit via a wireless communication link.

15 95. A method of controlling a delivery system comprising: receiving notification of an order for goods from a customer; communicating details of the order to a delivery service; wherein the step of communicating details to the delivery service includes providing the delivery unit with an authorisation code to enable access to the delivery unit, and making the authorisation access code available to the delivery service, the authorisation code including an authorised time-slot.

20 96. The method of claim 95 further comprising the step of determining the status of a storage unit associated with the customer.

97. The method of claim 95 or claim 96 wherein the step of receiving notification of an order for goods from a customer comprises receiving such notification from a retailer.

25 98. The method of claim 97 wherein the step of communicating details of the order to a delivery service comprises:

providing the retailer with an authorisation code;
responsive to receipt of the authorisation code from the delivery service,
determining delivery details with the delivery service.

30 99. The method of claim 98, wherein the step of determining delivery details includes determining a time frame for the delivery.

100. The method of any one of claims 95 to 99 further comprising receiving notification of delivery from the delivery unit responsive to a successful delivery.
- 5 101. The method of claim 100 further comprising receiving an indication of how much space remains in the box for future delivery.
- 10 102. The method of any one of claims 95 to 101 further comprising receiving an alarm signal from the delivery unit responsive to detection of tampering at the delivery unit.
103. The method of claim 102 wherein tampering is detected by means of a tamper detector.
- 15 104. The method of any one of claims 95 to 103 wherein the details of the order are communicated to the delivery service via a network.
105. The method of any one of claims 95 to 104 wherein the order for goods is received via a network.
- 20 106. The method of claim 104 or claim 105 wherein the network is the internet.
107. The method of any one of claims 95 to 106 wherein the step of communicating to the delivery unit utilises a wireless link.
- 25 108. The method of any one of claims 95 to 107 further including receiving an alarm signal from the delivery unit responsive to detection of a low power supply level at the delivery unit.
- 30 109. The method of any one of claims 95 to 107 including receiving an alarm signal from the delivery unit responsive to detection of use of an unauthorised access code.

110. The method of any one of claims 95 to 110 further comprising receiving a signal from the delivery unit responsive to the customer accessing the delivery unit.
- 5 111. The method of claim 110 wherein the method comprises notifying the customer that delivery is complete responsive to the notification of successively
- 10 112. A storage unit for secure storage, the storage unit having a communications interface for communicating with a delivery management system, wherein the storage unit receives an authorisation access code having at least two parts from the delivery management system, the storage unit enabling access thereto responsive to use of the authorisation access code in the authorised time slot at a user interface.
- 15 113. The storage unit of claim 112 wherein the goods for delivery have a goods authorisation coded associated therewith, wherein the goods authorisation code forms a part of the authorisation access code.
- 20 114. The storage unit of claim 112 or claim 113, wherein a delivery agent has a carrier authorisation code associated therewith, wherein the carrier authorisation code forms a part of the authorisation access code.
115. The storage unit of claims 113 and 114 wherein access to the storage unit is only enabled responsive to the two parts of the authorisation code.
- 25 116. The storage unit of any one of claims 112 to 115 wherein the user interface includes a keypad, wherein at least a part of the authorisation access code is entered via the keypad.
- 30 117. The storage unit of any one of claims 112 to 116 wherein the user interface includes a communications interface for communicating with a remote device, wherein at least a part of the authorisation access code is entered via the remote device.
118. The storage unit of claim 117 wherein the remote device is a portable device.

119. The storage unit of claim 117 or claim 118 wherein the communications interface communicates with the remote device via a wireless link.
- 5 120. The storage unit of claim 119 wherein the wireless link is a bluetooth link or an infra-red link.
- 10 121. The storage unit of any one of claims 112 to 120 wherein at least a part of the authorisation access code is provided in encoded form on the storage unit in the form of a bar-code display.
122. The storage unit of claim 121 wherein there is further provided a remote device including a bar-code reader for displaying the part of the authorisation code.
- 15 123. The storage unit of any one of claims 112 to 122 wherein at least part of the authorisation access code is provided in encoded form on goods for delivery.
124. The storage unit of claim 123 wherein there is further provided a remote device including a bar-code reader for displaying the part of the authorisation code.
- 20 125. The storage unit of any one of claims 112 to 124 wherein the authorisation access code is associated with an authorised time slot.
- 25 126. A method of controlling a secure storage unit, the storage unit having a communications interface for communicating with a delivery management system, the method comprising: receiving an authorisation access code having at least two parts, from the delivery management system; and enabling access to the storage unit responsive to the use of the authorisation access code in the authorised time slot at a user interface.
- 30 127. The method of claim 126 including the step of providing goods for delivery with a goods authorisation code, wherein the goods authorisation code forms part of the authorisation code.

128. The method of claim 126 or claim 127 including the step of providing a delivery agent with a carrier authorisation code, wherein the carrier authorisation code forms a part of the authorisation access code.

5

129. The method of claims 127 and 128 further including the step of enabling access to the storage unit responsive to the two parts of the authorisation card.

10

130. The method of any one of claims 27 to 31 further including the step of entering the authorisation access code via a keypad of the user interface.

15

131. The method of any one of claims 126 to 130 further including the step of entering at least part of the authorisation access code via a remote device having a communications link with a communications interface of the user interface.

132. The method of claim 131 wherein the communications link is a wireless link, or a bluetooth link, or an infra-red link.

20

133. The method of any one of claims 126 to 132 further including the step of providing at least part of authorisation access code in encoded form on the storage unit in the form of a bar-code display.

25

134. The method of any one of claims 126 to 133 further including the step of providing at least part of the authorisation access code in encoded form goods for delivery in the form of a bar-code display.

30

135. The method of claim 133 or claim 134, further including the step of providing a remote device including a bar-code reader for displaying the part of the authorisation code.

136. The method of any one of claims 126 to 135 wherein the authorisation code is associated with an authorised time slot.

137. A portal for providing access to a set of retailers each being associated with a secure delivery management system, the secure delivery management system controlling a delivery to a secure storage unit by the steps of: receiving notification of an order for goods from a customer; communicating details of the order to a delivery service; wherein the step of communicating details to the delivery service includes providing the delivery unit with an authorisation code to enable access to the delivery unit, and making the authorisation access code available to the delivery service, the authorisation code including an authorised time-slot.
138. The portal of claim 137 comprising a website.
139. The portal of claim 137 or 138, wherein the authorisation access code is made available to the delivery service via the portal.
140. A portal for providing access to a set of retailers each being associated with a secure delivery system utilising a secure storage unit, the storage unit having a communications interface for communicating with a delivery management system, the operation of the secure delivery system comprising the steps of: receiving an authorisation access code, including an authorised time slot, from the delivery management system at the storage unit; and enabling access to the storage unit responsive to the use of the authorisation access code in the authorised time slot at a user interface of the storage unit.
141. The portal of claim 140 comprising a web-site.
142. A portal for enabling access to a retailer using a delivery system incorporating a storage unit according to any one of claims 1 to 26 or claims 45 to 56 or claims 112 to 125.
143. A portal for enabling access to a retailer using a method of delivery incorporating a method of controlling a secure storage unit according to any one of claims 27 to 44 or claims 57 to 68 or claims 126 to 136.

144. A portal for enabling access to a retailer using a delivery system incorporating a controller according to any one of claims 80 to 94.

5 145. A portal for enabling access to a retailer using a method of delivery incorporating a method of controlling a delivery system according to any one of claims 95 to 111.

146. The portal of any one of claims 142 to 145 comprising a web-site.



INVESTOR IN PEOPLE

Application No: GB 0021088.0
Claims searched: 1-44 80-146

Examiner: Paul Jefferies
Date of search: 17 April 2002

Patents Act 1977 Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:
UK CI (Ed.T): E2X (X5C); G4A (AAP, AUXX)
Int CI (Ed.7): A47G 29/ ; G06F1/00
Other: ONLINE: WPI, EPODOC, JAPIO, TDB, INSPEC

Documents considered to be relevant:

| Category | Identity of document and relevant passage | Relevant to claims |
|----------|---|--------------------|
| A | EP 1152376 A2 (BURLEY) See figure 1 and paragraphs [0029], [0046]. | |
| A | US 5979750 (KINDELL) See column 5, line 50 and figures 1, 4 and 15. | |

| | | | |
|---|---|---|--|
| X | Document indicating lack of novelty or inventive step | A | Document indicating technological background and/or state of the art. |
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