(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 3 355 292 A1

(12) EUROPEAN PATENT APPLICATION

(43) Date of publication:
01.08.2018 Bulletin 2018/31

(21) Application number: **18150430.9**

(22) Date of filing: **20.07.2011**

(51) Int Cl.:
G08B 25/10 *(2006.01)* ***G08B 25/00*** *(2006.01)*
G08B 25/08 *(2006.01)*

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

(30) Priority: **30.07.2010 FI 20105831**

(62) Document number(s) of the earlier application(s) in accordance with Art. 76 EPC:
11811886.8 / 2 599 066

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Remarks:
This application was filed on 05-01-2018 as a divisional application to the application mentioned under INID code 62.

(54) SECURITY SYSTEM FOR COMMUNICATING ALARM INFORMATION IN A MONITORED TARGET

(57) The application relates to a security system (100) for communicating alarm information in a monitored target. The system comprising a control unit (120, 300) for creating a private cellular network, cellular communicators (130a, 130b, 130c) for functioning as terminals in the system, base stations (140a, 140b) for functioning as an access point for the cellular communicators to the private cellular network, and at least one location transmitter for positioning the cellular communicators. The control unit is configured to receive (240) the alarm information over the private cellular network from a cellular communicator (130a, 130b, 130c), to specify (250) a recipient of the received alarm information, and to transmit (260) the received alarm information to the specified recipient. The cellular communicators can communicate with other intra-system or extra-system terminals. The cellular communicators are cell phones (130a, 130b, 130c. The base stations locate in a such way that it is possible to establish a connection to one of the base stations everywhere in the monitored target. In addition, the control unit receives a piece of address information, which one of the cellular communicators has received wirelessly from the at least one location transmitter, from said cellular communicator (130a, 130b, 130c) and sends the piece of address information to a monitoring computer (110) of the security system to update a location of said cellular communicator..

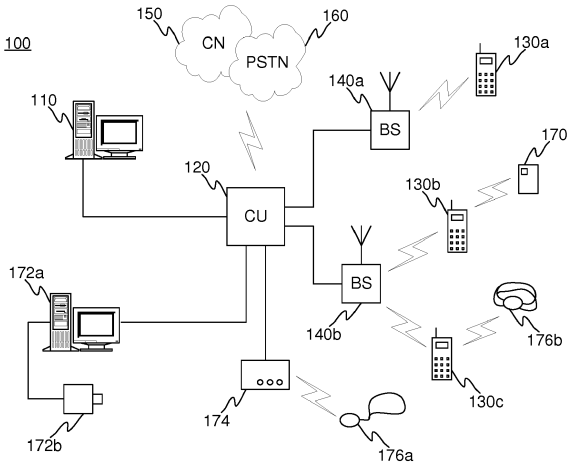

Fig. 1

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Description

Technical field

[0001] The application relates generally to a security system for communicating alarm information in a monitored target.

Background

[0002] For monitored targets, such as for example commercial properties, industrial establishments, hospitals and eldercare facilities, have been developed various alarm and security systems with guards communicating by way of wireless terminals both with each other and with a control center.

[0003] Communication between the terminals of monitoring systems has been implemented for example by means of cordless telephones making use of the DECT standard. A central unit included in the monitoring system manages base stations, which are intended to be located in a monitored property in such a way that an employee carrying a cordless phone would be able, over a base station or the central unit, to establish a connection from anywhere within the property with the monitoring system's central computer or another cordless telephone.

[0004] The usefulness of several different DECT systems is undermined by a high price of telephones, the restriction of operation within certain areas covered by base stations, as well as inconvenience regarding the maintenance of telephones and base stations as there is only a sparse maintenance network provided by businesses specialized in the maintenance or repair of DECT telephones. Another source of trouble is the complexity of expanding monitoring systems, the diversity of operating systems in various telephones, and the multitude of necessary base stations as a result of a relatively short range thereof.

Summary

[0005] One object of the invention to provide a security system for communicating alarm information in a monitored target and for locating terminals of the system more precisely.

[0006] One object of the invention is fulfilled by a security system, control unit, methods, and computer program according to the independent claims.

[0007] One embodiment is a security system for communicating alarm information in a monitored target. The system comprising a control unit for creating a private cellular network, cellular communicators for functioning as terminals in the system, base stations for functioning as an access point for the cellular communicators to the private cellular network, and at least one location transmitter for positioning the cellular communicators. The control unit is configured to receive the alarm information over the private cellular network from a cellular communicator, to specify a recipient of the received alarm information, and to transmit the received alarm information to the specified recipient. The cellular communicators can communicate with other intra-system or extra-system terminals. The cellular communicators are cell phones. The base stations locate in a such way that it is possible to establish a connection to one of the base stations everywhere in the monitored target. In addition, the control unit receives a piece of address information, which one of the cellular communicators has received wirelessly from the at least one location transmitter, from said cellular communicator and sends the piece of address information to a monitoring computer of the system to update a location of said cellular communicator.

[0008] The term "security system" is used, for example, in reference to security systems for senior care centers and hospitals, monitoring systems for fire alarms, property automation monitoring systems, access control systems and burglar alarm systems.

[0009] The term "alarm information" is used, for example, in reference to information conveyable in a security system, comprising for example alarm messages from personal security devices, event notifications from monitoring equipment, inquiries from terminals and fixed interval reports from monitoring equipment.

[0010] The term "private cellular network" is used in reference to local encrypted cellular communicator networks, which enable covering for example some specific building and/or area by means of pico- and/or femtocells. The private local cellular communicator network is at the disposal of a security system, whereby its data connections are not dependent for example on malfunctions resulting from occasional overloading of external cellular communicator networks.

[0011] The term "cellular communicator" is used in reference to a cellular communicator complying for example with GSM, WAP, GPRS, UMTS, CDMA and CDMA2000 standards, which can be a cell phone or a smart phone provided with features of a palmtop computer, and which enables making connection not only with a micro network but also with a macro cellular communicator network.

[0012] One embodiment is a method for communicating alarm information in the security system, which is in accordance with the above presented security system. The method comprising steps of sending wirelessly, by at least one location transmitter, a piece of address information to a cellular communicator that is within an operating range of the at least one location transmitter, receiving wirelessly, by a cellular communicator, a piece of address information from at least one location transmitter, sending wirelessly, by the cellular communicator, the piece of address in-formation to the control unit, and receiving, by a control unit, the piece of address information before sending it to a monitoring computer of the security system so that a location of the cellular communicator can be updated in the system.

[0013] One embodiment is a control unit, which is a part of the above presented security system, for commu-

nicating alarm information in a monitored target. The control unit comprising at least one processor, a memory, and at least one program intended for controlling messages of the system. The memory and the at least one program along with the at least one processor cause the control unit to create a private cellular network, to receive, by data transfer means, the alarm information over the private cellular network from a cellular communicator, to specify a recipient of the received alarm information, and to transmit, by the data transfer means, the received alarm information to the specified recipient. In addition, the control unit is caused to receive, by the data transfer means, a piece of address information, which the cellular communicator has received wirelessly from the at least one location transmitter, from said cellular communicator, and to send, by the data transfer means, the piece of address information to a monitoring computer of the system to update a location of said cellular communicator.

[0014] One embodiment is a method for communicating alarm information in a monitored target by means of a control unit of the security system, which is in accordance with the above presented security system. The method comprising steps of creating, by at least one processor, a private cellular network, receiving, by data transfer means, the alarm information over the private cellular network from a cellular communicator, specifying, by the at least one processor, a recipient of the received alarm information, and transmitting, by the data transfer means, the received alarm information to the specified recipient. In addition, the method comprising steps of receiving, by the data transfer means, a piece of address information, which the cellular communicator has received wirelessly from the at least one location transmitter, from said cellular communicator, and sending, by the data transfer means, the piece of address information to a monitoring computer of the system to update a location of said cellular communicator.

[0015] One embodiment is a computer program, which is configured to carry out the method and which comprising a code for creating, by at least one processor, a private cellular network, a code for receiving, by data transfer means, the alarm information over the private cellular network from a cellular communicator, a code for specifying, by the at least one processor, a recipient of the received alarm information, and a code for transmitting, by the data transfer means, the received alarm information to the specified recipient. In addition, the program comprising a code for receiving, by the data transfer means, a piece of address information, which the cellular communicator has received wirelessly from the at least one location transmitter, from said cellular communicator, and a code for sending, by the data transfer means, the piece of address information to a monitoring computer of the system to update a location of said cellular communicator.

[0016] Further embodiments are disclosed in the dependent claims.

[0017] The embodiments enable the use of ordinary cellular communicators as terminals of a security system with quickly learnable operating systems and familiar functions. Nor, in this case, is there an absolute need for separate terminals in the security system, but employees are able to use their own personal cellular communicators for phone calls and transmission of messages in the system.

[0018] In addition, the embodiments enable reducing costs as phone calls are not directed through an external service provider's switching center, but the internal phone calls of a monitoring system remain "within" the system, the prices of terminals are moderate in comparison with cordless telephones, and monitored facilities can be covered with a smaller number of base stations.

[0019] In addition, the embodiments enable facilitating maintenance of a security system's terminals as there is a dense network of businesses capable of repairing the terminals and, if necessary, a damaged terminal is easy to replace with a new reasonably priced device.

[0020] In addition, the embodiments readily allow for expanding a security system and adding more features.

Description of figures

[0021] The detailed description of figures explains preferred embodiments in a slightly more precise manner with reference to the accompanying figures, in which

- fig. 1 shows an exemplary basic view of one security system,
- fig. 2 shows an exemplary flow chart of one method, and
- fig. 3 shows an exemplary basic view of one apparatus.

Detailed description of figures

[0022] Fig. 1 depicts a security system 100 according to one embodiment, which is used for monitoring for example a senior care center, hospital or shopping mall. The security system 100 comprises a security system monitoring computer 110, which is used for managing the security system 100 for example by receiving alarm, notification and/or acknowledgement messages from the system's terminals, by communicating with terminals, and by tracking movements of terminal-carrying employees or patients within the premises of a monitored target.

[0023] Over a permanent connection, for example an Ethernet cable connection, or over a wireless connection, the monitoring computer 110 is in communication with a security system control unit 120, by means of which in the premises of a monitored target is created a private and encrypted cellular communicator network over which cell phones 130a, 130b, 130c, functioning as terminals of the security system, are capable of communicating, i. e. establishing a voice link and receiving a phone call or transmitting and receiving for example text or multimedia

messages, with other intra-system terminals or extra-system terminals. In addition, the cell phones 130a, 130b, 130c are also capable of communicating wirelessly over a short-range radio frequency connection, for example a Bluetooth connection, and/or an infrared connection.

[0024] The monitoring computer 110 provides a capability of tracking and controlling operation of the control unit 120 for example by installing and updating programs, and the monitoring computer 110 need not be located within the area of a monitored target but its physical location can be elsewhere. A single monitoring computer 110 is also able to keep track of several security systems 100, each of which has its own private cellular communicator network. For example, a single monitoring computer 110 can be capable of simultaneously monitoring the security systems 100 of a senior care center, hospital and shopping mall.

[0025] In the case of this example, the security system 100 includes two base stations 140a, 140b, which function as access points for the cell phones 130a, 130b, 130c to the security system's private cellular telephone network, and the operation of which is controlled by a base station controller (not shown in the figure), which can be either a separate device in communication with the control unit 120 or a computer program executed by the control unit 120. The base stations 140a, 140b, which are in communication with the control unit 120 over a cable connection, are intended to be located in such a way that the picocells and/or femtocells provided thereby become overlapped and the monitored target has no areas left without a capability of establishing a connection to the closest base station 140a, 140b. The system may further include a private cellular telephone network's above-mentioned switching center, which may also be either a separate device in communication with the control unit 120 or a computer program executed by the control unit 120. A transfer of data, for example between the cell phone 130a and the control center 120, can be conducted not as shown in the figure, but over a chain of base stations, such that the data departing from the cell phone 130a travels by way of the base station 140a wirelessly to the base station 140b, and thence further to the control center 120.

[0026] Communications between the security system 100 and its cell phones 130a, 130b, 130c and external networks, i.e. a cellular communicator network 150 and a public switched telephone network 160, take place also by way of the control unit 120 from the area of a micro cellular communicator network maintained by the security system 100, i.e. from the area of a monitored target. The cell phones 130a, 130b, 130c can be used in the way of ordinary cell phones when operated outside a target, and can be used for making contact over the external cellular telephone network 150 for example with another cell phone 130a, 130b, 130c located within a target area and vice versa. A connection between the external network 150 and the security system's private network is established for example by means of a device serving as a gateway and a telephone exchange (neither is shown in the figure). The gateway and the telephone exchange can be separate physical devices, or they can be either components included in the control unit 120 or computer programs executed thereby.

[0027] In an elderly care environment, for example, a call and/or an alert message of the security system can be produced in the cell phone 130a of a senior care center's resident with some predetermined button, combination of buttons, or by way of a user interface menu of the cell phone from the security system's own application. In this case, the call and/or alert message becomes directed over the closest base station 140a to the control unit 120, which communicates the message to the terminal designated as a recipient of the message, which terminal can be the monitoring computer 110, another cellular communicator 130b, 130c belonging to an attendant of the senior care center, or both. The transmitted call and/or alert message may contain for example a time of transmission, the name, the bed, the room and/or apartment number of a senior care center's resident, a reason for the message, which can be a simple call for the attendant or an alert notification to which the message-receiving attendant must respond immediately, and/or a possibility of establishing a voice connection with the sender of the message. In case the message only proceeds to the monitoring computer 110, its operator, since the monitoring computer 110 has knowledge about the location of the senior care center's attendants, i.e. their cell phones 130b, 130c, in the service center, is able to determine which one of the attendants is closest to the resident who has sent the call and/or alert message, and is able to forward the message as such or in a modified form to this particular closest attendant.

[0028] Access control for the doors of a senior care center can be implemented in the security system 110 by means of door terminals 170, which are provided with a short range wireless connection, for example a radio frequency connection, for example Bluetooth, or an infrared connection. In this case, when for example an attendant, carrying his/her personal cell phone 130b, approaches a door terminal 170, the cell phone 130b will be identified by the door terminal 170. In case the cell phone 130b is not one of those cell phones with a permission to pass through this particular door, the door does not open, and if, on the other hand, the cell phone 130b, i.e. its user, is authorized to use the door in question, the door terminal 170 gives the electric door locking system a command to unlock. Hence, in the process of opening the door or when the cellular communicator 130b finds itself within a door terminal's operating range, the door terminal 170 may transmit to the cell phone 130b information intended for the monitoring computer 110 about cell phones that have passed through this particular door, the cell phone 130b communicating the information by means of the base station 140b and the control unit 120 to the monitoring computer 110. Thus, the security system 100 acquires information about which cell

phone 130a, 130b, 130c, i.e. its user, has passed through which door. The door terminal 170 can be set to transmit access control information either at fixed intervals, whereby, when a particular time cycle draws to a close, the next cell phone 130a, 130b, 130c, which finds itself within the door terminal's operating range, will be assigned to communicate the access control information, and/or whenever the cell phone 130a, 130b, 130c finds itself within its operating range.

[0029] Surveillance for the outer entrances or the like of a senior care center can be implemented by means of a security-camera controlling computer 172a and a security camera 172b. The security-camera controlling computer 172a is linked to the control unit 120 for example over a permanent Ethernet cable connection or a wireless connection. When the computer 172a or its user detects an anomaly in the security camera image, there is prepared in the computer 172a an alarm message, which contains for example a time of alarm, entrance identification data, a reason for alarm and/or a security camera image, to be transmitted either to the monitoring computer 110, from which is forwarded an alarm message or a checking request for example to the cell phone 130a, 130b, 130c of an attendant presently closest to this particular outer entrance, or directly to the cell phone 130a, 130b, 130c of one or more pre-designated attendants. Alternatively, an anomaly is detected by the monitoring computer 110, to which security camera image data is communicated, or by its user, whereby an alarm message, which contains for example a time, entrance identification data, a reason for alarm and/or a security camera image, is prepared in the monitoring computer 110 and can be transmitted for example to the cell phone 130a, 130b, 130c of an attendant presently closest to this particular outer entrance or directly to the cell phone 130a, 130b, 130c of one or more pre-specified attendants.

[0030] To the control unit 120 can also be linked, by means of a permanent cable connection, a safety phone 174 and a wireless radio trigger button 176a, 176b, which is capable of communicating wirelessly therewith and which can be for example a radio trigger button 176b worn around the neck or a clip-equipped radio trigger button carried in the pocket (not visible in the figure). The senior care center's resident can transmit an alert message or a call directly from appropriate safety phone buttons, whereby the message proceeds via the control unit 120 for example to the monitoring computer 110 and/or to one or more pre-specified attendant's cell phones 130a, 130b, 130c. If necessary, the resident may establish a voice link over the safety phone's microphone and the control unit 120 to the monitoring center 110 or to any of the pre-specified cell phones 130a, 130b, 130c. In an emergency, when a senior care center's resident is not able at a sudden onset of illness to press the alert button of a safety phone, he/she may send, by pressing the alert button of a radio trigger, an alert message over a radio connection to the safety phone 174, which communicates the message forward as already described above. Alternatively, if a resident, at a sudden onset of illness, is not in the vicinity of the safety phone 174, whereby the operating range of the wrist-held radio trigger button 176b is not enough, yet he/she has the cell phone 130c in his/her immediate proximity, he/she can use the radio trigger button 176b to send an emergency message to the cell phone 130b, which communicates the emergency message via the base station 140b to the control unit 120, which in turn communicates the emergency message to the monitoring computer 110 and/or to one or more pre-specified attendant's cell phones 130a, 130b. Thus, the location of the cell phone 130c, i. e. the base station 140b, can be used for pinpointing the resident's location in the senior care center.

[0031] On the other hand, it is also possible to employ a USB cable for setting the cell phone 130a, 130b, 130c in communication with a call button terminal (not shown in the figure), having press buttons for an alert message and a call. Thus, when a resident calls for an attendant, the cell phone 130a, 130b, 130c, after detecting that the press button has been pressed, prepares a call message and sends over the base station 140a, 140b and the control unit 120 to the monitoring computer 110 and/or to one or more pre-specified attendant's cell phones 130a, 130b, 130c.

[0032] If in the security system 100 is required positioning more precise than cell-level precision, for example when a monitored target comprises several stories, it is possible to employ for example fixedly wall-mounted location transmitters (not shown in the figure), which transmit address information wirelessly, for example over a Bluetooth or infrared connection. When finding itself within the operating range of a location transmitter, the cell phone 130a, 130b, 130c receives a piece of address information sent by the location transmitter and the cell phone user sends the piece of address information by means of some predetermined button, combination of buttons, or menu of the cell phone's user interface from the security system's own application further via the control unit 120 to the monitoring computer 110, which updates a location of the cell phone 130a, 130b, 130c in one or more of its own databases.

[0033] Fig. 2 shows a method 200 according to one embodiment for communicating an alarm, call, notification and/or inquiry message in a security system, which is located in a shopping mall, wherein a starting step 210 comprises activating and setting up to service condition the security system's control unit and programs to be executed therein, as well as the security system's base stations, terminals, monitoring equipment and monitoring computer along with its programs, all installed within the shopping mall area.

[0034] In a step 220, the security company employee, who is the current user of a cell phone included in the security system, discovers suspicious signs in the shopping mall and prepares in his/her personal cell phone an alarm message by using a menu included in the cell

phone.

[0035] One embodiment relates to a method as set forth in any of the preceding embodiments, said method comprising preparing alarm information in a cellular communicator and/or preparing alarm information in a first external security device, which, after detecting some predetermined event, prepares alarm information and conveys the alarm information to the cellular communicator over a short-range connection.

[0036] After preparing a message, which is in a standard pattern or which can be modified as the case may be, the cell phone user sends the alarm message in a step 230 over the closest base station to the control unit.

[0037] One embodiment relates to a method as set forth in any of the preceding embodiments, which comprises transmitting alarm information from a cellular communicator over a base station of a private cellular network to the security system's control unit which is in communication with the private cellular network.

[0038] The control unit receives the alarm message from the base station in a step 240 and deduces in a step 250, for example according to pre-specified instructions stored in the memory of a control computer, transmitter information, message contents or a message type and/or, on the basis of receiver information, a receiver of the alarm message. Alternatively, it is possible to specify that the message receiver is always the monitoring computer and, depending on a type of message, certain pre-specified cell or smart phones included in the security system.

[0039] One embodiment relates to a method as set forth in any of the preceding embodiments, which further comprises receiving alarm information from a second external security device, which, after detecting some predetermined event or anomaly, prepares alarm information and sends the alarm information to the security system's control unit.

[0040] One embodiment relates to a method as set forth in any of the preceding embodiments, which comprises receiving from the security system's monitoring computer, and/or from a second external security device, alarm and/or surveillance information and communicating the alarm or surveillance information to a cellular communicator specified as the receiver.

[0041] Having deduced, on the basis of an alarm message and/or pre-specified instructions, a receiver or receivers, the control unit transmits the alarm message either as such or in a modified form to one or more specified receivers in a step 260, and the alarm message communication method terminates in a step 270.

[0042] One embodiment relates to a method as set forth in any of the preceding embodiments, wherein the private cellular network comprises a pico- or femtocell established by one or more base stations, which cell enables covering a building which is monitored by means of a security system, including one or more monitoring computers, a control unit, and one or more external security devices.

[0043] One embodiment relates to a method as set forth in any of the preceding embodiments, wherein the cellular communicator is a cell phone or a smart phone.

[0044] One embodiment relates to a method as set forth in any of the preceding embodiments, wherein the security system's control unit comprises not only a server computer but also at least one of the following: a base station, a base station controller, and a switching center.

[0045] Fig. 3 shows a security system's control unit 300 according to one embodiment, which enables communicating alarm information.

[0046] The control unit 300, i.e. a server computer, comprises one or more processors 310, which enable executing for example instructions determined by a user or an application program, and processing data. The control unit 300 has naturally an external or internal memory 320 for storing and preserving data, for example instructions and user information, one or more programs 330 intended for controlling the security system's messages, a program 340 possibly intended for controlling base stations, and a program (switching center) 350 intended for controlling base station controllers and other components of a private cellular network, as well as one or more programs 360 intended for communication with external networks. The control unit 300 may also include several memories 320, for example all of which are internal or external memories or some of the memories are internal and some external.

[0047] The control unit 300 further comprises a user interface 370, which is provided for example with the control unit's own switches, a keyboard, a cursor or mouse, a touch display and/or a touchpad, by means of which the user is able to input instructions and data to the control unit 300, and/or a display and data transfer means 380 for receiving and transmitting data over a cable connection or a wireless connection.

[0048] One embodiment relates to an apparatus, which is set forth in any of the preceding embodiments and which is additionally adapted to receive alarm information from a second external security device, which, after detecting some pre-specified event, prepares alarm information and transmits the alarm information to a security system's control unit.

[0049] One embodiment relates to an apparatus, which is set forth in any of the preceding embodiments and which is additionally adapted to receive from a security system's monitoring computer, and/or a second external security device, alarm and/or surveillance information and to communicate the alarm and/or surveillance information to a cellular communicator specified as the receiver.

[0050] One embodiment relates to an apparatus as set forth in any of the preceding embodiments, which includes not only a server computer but also at least one of the following: a base station, a base station controller, and a switching center.

[0051] One or more programs 330, present in the control unit's memory 320 and intended for controlling the

security system's messages, make it possible, along with the processor 310, that methods according to embodiments are capable of being executed in the control unit 300.

[0052] One embodiment relates to a computer program, which is set forth in any of the preceding embodiments and which additionally has a code for receiving alarm information from a second external security device, which, after detecting some pre-specified event, prepares alarm information and transmits the alarm information to a security system's control unit.

[0053] One embodiment relates to a computer program as set forth in any of the preceding embodiments, which has a code for receiving alarm and/or surveillance information arriving from a security system's monitoring computer and/or from a second external security device, and a code for communicating the alarm and/or surveillance information to a cellular communicator specified as the receiver.

[0054] The above description only presents a few embodiments. A principle can naturally be varied within the scope of protection defined by the claims, regarding for example implementation details and application fields.

Claims

1. A security system (100) for communicating alarm information in a monitored target, comprising
a control unit (120, 300) for creating a private cellular network,
cellular communicators (130a, 130b, 130c) for functioning as terminals in the system,
base stations (140a, 140b) for functioning as an access point for the cellular communicators to the private cellular network, and
at least one location transmitter for positioning the cellular communicators, which control unit is configured to receive (240) the alarm information over the private cellular network from a cellular communicator (130a, 130b, 130c), to specify (250) a recipient of the received alarm information, and to transmit (260) the received alarm information to the specified recipient,
which cellular communicators can communicate with other intra-system or extra-system terminals,
which cellular communicators are cell phones (130a, 130b, 130c), and
which base stations locate in a such way that it is possible to establish a connection to one of the base stations everywhere in the monitored target,
wherein the system the control unit receives a piece of address information, which one of the cellular communicators has received wirelessly from the at least one location transmitter, from said cellular communicator (130a, 130b, 130c) and sends the piece of address information to a monitoring computer (110) of the security system to update a location of said cellular communicator.

2. The system according to the preceding claim, wherein the at least one location transmitter has an operating range and the at least one location transmitter transmits the piece of address information wirelessly within its operating range.

3. The system according to any of the preceding claim, wherein the at least one location transmitter transmits the piece of address information over a Bluetooth or infrared connection.

4. The system according to any of the preceding claim, wherein the at least one location transmitter is a fixedly wall-mounted location transmitter.

5. The system according to any of the preceding claim, wherein the piece of address information is sent from the cellular communicator by means of a predetermined button, a combination of buttons, or a menu of an interface of a system application in the cellular communicator.

6. The system according to any of the preceding claims, wherein each base station (140a, 140b) of the private cellular network establishes a picocell or femtocell, and established cells are configured to cover the monitored target, which is a building.

7. The system according to any of the preceding claims, wherein the control unit comprises not only a server computer but also at least one of the following: a base station, a base station controller, and a switching center.

8. A method for communicating alarm information in the security system (100) according to any of the preceding claims, comprising steps of
sending wirelessly, by at least one location transmitter, a piece of address information to a cellular communicator (130a, 130b, 130c) that is within an operating range of the at least one location transmitter,
receiving wirelessly, by a cellular communicator (130a, 130b, 130c), a piece of address information from at least one location transmitter,
sending wirelessly, by the cellular communicator, the piece of address information to the control unit, and
receiving, by a control unit (120, 300), the piece of address information before sending it to a monitoring computer (110) of the security system so that a location of the cellular communicator can be updated in the security system.

9. A control unit (120, 300) of a security system (100) for communicating alarm information in a monitored target, comprising
at least one processor (310),

a memory (320), and
at least one program (330) intended for controlling messages of the system,
wherein the memory and the at least one program along with the at least one processor cause the control unit
to create a private cellular network,
to receive (240), by data transfer means (380), the alarm information over the private cellular network from a cellular communicator (130a, 130b, 130c),
to specify (250) a recipient of the received alarm information,
to transmit (260), by the data transfer means, the received alarm information to the specified recipient,
to receive, by the data transfer means, a piece of address information, which the cellular communicator has received wirelessly from the at least one location transmitter, from said cellular communicator, and
to send, by the data transfer means, the piece of address information to a monitoring computer (110) of the system to update a location of said cellular communicator.

10. A method for communicating alarm information in a monitored target by means of the control unit (120, 300) of a security system (100) according to claim 9, comprising steps of
creating, by at least one processor (310), a private cellular network, receiving (240), by data transfer means (380), the alarm information over the private cellular network from a cellular communicator (130a, 130b, 130c),
specifying (250), by the at least one processor, a recipient of the received alarm information,
transmitting (260), by the data transfer means, the received alarm information to the specified recipient,
receiving, by the data transfer means, a piece of address information, which the cellular communicator has received wirelessly from the at least one location transmitter, from said cellular communicator, and
sending, by the data transfer means, the piece of address information to a monitoring computer (110) of the system to update a location of said cellular communicator.

11. A computer program (330) configured to carry out the method according to claim 10.

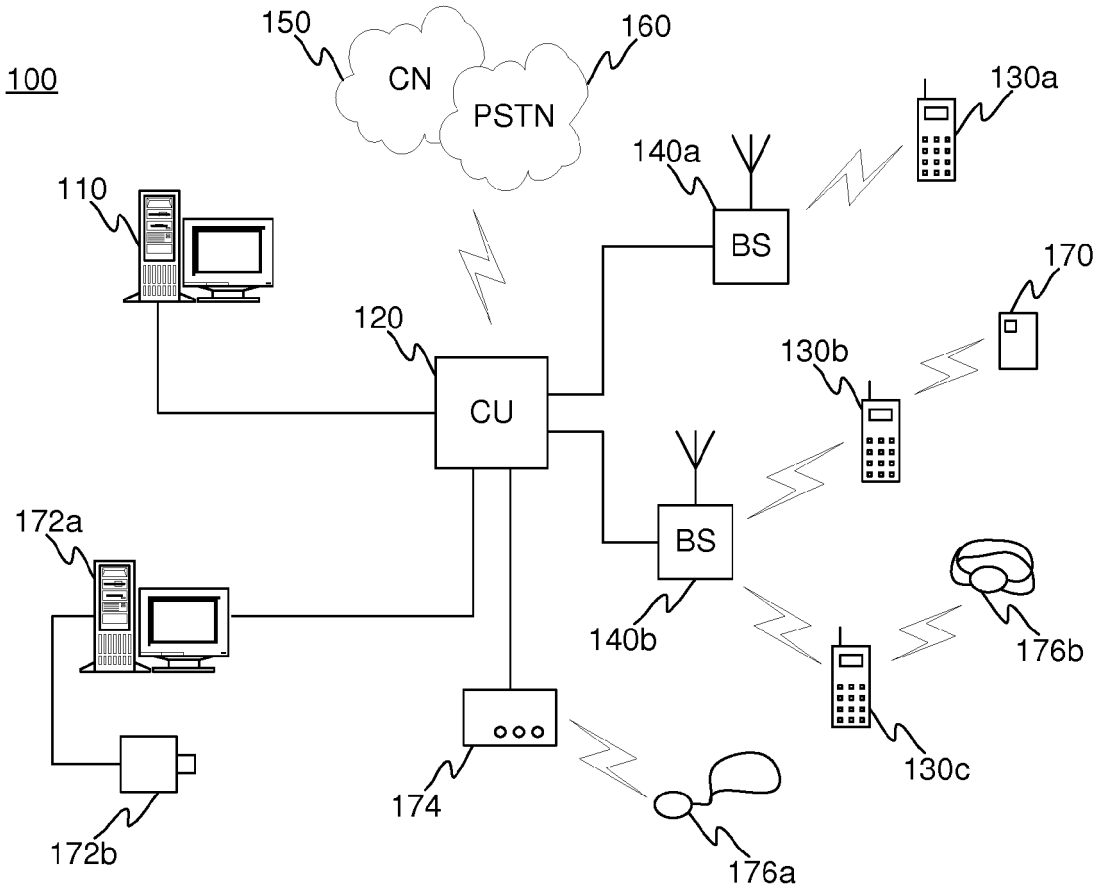
100
150
CN
160
PSTN
130a
140a
BS
110
170
120
130b
CU
BS
172a
140b
176b
130c
174
172b
176a

Fig. 1

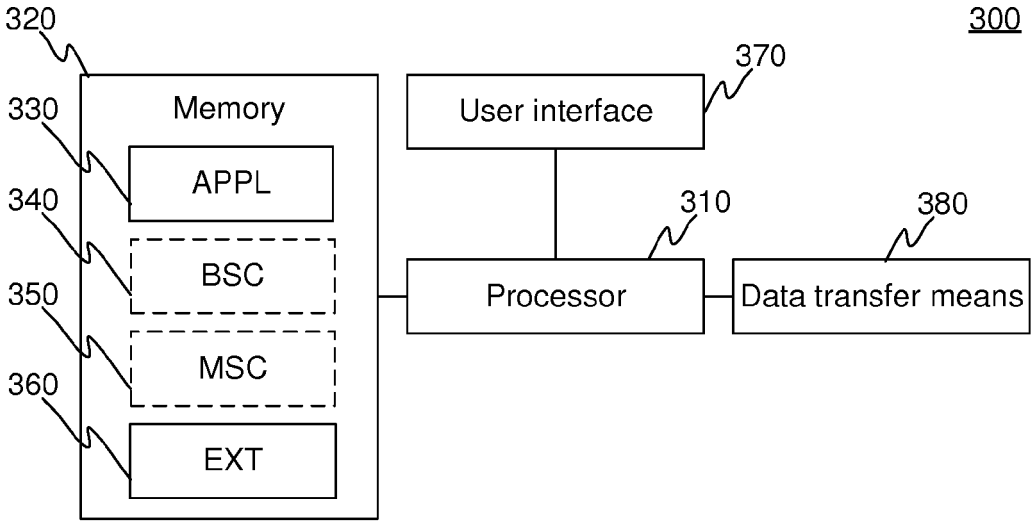
320
300
370
330
Memory
User interface
APPL
340
310
380
BSC
Processor
Data transfer means
350
MSC
360
EXT

Fig. 3

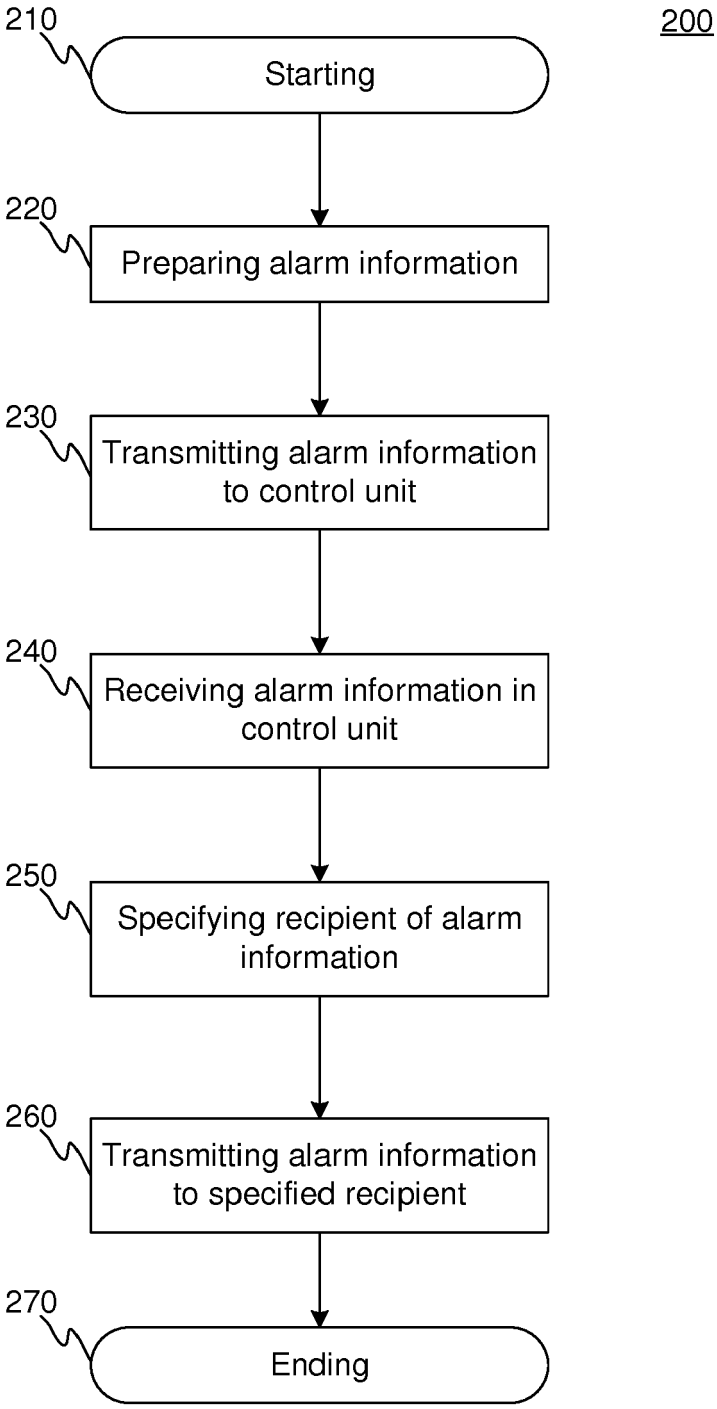
200
210
Starting
220
Preparing alarm information
230
Transmitting alarm information to control unit
240
Receiving alarm information in control unit
250
Specifying recipient of alarm information
260
Transmitting alarm information to specified recipient
270
Ending

Fig. 2

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EUROPEAN SEARCH REPORT

Application Number
EP 18 15 0430

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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	30 May 2018	Fagundes-Peters, D

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