ABB GPG Building Automation Webinar “Millenium Access Control”
Webinar “Millenium Access Control”

Agenda

- Overview
- References
- Access Control transponder reader
- Transponder programming device
- Access Control transponder holder
- Software MiniMAC 4.1
- Range
- Marketing Tools and Documentation
Webinar “Millenium Access Control”

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- Building Automation KNX and Access Control
- Vittuone, Italy
Webinar “Millenium Access Control”

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Access Control Segmentation

- Hotels and hospitality
  - Main need is guest management and comfort
  - Energy Efficiency is an important trend, becoming more and more strategic
- Banks, factories, other tertiary
  - Main need is security: the goal is granting centralized and controlled management of access to common and/or reserved areas
Access Control
Main Applications

- **Simplified and centralized supervision** of all hotel functions, through supervision software to be installed and used at reception:
  - Check-in/check-out
  - Programming/deleting transponder cards during check-in/check-out operations at reception
  - Controlling room status at reception (make-up-room, minibar to be filled, maintenance request, room unfit for use, …)

- **Security**
  - Room access through transponder reader (guest/personnel identification)
  - Present detection of guest/personnel into room by reception
  - Alarms and room signaling visualization by reception
Access Control

Energy Efficiency and Value added services

- **Energy Efficiency and cost savings**
  - Load activations (lighting, TV) only when guests are inside their rooms
  - Smart and optimized management of room heating/cooling (comfort mode activation during check-in operation and when guests are in their rooms; standby/OFF mode activation during check-out and when guests are outside their rooms)

- **Value-added services**
  - Access control to services provided by hotels, such as wellness or fitness center
  - Access control to hotel common areas (conference rooms, car parking/garage, …)
Access Control
KNX Integration

- Access control range solution completely integrated into KNX building automation installations
- Every access control device installed into a KNX line
- Programming devices by ETS
- System configuration, card programming, remote supervision by MiniMAC software
Access Control Architecture
Access Control
Available range

Chiara
Élos
MYLOS

Millenium
Access Control
Range overview

- Available for all Italian wiring accessories ranges
- Inputs and outputs integrated on all devices
  - 2 relays 8A, 250V
    - Functions: ON/OFF (for example for controlling electric lock), staircase lighting (for example courtesy light)
  - 3 binary inputs
    - Functions
      - ON/OFF
      - Shutter (using two grouped binary inputs)
- Flush-mounting installation (rectangular wall boxes, 3-modules)
- Additional power supply required (10…32 V DC / 12…24 V AC)

- Available for Millenium wiring accessories range
- 1 Inputs and 1 output integrated on the device
  - 1 relay 4A@24VAC/DC
    - Functions: ON/OFF (for example for controlling electric lock), staircase lighting (for example courtesy light)
  - 1 binary input used to connect into KNX access control installation, conventional wiring accessories card-holder
- Flush-mounting installation (BS, VDE boxes)
- Additional power supply required (12…24 V AC/DC)
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ABB KNX Building Automation solution

ABB experience for hospitality

- Deep experience into hospitality market, not only in Italy, but also into international ones (Saudi Arab, United Arab Emirates, Jordan, Spain, France, …)

- Scalable and flexible solution: from 5-10 to 300 rooms

- From Bed&Breakfast to luxury hotels

- KNX Building Automation solutions realized all over the world for more than 20 years
Hospitality segment

References: Top Hotels

- Mövenpick Hotel largest in Riyadh (5*) 447 rooms 
  *(top picture)*

- Mövenpick Tower Hotel Dubai (5*) 471 rooms 
  *(right picture)*

- **Total of 6** luxury hotels larger than 300 rooms!
Hospitality segment
References: Mid-High Hotels

- Ipoint Hotel Bologna (4*)
  51 rooms
  *(top picture)*

- Holiday Inn Turin (4*)
  150 rooms
  *(right picture)*
Hospitality segment

References: Small Hotels

- Hotel il Corazziere (Merone, Como) (4*) 36 rooms
  (top left picture)
- Hotel Rosabianca (Rapallo, Genova) (4*) 16 rooms
  (top right picture)
- NeroCubo (Rovereto, Trento) (4*) 22 rooms
  (right picture)
Hospitality segment
References: Insula Alba (Greece)

- Insula Alba Resort & Spa in Hersonissos (Analipsi)
  - 5-star beach hotel with a full-service spa
  - 136 rooms
  - 140 transponder reader and transponder card holder (Chiara outdoor and Mylos indoor)
Hospitality segment
References: Les Lodges (France)

- Lodges Méditerranée
  - 4-star camping in Montpellier
  - Swimming pool
  - 50 Mylos transponder reader
Hospitality segment
References: Hotel Solun (Macedonia)

- Hotel Solun in Skojpe: the first ECO hotel on the Balkans
  - 4-star hotel with a full-service SPA
  - 53 rooms
  - Elos transponder reader and transponder card holder
  - Elos wiring accessories
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Millenium access control transponder reader will be based on Mifare technology (13.56 MHz), which grants:

- A **better security**, if necessary, through encryption
- An **higher speed** when exchanging data
- **Multi-application**, since contactless card used for 13.56 MHz standard (ISO/IEC 14443), typically MIFARE® smartcards, are available with 16 separate memory sectors, that can be used for different applications (not only access control but also payment for example). In this way access control solution can be more easily integrated, when and if necessary, with customer applications and solutions already implemented, or to be implemented
- Fully compliancy with NFC (Near Field Communication) mobile phones
Access Control

MIFARE technology: Multi-Application

- Transponder reader supports standard Mifare card:
  - MIFARE Classic
  - MIFARE UltraLight

- Transponder programmer/reader writes/read into/from the first free memory block of transponder card
  - Integration with other third-party services/application is easier (they use other memory block in the card for their application)
  - Integration, when required, is up to the system integrator
Access Control transponder reader

Connections

AC
~ 24V

DC
24V
0V

1 relay
4A@24VAC/DC

Transponder
Card-holder binary input

External Power Supply
12...24V AC/DC

Programming
LED

Programming
push-button

KNX BUS
Access Control transponder reader

LEDs on the front

- Two colors LED on the front
  - Green/Red
- Two communications objects in ETS for configuring as requested/wanted switching of this LED (according to specific status/command, for example MUR)

<table>
<thead>
<tr>
<th>15</th>
<th>Green Led</th>
<th>Green Led</th>
<th>1 bit</th>
<th>C</th>
<th>W</th>
<th>-</th>
<th>-</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>Red Led</td>
<td>Red Led</td>
<td>1 bit</td>
<td>C</td>
<td>-</td>
<td>W</td>
<td>-</td>
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</tbody>
</table>
Access Control transponder reader
Output configuration

The **output** of transponder reader can be configured according to three different modalities:

- **“Linked to access control”**, receiving in this case switching commands from the device itself (according to transponder card validation). It’s moreover possible to switch the relay according to a standard KNX telegram received from the bus by a KNX device

- **Being a standard KNX Switch actuator output**, able to be controlled by every KNX-standard devices

- **“Linked to card-holder”**, that means that the relay is switched according to closing/opening internal input contact available on transponder reader and connected to a conventional card-holder

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<table>
<thead>
<tr>
<th>Output functionality</th>
<th>Value</th>
</tr>
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<tbody>
<tr>
<td>Linked to access control</td>
<td>Selected</td>
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<tr>
<td>Actuator</td>
<td></td>
</tr>
<tr>
<td>Linked to access control</td>
<td></td>
</tr>
<tr>
<td>Linked to card holder</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Delay in ms</th>
<th>1000</th>
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</table>

<table>
<thead>
<tr>
<th>Output contact reaction</th>
<th>Normally open</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Reaction to the bus voltage</th>
<th>Unchanged contact</th>
</tr>
</thead>
</table>
```
Access Control transponder reader

Output configuration: Linked to access control

- **Transponder reader output** is configured for opening/leaving closed electronic door lock (or courtesy light) while guest card is valid/not valid for access

- **Conventional transponder card-holder output**, on card insertion/removal, opens/closes binary input on transponder reader which therefore knows that room is occupied/not occupied
Access Control transponder reader
Output configuration: Actuator

- Electronic door lock is controlled by a SA/S which receive from access control transponder reader, via KNX bus, information for opening/leaving closed the door
  - More secure solution, since the relay which controls door can be hided inside the room and not be short-circuited from outside
Access Control transponder reader
Output configuration: Linked to card holder

- Transponder reader output is configured in order to react on transponder card insertion/removal (into conventional transponder card-holder)

- Additional loads can be switched ON/OFF on card insertion/removal using proper communication object available
Access Control transponder reader
KNX functionalities on card validation

- Through **1 bit KNX communication object sent on the bus on card validation event**, transponder reader is able to communicate with other KNX devices (for example SA/S) which grants access to room, and activates courtesy light (or moreover they could realize other functions/control other loads).

- It’s possible to differentiate behavior between guest and services card validation (some loads activated when guest access the room, some others when staff access the room).
Access Control transponder reader
KNX functionalities on card validation

- Through 1 byte KNX communication object sent on the bus on card validation event, standard KNX scenario can be triggered, for example from one Room Master able to control different kinds of load inside or outside the room.
- It’s possible to differentiate behavior between guest and services card validation (one scenario activated when guest access the room, one other when staff access the room).
Access Control transponder reader
KNX functionalities on card insertion/removal

- Through **1 bit KNX communication object** sent on the bus on “guest in the room” event (card insertion/removal into/from transponder card holder), transponder reader is able to communicate with other KNX devices: for example SA/S which switch ON room lights and activate socket outlet, thermostat which activate heating/cooling.
Access Control transponder reader
KNX functionalities on card insertion/removal

- Through 1 byte KNX communication object sent on the bus on “guest in the room” event (card insertion/removal into/from transponder card holder), standard KNX scenario can be triggered, for example from one Room Master able to control different kinds of load inside or outside the room.
## Access Control transponder reader

### Configuration

<table>
<thead>
<tr>
<th>Loads</th>
<th>Electric door lock or courtesy light</th>
<th>Room lights</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETS Output configuration</td>
<td>Direct commutation</td>
<td>Commutation via KNX bus</td>
</tr>
<tr>
<td>Linked to access control</td>
<td><img src="image1.png" alt="Door Lock" /></td>
<td><img src="image2.png" alt="Room Lights" /></td>
</tr>
<tr>
<td><img src="image3.png" alt="Direct commutation" /></td>
<td><img src="image4.png" alt="Commutation via KNX bus" /></td>
<td></td>
</tr>
<tr>
<td>Linked to card holder</td>
<td>Comutation via KNX bus</td>
<td>Direct commutation</td>
</tr>
<tr>
<td><img src="image5.png" alt="Commutation via KNX bus" /></td>
<td><img src="image6.png" alt="Direct commutation" /></td>
<td></td>
</tr>
<tr>
<td>Actuator</td>
<td>Comutation via KNX bus</td>
<td><img src="image2.png" alt="Room Lights" /></td>
</tr>
<tr>
<td><img src="image7.png" alt="ETS Output configuration" /></td>
<td><img src="image8.png" alt="Commutation via KNX bus" /></td>
<td><img src="image9.png" alt="Commutation via KNX bus" /></td>
</tr>
<tr>
<td>Actuator (output freely configurable via ETS for other loads)</td>
<td><img src="image10.png" alt="Commutation via KNX bus" /></td>
<td><img src="image11.png" alt="Commutation via KNX bus" /></td>
</tr>
</tbody>
</table>
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Access Control
Transponder programming device

- **Transponder reader can be configured through MiniMAC in order to be the Transponder programming device** in access control installation

- One order code for two different functionalities
  - Transponder reader (outside every room)
  - Transponder programming device (at hotel reception)

- One different transponder reader configured as transponder programming device as to be installed → it’s not possible using one transponder reader both as reader and programmer functionality
Access Control
Transponder programming device

- One single device can be programmed through MiniMAC as two different functionality
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Access Control transponder holder

Connections

- **AC ~ 24V**
- **DC 24V**
- **0V**

1 relay
4A@24VAC/DC

Binary input (contact scanning)

External Power Supply
12...24V AC/DC

Programming LED

Programming push-button

KNX BUS
Access Control transponder holder

LEDs on the front

- White LED on the front
- Standard behaviour:
  - Card not inserted: LED blinking
  - Card inserted: LED off
- Communication objects in ETS for switching ON/OFF the LED
Access Control transponder holder
Output configuration

The output of transponder card-holder can be configured according to two different modalities:

- **“Linked to access control cards”**, receiving in this case switching commands from the device itself (according to valid transponder card inserted/removed into/from the card holder)

- **Being a standard KNX Switch actuator output**, able to be controlled by every KNX-standard devices
Access Control transponder holder
Output configuration: Actuator

- Room loads (e.g. lights) are controlled by a SA/S which receive from access control transponder holder, via KNX bus, information switching ON/OFF lights.

Output freely configurable via ETS for controlling other load (for example low voltage LED)

Transponder holder (access control)
Access Control transponder holder
Output configuration: linked to access control cards

- Transponder holder output is configured in order to react on transponder card insertion/removal (only MIFARE cards, not any stupid card)
- Additional loads can be switched ON/OFF on card insertion/removal using proper communication object available
Access Control transponder holder
KNX functionalities on card insertion/removal

- Through **1 bit KNX communication object sent on the bus on card insertion/removal event (only MIFARE intelligent cards)**, transponder holder is able to communicate with other KNX devices (for example SA/S) which activate room loads (e.g. room light, socket outlet).

- It’s possible to differentiate behavior between guest and services card validation (some loads activated when guest is in the room, some others when staff is in the room).
Access Control transponder holder

KNX functionalities on card insertion/removal

- Through **1 byte KNX communication object sent on the bus on card insertion/removal event**, standard KNX scenario can be triggered, for example from one Room Master able to control different kinds of load inside the room.
- It’s possible to differentiate behavior between guest and services card validation (one scenario activated when guest access the room, one other when staff access the room)
# Access Control transponder holder

## Configuration

<table>
<thead>
<tr>
<th>ETS Output configuration</th>
<th>Loads</th>
<th>Room lights on card insertion/removal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linked to access control cards = Yes</td>
<td>[Diagram]</td>
<td>[Icon] Direct commutation</td>
</tr>
<tr>
<td>Linked to access control cards = No</td>
<td>[Diagram]</td>
<td>[Icon] Commutation via KNX bus</td>
</tr>
</tbody>
</table>
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Access Control
Software MiniMAC 4.1

- Windows 8.1 and Windows 10 support (via IPS/S)
- Two main functionalities:
  - Commissioning of Access Control installation after ETS programming (system integrator/installer)
  - Hotel management from receptionist/hotel staff (check-in/check-out, card management, history view, ....)
MiniMAC Functions

Check-in/Check-out

- Wizard for programming/deleting key-card automatically associated to a room number
- It’s possible to specify the kind of card to be created (guest/staff)
MiniMAC Functions

Transponder card details

- Detailed list of transponder card created in their and their characteristics
MiniMAC Functions

Guest and Personnel list

- Available detailed list of:
  - Guest/customers
  - Personnel
## MiniMAC Functions

### Room details

- Detailed list of rooms:
  - Situation (empty/occupied, make-up-room, cleaned, ...)
  - Room type (number of rooms, floor, ...)

### Room Management System

![Room Management System](image)

**Table of Rooms**

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</table>
MiniMAC Functions
Room heating/cooling

- Configuring set-point and operating mode
- Viewing room temperature
- Showing thermostat status (only on models that support it)
MiniMAC Functions

History

- List of transponder reader and historical data related to access (which card, when)
- List of rooms and historical data on occupation
- List of transponder card and historical data operations performed (creation, cancellation, …)
MiniMAC Functions

Event history

- List of all events/operations performed in access control installations
MiniMAC Functions
Event and Load management

- Visualization and control of events associated to alarms (for example bathroom pull-cord alarm, technical alarm, fire alarm, …)
- Visualization and control of loads into the installation (lighting of shared areas, electrical loads, air conditioning, irrigation, …)
MiniMAC Functions

Users list

- Available detailed list of all users of MiniMAC software
- It’s possible to create different users (user/administrator), according to requirements:
MiniMAC Functions
System Creation and Management

- Creation of system architecture and configuration of devices
- Available import from ETS function
MiniMAC Functions
Groups, time-ranges and Extra access

- Access-control guests and personnel are organized in groups (at least one existing in the plant)
- Time-ranges can be created and associated to groups for every devices, in order to define and managed time-specific authorized access to some room/restricted areas
- In the Extra-Accesses tab, you can specify the list of devices which, for people belonging for the specific group, can be accessed automatically without specifying it at check-in
MiniMAC Functions
Configuring kind of application

Hospitality applications

Other applications
- Car parking
- Welness, fitness, SPA, …
- Offices
- School
- …
MiniMAC Functions
Multi Languages

- Software already available in four different languages
- Adding other languages is easy
MiniMAC
PMS Interface

- MiniMAC allows integration with hotel management software applications implemented by Micros Fidelio or Protel → the two applications can communicate with each other, each performing its own specific function

- Micros Fidelio/Protel management software allows hotel owner and reception staff to manage all the information concerning booking, customer records, billing, management of room and services fees, etc.

- MiniMAC software for the configuration of the access control system (TAG programming, definition of access to rooms and readers, load management, climate control from the reception, display of alarms from the reception, …)
MiniMAC-PMS Interface
ABB Popup

- The PopupClient is usually activated automatically by the service as soon as it detects one or more TAGs to be created.

- This screen is only triggered by the service and cannot be recalled at user level. An example of customer TAG creation request is shown below.
Webinar “Millenium Access Control”

Agenda

- Overview
- References
- Access Control transponder reader
- Transponder programming device
- Access Control transponder holder
- Software MiniMAC 4.1
- Range
- Marketing Tools and Documentation
## Millennium Access Control range

### Items and order code

<table>
<thead>
<tr>
<th>Type</th>
<th>Order code</th>
<th>Description</th>
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<tr>
<td>TR/U 1.1</td>
<td>2CSY235683R2001</td>
<td>Transponder Reader</td>
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<tr>
<td>TH/U 1.1</td>
<td>2CSY265232R2021</td>
<td>Transponder Holder</td>
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<tr>
<td>TS/T 1</td>
<td>2CSY259412R2041</td>
<td>Set of 10 Transponder Cards</td>
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<tr>
<td>SW MiniMAC 4.1</td>
<td>2CSY258202R2051</td>
<td>Software MiniMAC 4.1</td>
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</tbody>
</table>
Webinar “Millenium Access Control”

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Millenium Access Control Range Catalogues

- Millenium Access Control products inserted into:
  - New Millenium Catalogue (2016)
  - KNX Product Range Overview (2016)
Millenium Access Control Range
International web-site

Millenium Access Control Range
Better Space Hotel

- Access Control integrated into Better Space Application
Millenium Access Control Range Marketing Video

- It’s available and online, marketing video on Millenium access control range and hotel applications
- Target → hotel owner, investors, wholesaler, fairs

It is golden.
Millenium Access Control Range
Working demo cases

- Already developed and available demo cases for marketing activities, demos, training sessions
- To be used by experienced trained people
Webinar “Millenium Access Control”
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Training & Qualification Database: Training Selector

Training Database with complete Online-Training Portfolio for ABB Building Automation

→ Link
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Trainings 2016 in Heidelberg

- **KNX Tutor Course:** 17th to 21th October 2016
- Various courses KNX Security Panel GM/A 8.1 are planned ask your Sales Manager!
- **Additionally:** **Certified Basic Training:** 21th to 25th Nov. 2016
Webinar “Millenium Access Control”

Next Webinar

- **Wednesday 2\(^{nd}\) of November 2016**
  - Morning  09:00 am Europe Time (Berlin, UTC + 1h)
  - Afternoon 03:00 pm Europe Time (Berlin, UTC + 1h)

- **Logic Controller ABA/S 1.2.1**
  - Graphical programming interface
  - Function elements and blocks
  - Simulation
  - WebUI

* Topic is subjected to change
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