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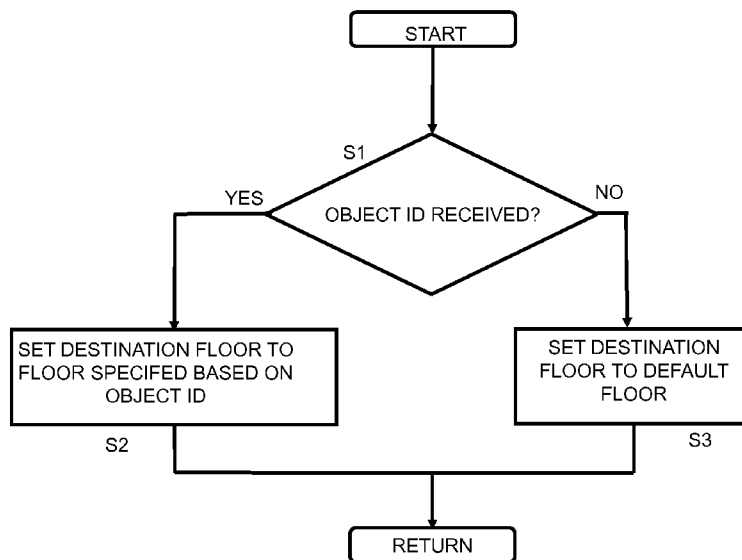


Fig. 2

(57) Abstract: An apparatus and a method are disclosed by which it is determined whether a receiver has received an object identifier, and wherein, in case the receiver has received the object identifier, entry control information is created based on the object identifier, and in case the receiver has not received the object identifier, the entry control information is created based on default information.



ELEVATOR ENTRY CONTROL SYSTEM AND METHOD

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Field of the Invention

The present invention relates to an apparatus, a method and a computer program product for controlling an elevator or a door key.

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Related background Art

The following description of background art and examples may include insights, discoveries, understandings or disclosures, or associations, together with disclosures not known to the relevant prior art, to at least some examples of embodiments of the present invention but provided by the invention. Some of such contributions of the invention may be specifically pointed out below, whereas other of such contributions of the invention will be apparent from the related context.

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Some examples of the present disclosure relate to elevators and/or automatic door keys, and in particular to a so-called remote call-giving application. The remote call-giving application (either implemented into an entrance door access reader or a mobile application) can create an automated call to a so-called "home floor" which is defined for each user separately. That is, for example the mobile application on a mobile phone of the user sends information regarding the target floor, e.g., the home floor mentioned above, to a control system of the elevator, and the elevator automatically sets the home floor as the destination floor.

30 Alternatively, the entrance door access reader reads some ID information from e.g., a mobile phone of the user, and sets, based on this ID information, the home floor of the user as the destination floor. Thus, the user is not required to input the destination floor manually.

However, this scenario may be disadvantageous e.g. in residential buildings in situations where the behavior of the individual alters from the "default", meaning that he/she does not go directly to the home.

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This may occur e.g. in situation where a person arrives home with the bike and takes it first to bike storage in the basement after that gets to the home. With the current applications, the automatic home floor call creates a false call, namely such that the home floor of the user is set as the destination floor. Thus, an unnecessary ride is caused, reducing the elevator system capacity from the other users and at the same time the remote call giving application fails in providing the improved end-user experience. This limited capability reduces the overall attractiveness of remote call giving functionality in general.

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Summary of the Invention

Thus, it is an object of the present invention to overcome this disadvantages and to provide a method and an apparatus by which the capability of the remote call giving functionality is enhanced.

According to a first aspect of the present invention an apparatus is provided which comprises a receiver for receiving identifiers, and a controller, wherein the controller is configured to determine whether the receiver has received an object identifier, to create, in case the receiver has received the object identifier, entry control information based on the object identifier, and to create, in case the receiver has not received the object identifier, the entry control information based on default information.

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According to a second aspect of the present invention a method is provided which comprises:

determining whether a receiver has received an object identifier,

creating, in case the receiver has received the object identifier, entry control information based on the object identifier, and

creating, in case the receiver has not received the object identifier, the entry control information based on default information.

5

The first and second aspects may be modified as follows:

The apparatus may be or may be a part a mobile device, or the method may be carried out in a mobile device, wherein the created entry control
10 information may be sent to an elevator control system or a door key control system.

Alternatively, the apparatus may be or may be part of an elevator control system or a door key control system, or the method may be carried out in
15 a door key control system, and the receiver may be configured to receive a user identifier, wherein in case the receiver has received the user identifier, it may be determined whether the receiver has received the object identifier.

20 In this case, it may be determined whether the user identifier and the object identifier correspond to each other.

The entry control information may comprise destination indication information for an elevator. In this case, default destination indication
25 information may be created as the entry control information when no object identifier is received, and object related destination indication information may be created as the entry control information when the object identifier is received.

30 The entry control information may comprise door key control information for an automatic door key. In this case, default door key control information may be created as the entry control information when no object identifier is received, and object related door key information may

be created as the entry control information when the object identifier is received.

5 The entry control information to be created based on the object identifier may be configurable by a user.

10 According to a third aspect, an apparatus is provided which comprises a receiver and a controller, wherein the controller is configured to detect whether an object is present by checking whether the receiver receives an object identifier corresponding to the object, to determine that an object is removed when the object identifier is no longer received, and to issue a warning when the object is removed while no user identifier corresponding to the object identifier is received.

15 The third aspect may be modified as follows:

The controller may be configured to operate a lock for the object, and to open the lock for the object when a user identifier corresponding to the object identifier is received.

20

The controller may be configured to receive an instruction from the user corresponding to the user identifier to override issuing the warning.

25 The controller may be configured to receive an instruction from the user corresponding to the user identifier to open the lock for the object and to open the lock based on the received instruction.

30 According to a fourth aspect, a method is provided which comprises detecting whether an object is present by checking whether a receiver receives an object identifier corresponding to the object, determining that an object is removed when the object identifier is no longer received, and

issuing a warning when the object is removed while no user identifier corresponding to the object identifier is received.

The fourth aspect may be modified as follows:

5

The method may further comprise
operating a lock for the object, and
opening the lock for the object when a user identifier corresponding to the object identifier is received.

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The method may further comprise receiving an instruction from the user corresponding to the user identifier to override issuing the warning.

15

The method may further comprise receiving an instruction from the user corresponding to the user identifier to open the lock for the object and to open the lock based on the received instruction.

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According to a further aspect, a system is provided which comprises an apparatus according to any of the first and third aspects and their modifications, and an object device for providing the object identifier.

The system may both comprise an apparatus according to the first aspect and an apparatus according to the third aspect.

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The object device may comprise a transmitter for transmitting the object identifier or means for providing a radio frequency identification.

The object device may be a tag which can be removably attached to an object.

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In addition, according to another aspect of the present invention, there is provided a computer program product for a computer, including software code portions for performing the steps of the above defined methods, when

said product is run on the computer. The computer program product may include a computer-readable medium on which said software code portions are stored. Furthermore, the computer program product may be directly loadable into the internal memory of the computer or transmittable via a network by means of at least one of upload, download and push procedures.

According to a still further aspect of the present invention an apparatus is provided which comprises means for determining whether an object identifier has been received, means for creating, in case the object identifier has been received, entry control information based on the object identifier, and means for creating, in case the receiver has not received the object identifier, the entry control information based on default information.

According to another aspect, an apparatus is provided which comprises means for detecting whether an object is present by checking whether a receiver receives an object identifier corresponding to the object, means for determining that an object is removed when the object identifier is no longer received, and means for issuing a warning when the object is removed while no user identifier corresponding to the object identifier is received.

The above aspects may be modified similar to the first and third aspects described above.

Brief Description of the Drawings

These and other objects, features, details and advantages will become more fully apparent from the following detailed description of embodiments of the present invention which is to be taken in conjunction with the appended drawings, in which:

Fig. 1 shows a control apparatus according to some embodiments of the present invention,

Fig. 2 shows a method according to some embodiments of the present
5 invention,

Fig. 3 shows a security apparatus according to a fifth embodiment of the present invention, and

10 Fig. 4 shows a method according to the fifth embodiment of the present invention.

Detailed Description of embodiments

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In the following, description will be made to embodiments of the present invention. It is to be understood, however, that the description is given by way of example only, and that the described embodiments are by no means to be understood as limiting the present invention thereto.

20

It is to be noted that the following examples and embodiments are to be understood only as illustrative examples. Although the specification may refer to "an", "one", or "some" example(s) or embodiment(s) in several locations, this does not necessarily mean that each such reference is
25 related to the same example(s) or embodiment(s), or that the feature only applies to a single example or embodiment. Single features of different embodiments may also be combined to provide other embodiments. Furthermore, terms like "comprising" and "including" should be understood as not limiting the described embodiments to consist of only those features
30 that have been mentioned; such examples and embodiments may also contain features, structures, units, modules etc. that have not been specifically mentioned.

Fig. 1 shows a schematic diagram illustrating a configuration of a general control apparatus in which some examples of embodiments are implementable. In particular, the control apparatus comprises a processor or controller 11, and a transmitter/receiver 12. The control apparatus may
5 further comprise a memory 13 in which programs to be carried out and data required are stored.

It is noted that the transmitter/receiver 12 may also be a receiver only, i.e., the transmitter part or functionality is optional.

10

The controller 11 is configured to determine whether the receiver has received an object identifier (e.g., from a tag 2 shown in Fig. 1), to create, in case the receiver has received the object identifier, entry control information based on the object identifier, and to create, in case the
15 receiver has not received the object identifier, the entry control information based on default information.

Hence, according to this general embodiment, it is checked whether an object identifier is received, e.g., from a tag attached to a certain object.
20 If this is the case, the entry control information is created based on this object identifier, otherwise based on default information.

A more concrete application is for example the use in connection with an elevator.

25

In this case, the entry control information specifies or indicates a destination indication information, e.g., a destination floor. When no object is detected, i.e., when no object identifier is received, the default information is used. That is, for example the home floor of a user is set as
30 the destination floor. When an object identifier is received, an object related destination floor is set as the destination floor.

This process is shown in Fig. 2. In step S1, it is detected whether an object ID (object identifier) has been received. If yes, then the destination floor is set based on the object ID in step S2 (e.g., the destination floor is set to a floor on which a bike storage is located, in case the object is a bike).
5 Otherwise, (no in step S1), the destination floor is set to a default floor (e.g., home floor of the user) in step S3.

The control apparatus may be provided in a mobile device of a user, or may be provided in an elevator control system or a door key control
10 system.

In the following, some more detailed embodiments are described.

According to a first embodiment, the control apparatus is provided in a
15 mobile device of a user and is used in connection with an elevator. For example, the control apparatus is provided in a mobile phone (also referred to as MOP) with a corresponding application program (app).

According to the first embodiment, a simple, removable sensor is added
20 that is recognized by the remote call giving application, i.e., the above-reference application program. For example, such a sensor may be, for example, a transmitter such as a Bluetooth beacon or the like, or may be a long range RFID wireless identifier.

25 In case of a phone app (i.e., the application running on the mobile phone as mentioned above) the logic is as stated below:

In the app, the user specifies the home floor, and alternative floor for each
30 sensor he/she has.

The user attaches the sensor that is defined to be for example a "bike storage floor" -tag to a bike.

Now, when user approaches with the bike the main entrance and the "bike storage" tag is recognized together with the user, the automated elevator-call is made to the bike storage floor instead of the home floor.

- 5 When user leaves the bike to the storage, and the connection between the mobile app and tag breaks, this triggers automated call from storage floor to real home floor.

10 That is, according to the present embodiment, instead of generating automatic call to user's home floor, a call to another floor is generated depending on object(s) (bike etc.) with some identifier (for example Bluetooth beacon, long range RFID etc. wireless identifier).

15 Thus, summarizing, according to the first embodiment, a user may have a mobile phone (MOP with an application program) that is able to read object's ID. When a user approaches for example main entrance of his/her residence building, MOP automatically send a destination call (start floor, target floor) to the elevator system to defined floor or alternatively MOP send object ID and user ID (phone number for ex.) to some background
20 system that will generate the defined destination call. Destination floors for each object ID are be configurable by the user.

An approach of the user to the main entrance etc. points in the building can be detected based on a GPS signal, or there can be close the point
25 some wireless identifier (location ID) that can be read by MOP.

That is, the general procedure as described above in connection with Fig. 2 can be started when it is detected that the user has approached the main entrance or the like.

30

According to a second embodiment, the control apparatus is provided in an elevator control system.

Thus, according to the second embodiment, the determination whether an object ID is received or not (step S1 in Fig. 2) is not carried out by a mobile phone of the user, but by an elevator control system.

- 5 In this case, the user has to have some identifier (Bluetooth, RFID), and when approaching the main entrance etc., a reader at the point reads both user ID and object's ID and send both to a background system that generates the defined destination call based on IDs.
- 10 That is, similar as described above in connection with Fig. 2, when the reader (as an example for a receiver) receives both a user ID and an object ID, the destination floor is set to, e.g., a bike storage floor. When only a user ID and no object ID is received, then the destination floor is set to the home floor.

15

The first and second embodiments may also be modified such that they are not used in connection with an elevator, but with door keys. This is described in the following as third and fourth embodiments.

- 20 In this case, the entry control information specifies or indicates a door key control information for a door key (e.g., an automatic door key which may be remotely opened or locked). When no object is detected, i.e., when no object identifier is received, the default information is used. That is, for example home door key control information for controlling a home door of
- 25 a user (e.g., entrance door to his flat) is set as the door key control information. When an object identifier is received, an object related door key control information is set as the door key control information.

- The third embodiment is a modification of the first embodiment, namely
- 30 such that the control apparatus is provided on a mobile phone of the user. Then, the door key scenario is as follows:

When an object ID (e.g., a tag) is detected with the app, the bike storage door locking is automatically opened instead of a possible other door. If the tag is not detected by the app, the bike storage door lock is not opened.

- 5 The fourth embodiment is a modification of the third embodiment, namely such that the control apparatus (Fig. 1) is provided in a door control system.

10 In the example of the bike storage door as mentioned above, the door control system checks whether it detects the object ID (i.e., the object ID provided by the tag attached to the bike) and a user ID (which may be provided by tag carried by a user or by a mobile phone carried by the user). If both are present, then the bike storage door is opened.

- 15 Thus, according to the third and fourth embodiments, security can be enhanced, and at the same time easy handling for the user is achieved.

According to a fifth embodiment, a possible extension to the above-described procedures is described.

20

In particular, as illustrated in Fig. 3, a security apparatus 3 according to the fifth embodiment comprises a transmitter/receiver 32 and a controller 31. The controller 31 is configured to detect whether an object is present by checking whether the receiver receives an object identifier corresponding to the object (for example from a tag 2), to determine that an object is removed when the object identifier is no longer received, and to issue a warning when the object is removed while no user identifier corresponding to the object identifier is received. The security apparatus 3 may further comprise a memory 33 in which programs to be carried out and data required are stored. Similar as in case of the control apparatus 1 shown in Fig. 1, the transmitter/receiver 32 may also be a receiver only, i.e., the transmitter part or functionality is optional.

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Fig. 4 shows a method according to the fifth embodiment. In step S11, it is determined whether an object is removed, namely by checking whether the object identifier is no longer received. If this is the case, it is checked in step S12, upon detecting the object is being removed, whether a
5 corresponding user identifier is received. If yes, then the procedure is terminated. If not, i.e., when the object is being removed without that a user identifier is detected, a warning is issued in step S13.

In the following, an example is described in which the above-described
10 security apparatus is applied to a bike storage as described above. The bike storage is equipped with a reader (as an example for the security apparatus including the receiver) capable of sensing all the tags from the bikes. If the bike with the tag is removed from the storage, without tag being "paired" with the mobile app, background system generates an alert
15 via user's mobile app that there may be an attempt to steal one's bike.

According to a modification, the controller may be modified such that, when it receives an instruction from the user corresponding to the user identifier, it overrides issuing the warning. That is, by sending an
20 instruction remotely, the user may allow removing the object (such as a bike), for example when borrowing the bike to somebody else.

According to a further modification of the fifth embodiment, the object may be secured by lock, and the controller may operate this lock. Then, the lock
25 for the object (e.g., the bike) is opened only when a user identifier corresponding to the object identifier is received.

Similar as described above, the user may override this measure, namely such that, when the controller receives an instruction from the user
30 corresponding to the user identifier to open the lock for the object, it opens the lock based on the received instruction. That is, the user may remotely open the lock.

For the example of the bike storage given above, this means that the bike storage may have fixed locking system for the bikes that can be locked and released with the same app locally or remotely, in case done remotely (e.g. releasing the bike for a friend who is borrowing it), the previously
5 described alert functionality is disabled.

Embodiments of the present invention are not limited to the details of the embodiments as described above, and various modifications are possible.

10 For example, in the above described first and third embodiments, the control apparatus was described as a mobile phone with a corresponding application program ("app"). However, it is not necessary that a mobile phone is used. For example, also another mobile device can be used, on
15 which a corresponding application can run. As a further alternative, a dedicated mobile device can be used which is specifically designed to perform the functions as described in the first embodiment and its modifications.

Moreover, the above-described first and second embodiments may be
20 combined with the third and fourth embodiments. That is, the procedures described above may not only be used for specifying a certain destination floor, but also at the same time for unlocking a door.

It is to be understood that any of the above modifications can be applied
25 singly or in combination to the respective aspects and/or embodiments to which they refer, unless they are explicitly stated as excluding alternatives.

Furthermore, control elements (e.g., the control apparatus 1), as well as corresponding functions as described herein, and other elements, functions
30 or applications may be implemented by software, e.g. by a computer program product for a computer, and/or by hardware. For executing their respective functions, correspondingly used devices, elements or functions may include several means, modules, units, components, etc. (not shown)

which are required for control, processing and/or communication/signaling functionality. Such means, modules, units and components may include, for example, one or more processors or processor units including one or more processing portions for executing instructions and/or programs and/or for processing data, storage or memory units or means for storing instructions, programs and/or data, for serving as a work area of the processor or processing portion and the like (e.g. ROM, RAM, EEPROM, and the like), input or interface means for inputting data and instructions by software (e.g. floppy disc, CD-ROM, EEPROM, and the like), a user interface for providing monitor and manipulation possibilities to a user (e.g. a screen, a keyboard and the like), other interface or means for establishing links and/or connections under the control of the processor unit or portion (e.g. wired and wireless interface means etc.) and the like. It is to be noted that in the present specification processing portions should not be only considered to represent physical portions of one or more processors, but may also be considered as a logical division of the referred processing tasks performed by one or more processors.

For the purpose of the present invention as described herein above, it should be noted that

- embodiments suitable to be implemented as software code or portions of it and being run using a processor or processing function are software code independent and can be specified using any known or future developed programming language, such as a high-level programming language, such as objective-C, C, C++, C#, Java, Python, Javascript, other scripting languages etc., or a low-level programming language, such as a machine language, or an assembler.

- implementation of embodiments is hardware independent and may be implemented using any known or future developed hardware technology or any hybrids of these, such as a microprocessor or CPU (Central Processing Unit), MOS (Metal Oxide Semiconductor), CMOS (Complementary MOS), BiMOS (Bipolar MOS), BiCMOS (Bipolar CMOS), ECL (Emitter Coupled Logic), and/or TTL (Transistor-Transistor Logic).

- embodiments may be implemented as individual devices, apparatuses, units, means or functions, or in a distributed fashion, for example, one or more processors or processing functions may be used or shared in the processing, or one or more processing sections or processing portions may be used and shared in the processing, wherein one physical processor or more than one physical processor may be used for implementing one or more processing portions dedicated to specific processing as described,
 - a device may be implemented by a semiconductor chip, a chipset, or a (hardware) module including such chip or chipset;
 - embodiments may also be implemented as any combination of hardware and software, such as ASIC (Application Specific IC (Integrated Circuit)) components, FPGA (Field-programmable Gate Arrays) or CPLD (Complex Programmable Logic Device) components or DSP (Digital Signal Processor) components.
 - embodiments may also be implemented as computer program products, including a computer usable medium having a computer readable program code embodied therein, the computer readable program code adapted to execute a process as described in embodiments, wherein the computer usable medium may be a non-transitory medium.
- Although the present invention has been described herein before with reference to particular embodiments thereof, the present invention is not limited thereto and various modifications can be made thereto.
- As described above, an apparatus and a method are disclosed by which it is determined whether a receiver has received an object identifier, and wherein, in case the receiver has received the object identifier, entry control information is created based on the object identifier, and in case the receiver has not received the object identifier, the entry control information is created based on default information.

CLAIMS

1. An apparatus comprising
a receiver for receiving identifiers, and
5 a controller,
wherein the controller is configured
to determine whether the receiver has received an object identifier,
to create, in case the receiver has received the object identifier,
entry control information based on the object identifier, and
10 to create, in case the receiver has not received the object identifier,
the entry control information based on default information.
2. The apparatus according to claim 1, wherein
the apparatus is or is part of a mobile device, and the apparatus
15 further comprises
a transmitter for sending the created entry control information to an
elevator control system or a door key control system.
3. The apparatus according to claim 1, wherein
20 the apparatus is or is part of an elevator control system or a door
key control system, and
the receiver is configured to receive a user identifier, wherein the
controller is configured
to determine, in case the receiver has received the user identifier,
25 whether the receiver has received the object identifier.
4. The apparatus according to claim 3, wherein the controller is
configured to determine whether the user identifier and the object
identifier correspond to each other.
30
5. The apparatus according to any one of the claims 1 to 4, wherein
the entry control information comprises destination indication
information for an elevator, and

- the controller is configured
to create default destination indication information as the
entry control information when no object identifier is received, and
to create object related destination indication information as
5 the entry control information when the object identifier is received.
6. The apparatus according to any one of the claims 1 to 5, wherein
the entry control information comprises door key control information
for an automatic door key, and
10 the controller is configured
to create default door key control information as the entry
control information when no object identifier is received, and
to create object related door key information as the entry
control information when the object identifier is received.
15
7. The apparatus according to any one of the claims 1 to 6, wherein
the entry control information to be created based on the object identifier
is configurable by a user.
- 20 8. A system comprising
an apparatus according to any one of the claims 1 to 7, and
an object device for providing the object identifier.
9. The system according to claim 8, wherein the object device
25 comprises a transmitter for transmitting the object identifier or means for
providing a radio frequency identification.
10. The system according to claim 8 or 9, wherein the object device is a
tag which can be removably attached to an object.
30
11. A method comprising
determining whether a receiver has received an object identifier,

creating, in case the receiver has received the object identifier, entry control information based on the object identifier, and

creating, in case the receiver has not received the object identifier, the entry control information based on default information.

5

12. The method according to claim 11, wherein the method is carried out in a mobile device, wherein the method further comprises

10 sending the created entry control information to an elevator control system or a door key control system.

13. The method according to claim 11, wherein the method is carried out in an elevator control system or a door key control system, and

15 the receiver is configured to receive a user identifier, wherein the method further comprises

determining, in case the receiver has received the user identifier, whether the receiver has received the object identifier.

20 14. The method according to claim 13, further comprising determining whether the user identifier and the object identifier correspond to each other.

25 15. The method according to any one of the claims 11 to 14, wherein the entry control information comprises destination indication information for an elevator, and

30 the method further comprises creating default destination indication information as the entry control information when no object identifier is received, and creating object related destination indication information as the entry control information when the object identifier is received.

16. The method according to any one of the claims 11 to 15, wherein

the entry control information comprises door key control information for an automatic door key, and

the method further comprises

5 creating default door key control information as the entry control information when no object identifier is received, and
creating object related door key information as the entry control information when the object identifier is received.

17. The method according to any one of the claims 11 to 16, wherein
10 the entry control information to be created based on the object identifier is configurable by a user.

18. The method according to any one of the claims 11 to 17, wherein
the object identifier is provided by an object device.

15

19. The method according to claim 18, wherein the object device comprises a transmitter for transmitting the object identifier or means for providing a radio frequency identification.

20. The method according to claim 18 or 19, wherein the object device
20 is a tag which can be removably attached to an object.

21. A computer program product comprising code means for performing
a method according to any one of the claims 11 to 20 when run on a
25 processing means or module.

22. The computer program product according to claim 21, wherein the
computer program product is embodied on a computer-readable medium,
and/or the computer program product is directly loadable into the internal
30 memory of the computer and/or transmittable via a network by means of
at least one of upload, download and push procedures.

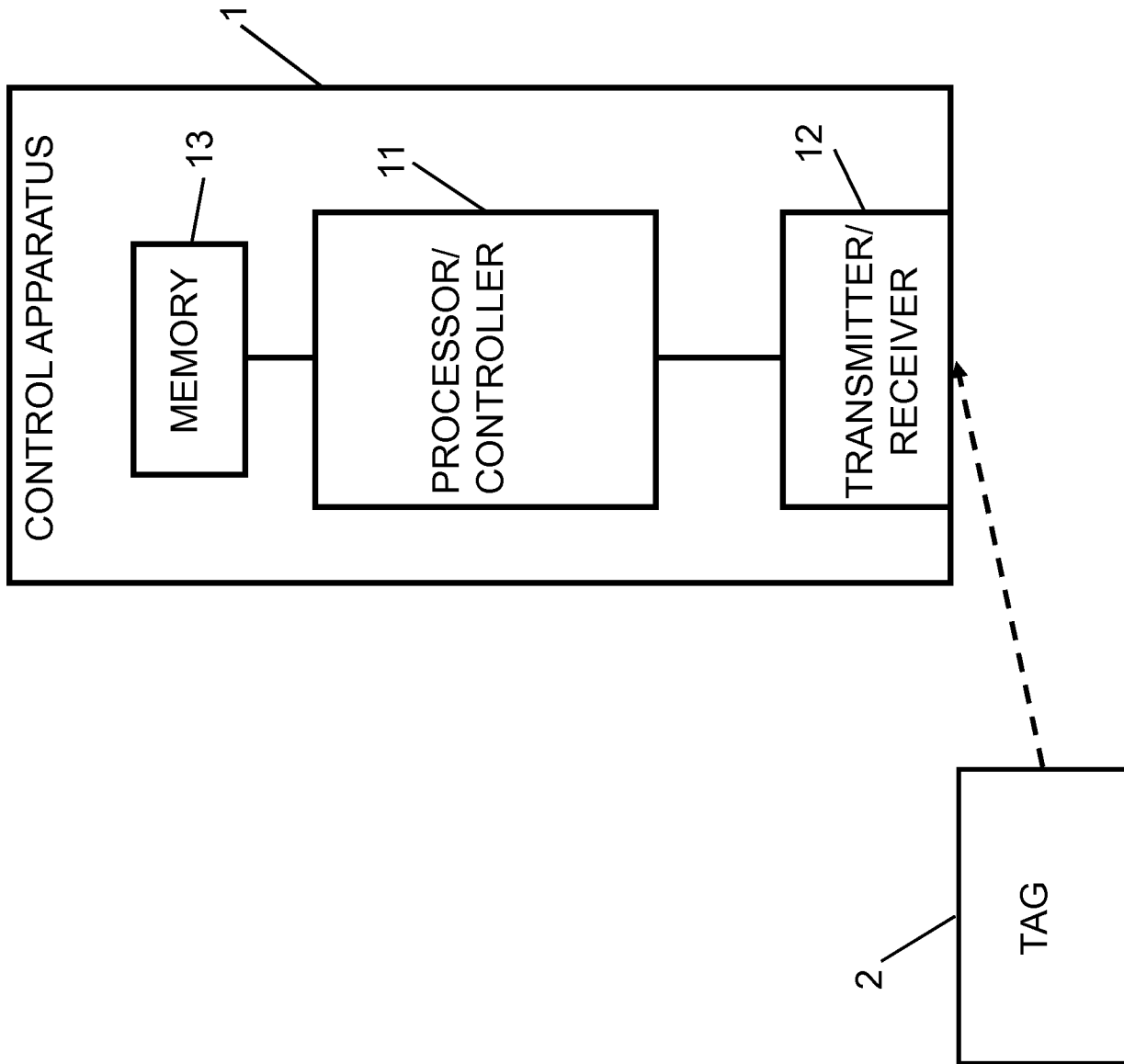


Fig. 1

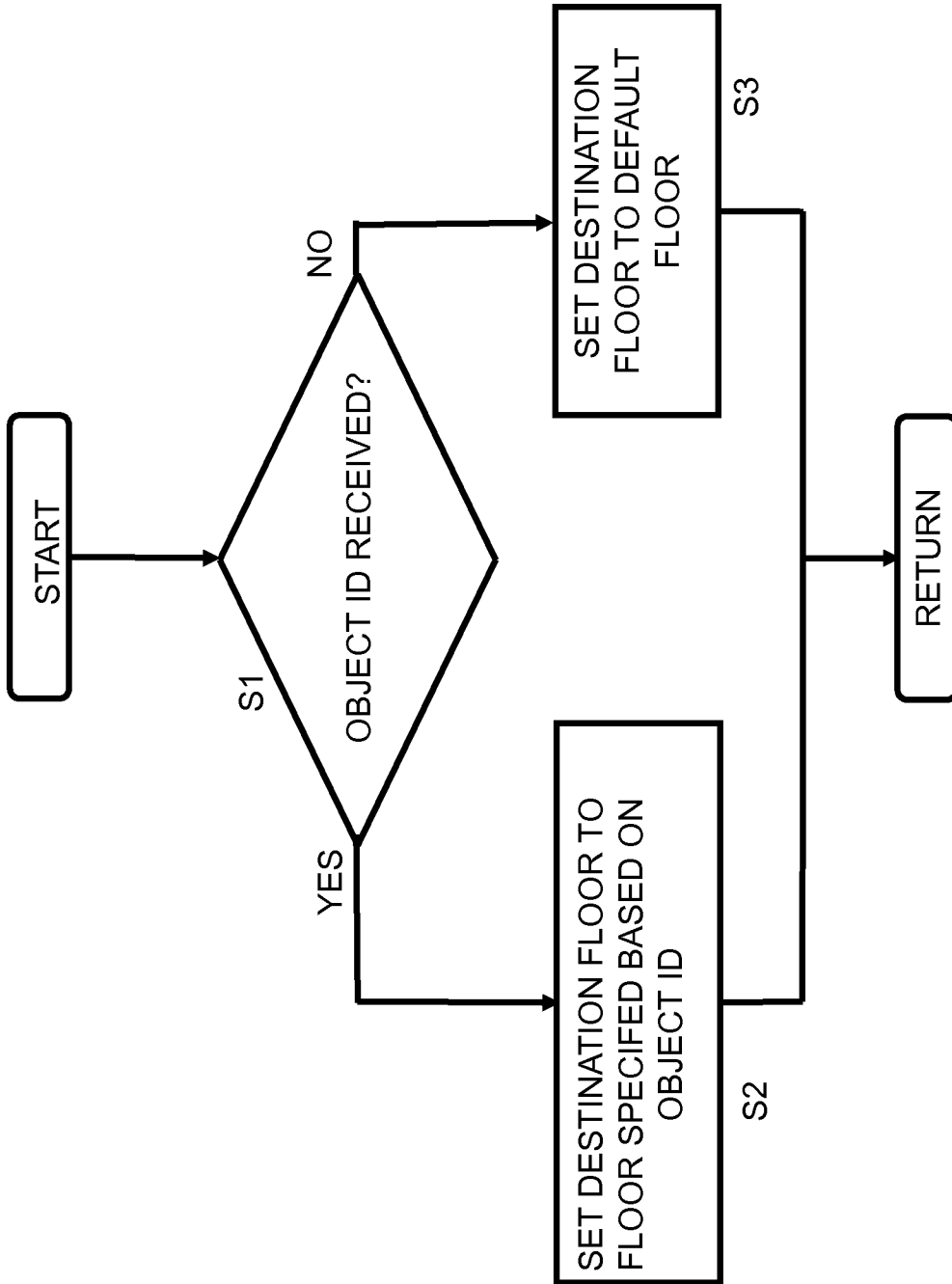
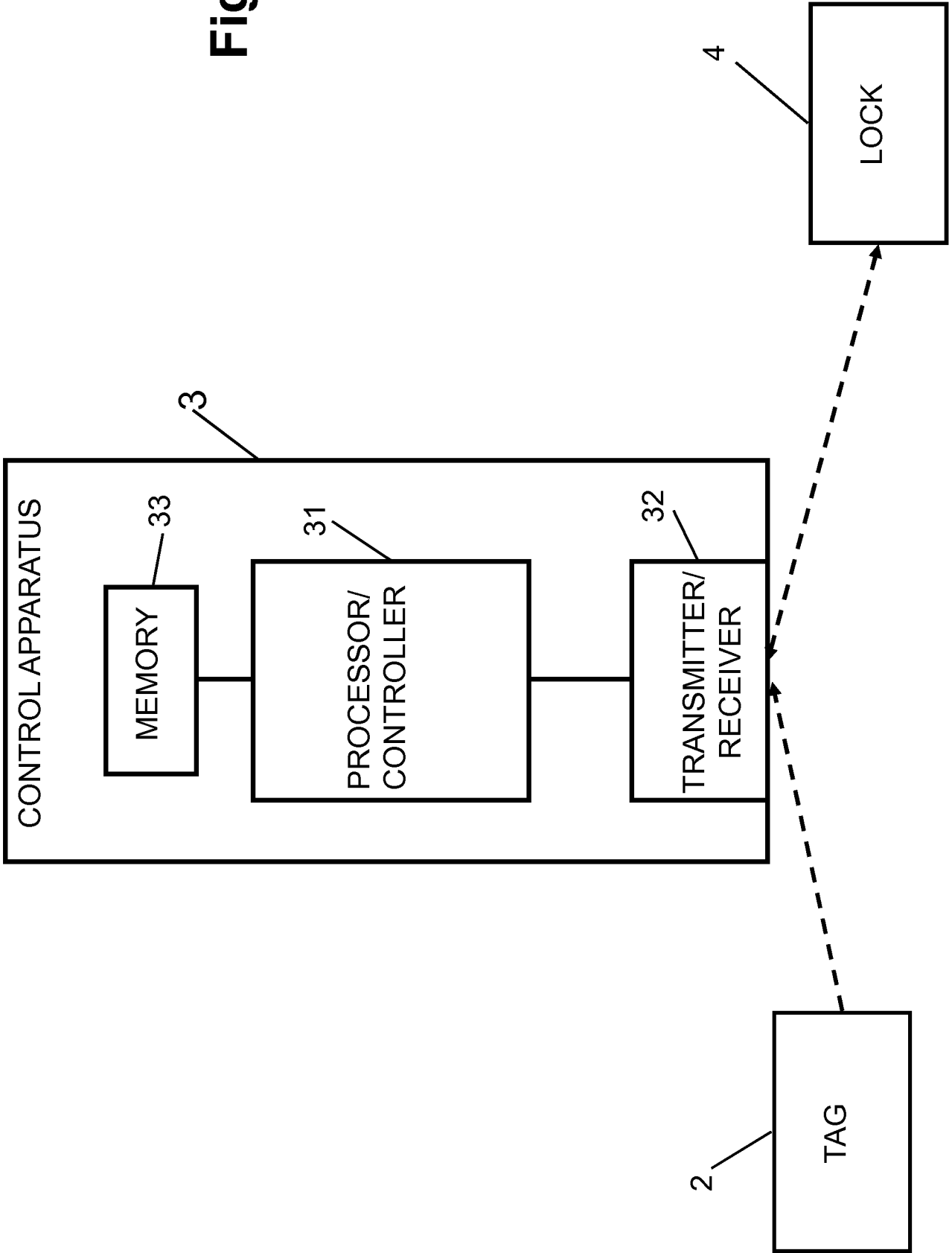


Fig. 2

Fig. 3



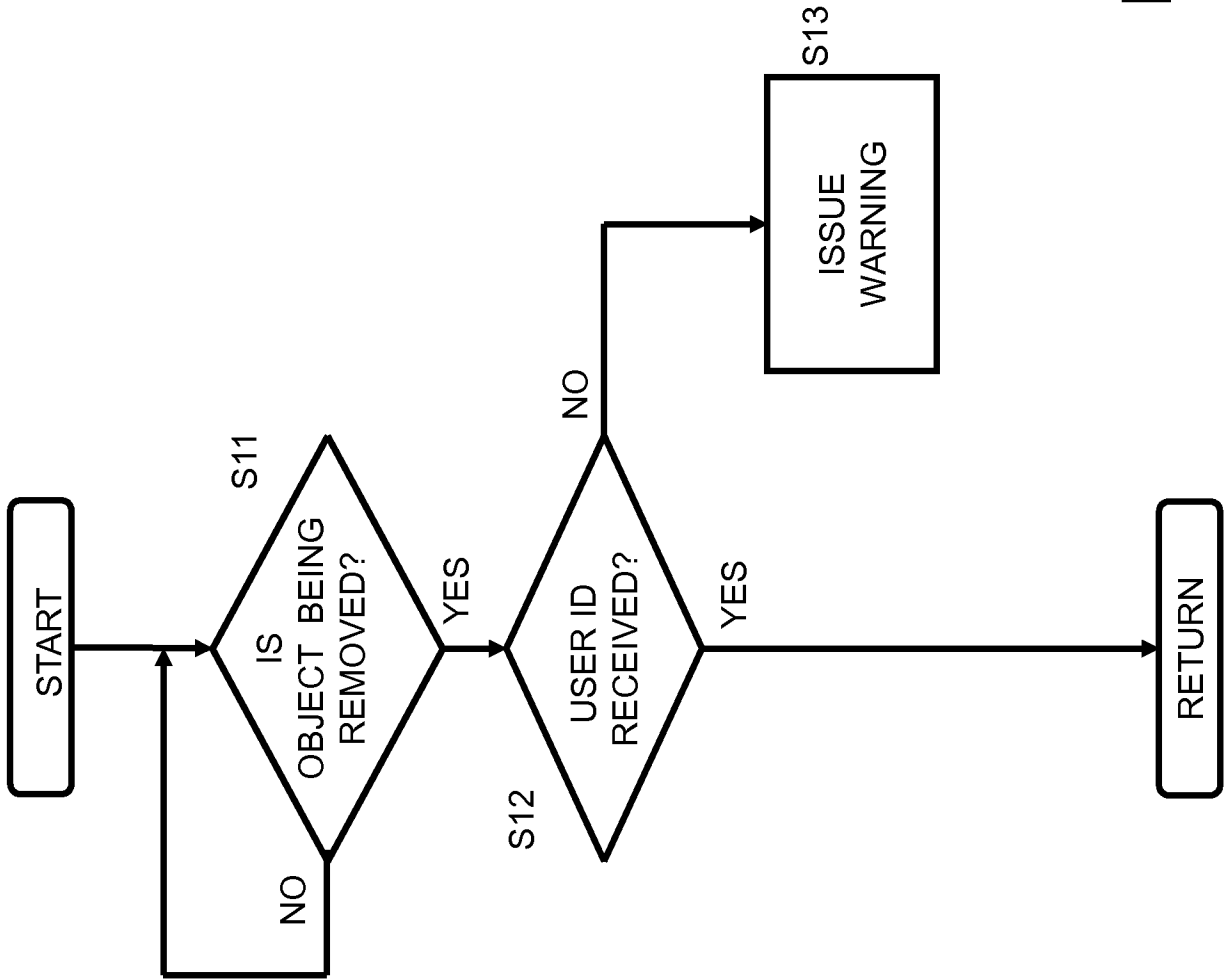


Fig. 4

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2016/059640

A. CLASSIFICATION OF SUBJECT MATTER
 INV. B66B1/46
 ADD. B66B1/24

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

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
 B66B

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

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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 2 704 105 A1 (INVENTIO AG [CH]) 5 March 2014 (2014-03-05) paragraphs [0011], [0024], [0025]; figures 1-4	1-22
X	US 5 984 051 A (MORGAN ROBERT G [US] ET AL) 16 November 1999 (1999-11-16) column 2, line 59 - column 4, line 65; figures 1-4	1-9, 11-19, 21,22

Further documents are listed in the continuation of Box C.

See patent family annex.

* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier application or patent but published on or after the international filing date
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- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
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- "&" document member of the same patent family

Date of the actual completion of the international search 24 January 2017	Date of mailing of the international search report 02/02/2017
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Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Authorized officer Miklos, Zoltan
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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/EP2016/059640

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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