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September 2016

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"



Diego Carzaniga

- Product Manager
- ABB S.P.A. Electrification Products Division
- Building Automation KNX and Access Control
- Vittuone, Italy



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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



- <u>Simplified and centralized supervision</u> 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/checkout 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 checkin 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 devices installed into a KNX line



Programming devices by ETS

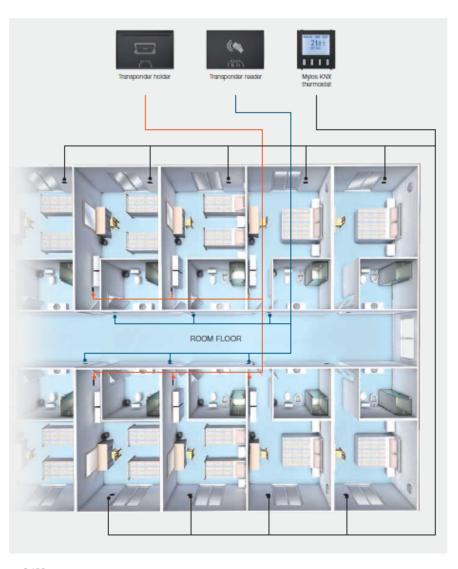


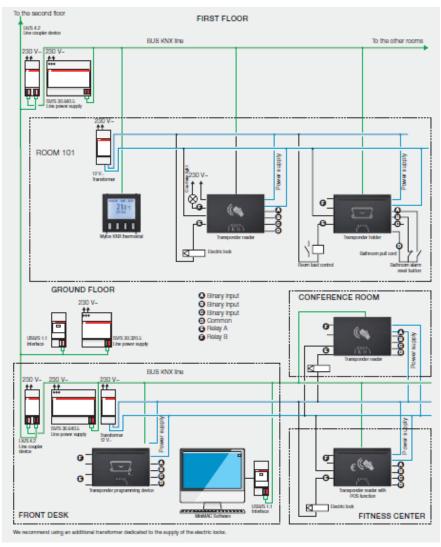


 System configuration, card programming, remote supervision by MiniMAC software



Access Control Architecture







Access Control Available range

Chiara Elos MYLOS





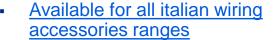




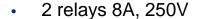


Access Control Range overview









- 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, 3modules)
- Additional power supply required (10...32 V DC /12...24 V AC)





- 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 fullservice SPA
 - 53 rooms
 - Elos transponder reader and transponder card holder
 - Elos wiring accessories



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Access Control MIFARE technology



Millenium access control transponder reader will be based on Mifare technology (13.56 MHz), which grants:

- A <u>better security</u>, if necessary, through encryption
- An <u>higher speed</u> 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

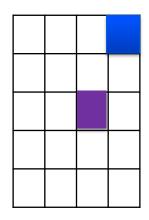


Access Control MIFARE technology: Multi-Application





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

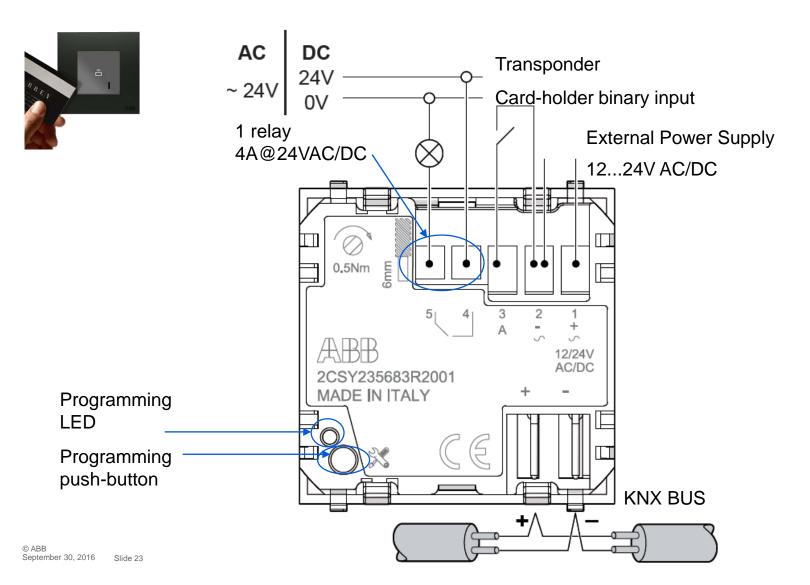


Access Control
Payment

- 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



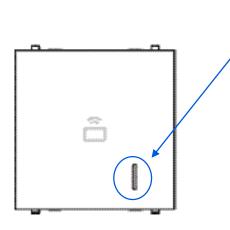
Access Control transponder reader Connections





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)

■ 15	Green Led	Green Led	1 bit	С	-	W	-	-
■ ₹ 16	Red Led	Red Led	1 bit	С	-	W	-	-



Access Control transponder reader Output configuration



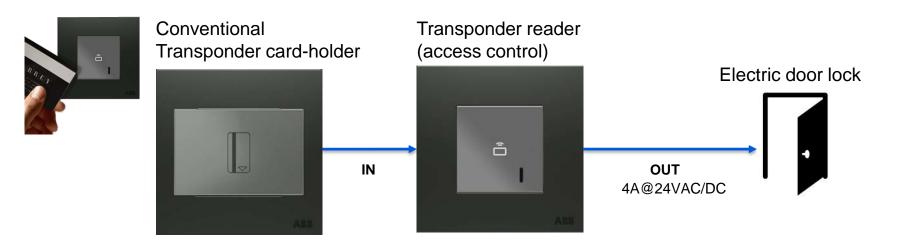
The <u>output</u> of transponder reader can be configured according to three different modalities:

- "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





Access Control transponder reader Output configuration: Linked to access control

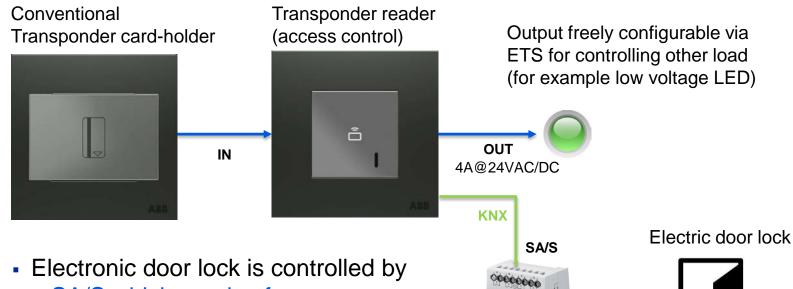


- Transponder reader output is configured for opening/leaving closed electronic door lock (or courtesy light) while guest card is valid/not valid for access
- Conventional transponder card-holder output, on card insertion/removal, opens/closes binary input on transponder reader which therefore knows that room is occupied/not occupied



Access Control transponder reader Output configuration: Actuator

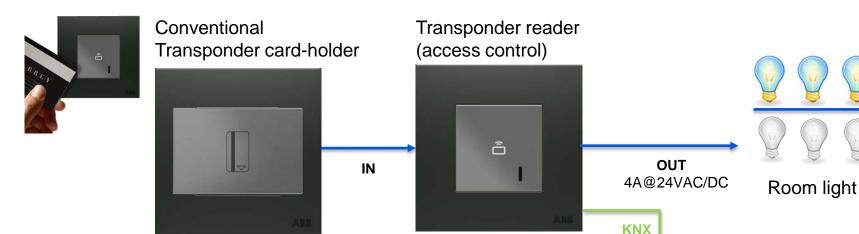




- Electronic door lock is controlled by a SA/S which receive from access control transponder reader, via KNX bus, information for opening/leaving closed the door
 - → More secure solution, since the relay which controls door can be hided inside the room and not be short-circuited from outside



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

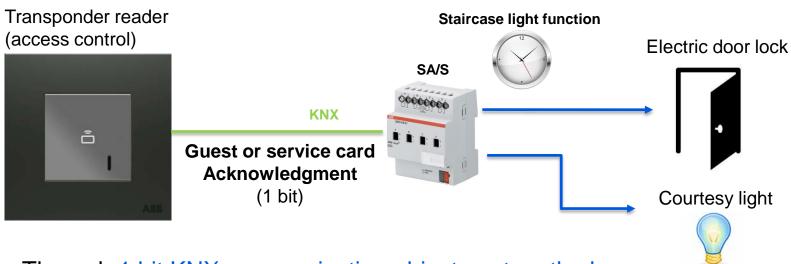


Socket Outlet

SA/S

Access Control transponder reader KNX functionalities on card validation

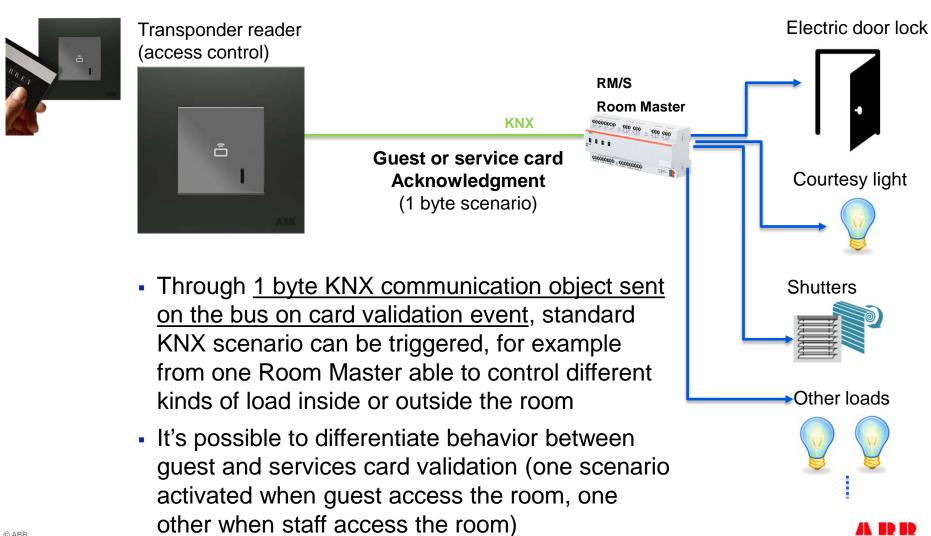




- Through 1 bit KNX communication object sent on the bus on card validation event, transponder reader is able to communicate with other KNX devices (for example SA/S) which grants access to room, and activates courtesy light (or moreover they could realize other functions/control other loads)
- It's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

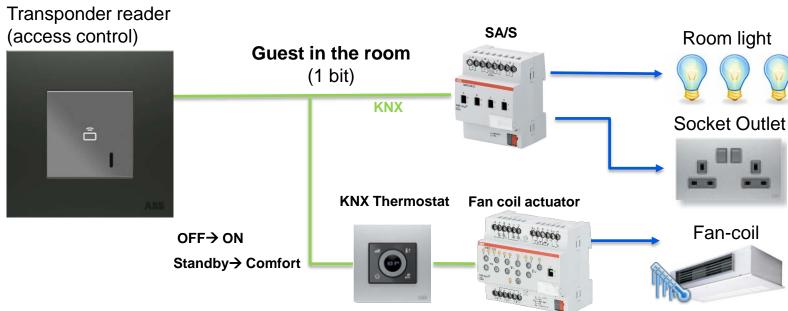


Access Control transponder reader KNX functionalities on card validation



Access Control transponder reader KNX functionalities on card insertion/removal



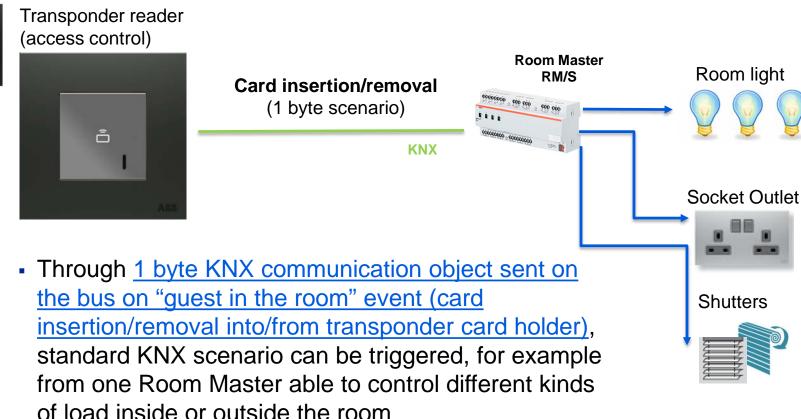


 Through 1 bit KNX communication object sent on the bus on "guest in the room" event (card insertion/removal into/from transponder card holder), transponder reader is able to communicate with other KNX devices: for example SA/S which switch ON room lights and activate socket outlet, thermostat which activate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



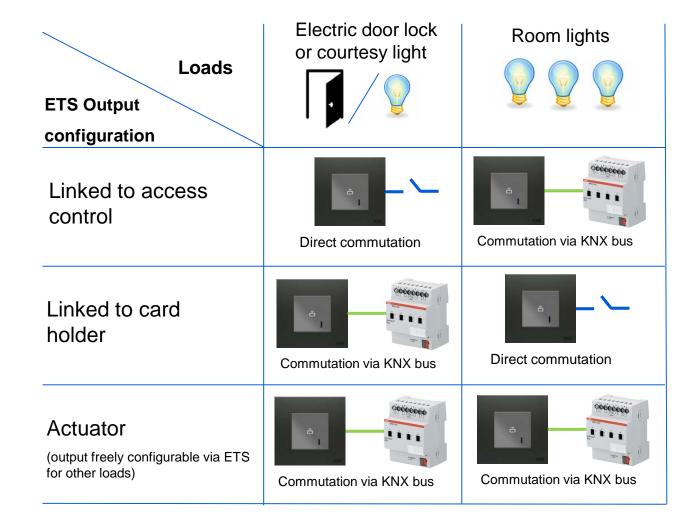
Access Control transponder reader KNX functionalities on card insertion/removal







Access Control transponder reader Configuration





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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)



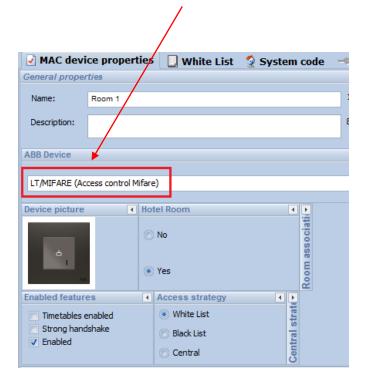
 One different transponder reader configured as transponder programming device as to be installed → it's not possible using one transponder reader both as reader and programmer functionality

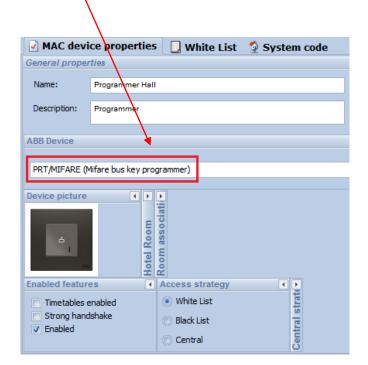


Access Control Transponder programming device

One single device can be programmed through MiniMAC as two different functionality

Transponder reader Transponder programming device







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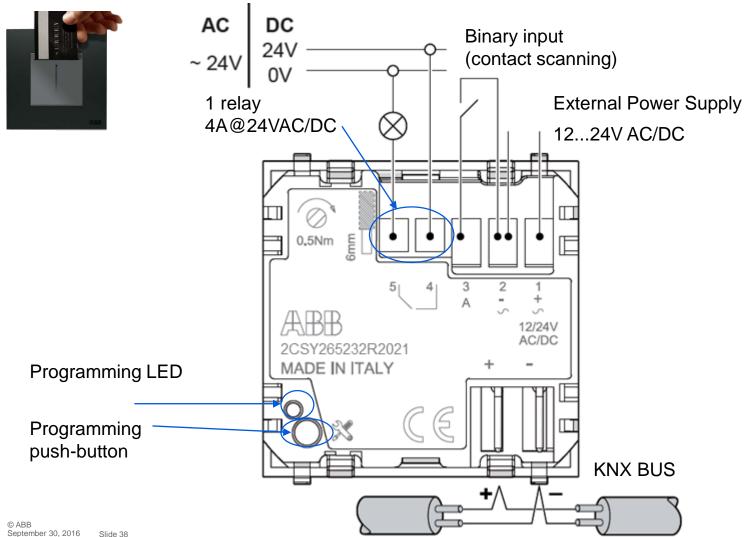




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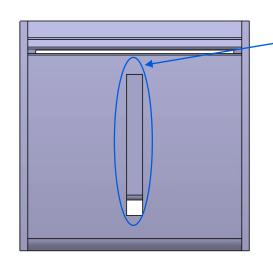
Access Control transponder holder Connections





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

■ 15 Led Led 1 bit C - W - -

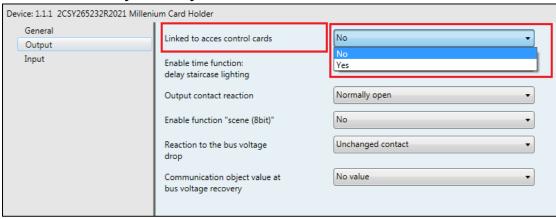


Access Control transponder holder Output configuration



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

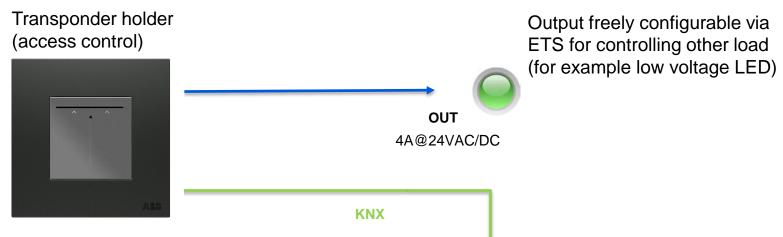
- "Linked to access control cards", receiving in this case switching commands from the device itself (according to valid transponder card inserted/removed into/from the card holder)
- Being a standard KNX Switch actuator output, able to be controlled by every KNX-standard devices



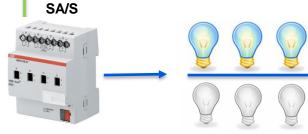


Access Control transponder holder Output configuration: Actuator





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

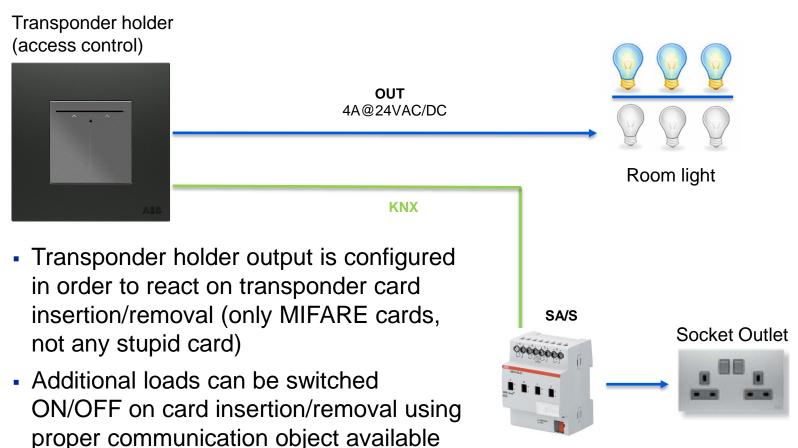


Room light



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







Access Control transponder holder KNX functionalities on card insertion/removal

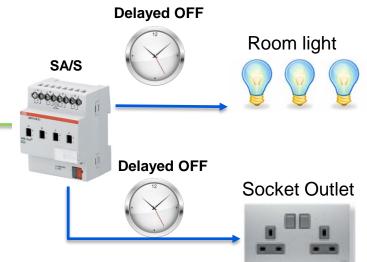


Transponder holder (access control)



Insertion/removal guest (services) card (1 bit)

KNX



- 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

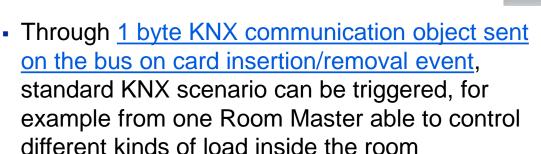


Transponder holder (access control)

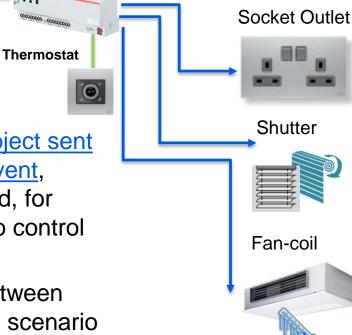


Guest or service card Insertion scene (1 byte scenario)

Guest or service card Removal scene (1 byte scenario)



 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)

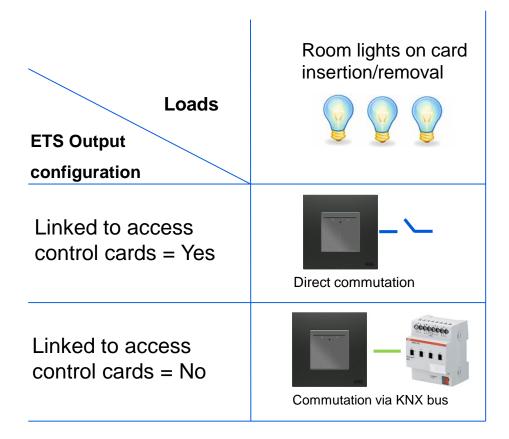


Room Master



Room light

Access Control transponder holder Configuration





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Access Control Software MiniMAC 4.1





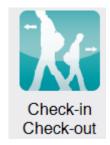


- Windows 8.1 and Windows 10 support (via IPS/S)
- Two main functionalities:
 - Commissioning of Access Control installation after ETS programming (system integrator/installer)
 - Hotel management from receptionist/hotel staff (checkin/check-out, card management, history view,)



MiniMAC Functions Check-in/Check-out





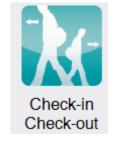
- Wizard for programming/deleting key-card automatically associated to a room number
- It's possible to specify the kind of card to be created (guest/staff)



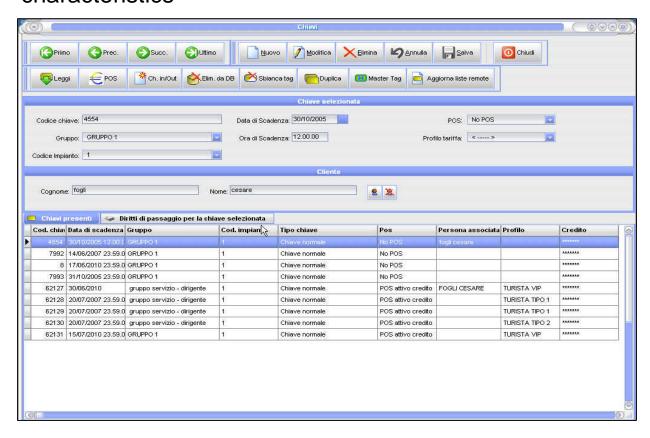


MiniMAC Functions Transponder card details





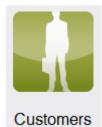
 Detailed list of transponder card created in their and their characteristics





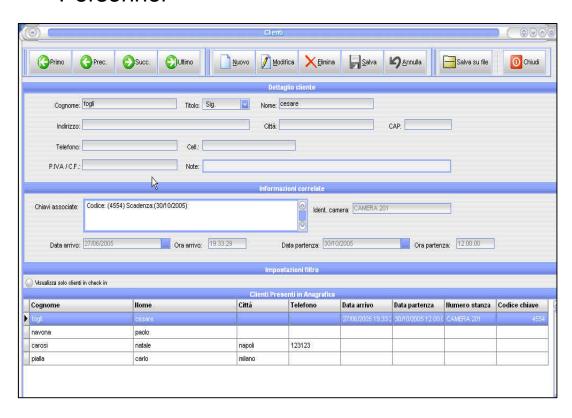
MiniMAC Functions Guest and Personnel list







- Available detailed list of:
 - Guest/customers
 - Personnel



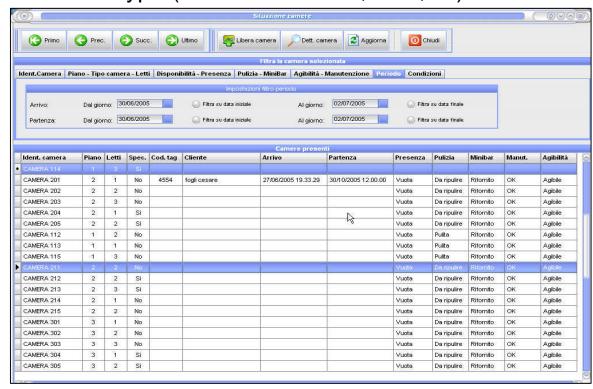


MiniMAC Functions Room details





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





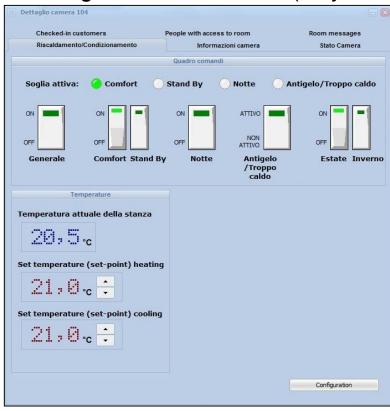
MiniMAC Functions Room heating/cooling







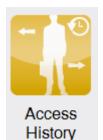
- Viewing room temperature
- Showing thermostat status (only on models that support it)

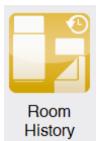


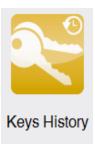


MiniMAC Functions History

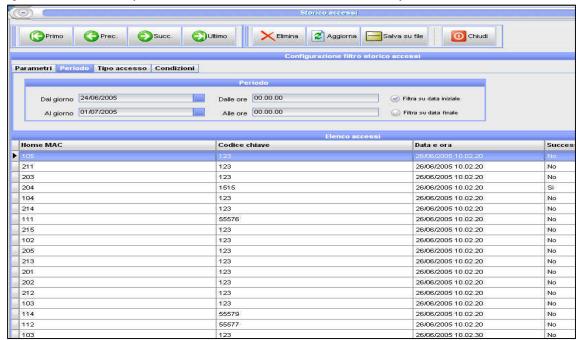








- List of transponder reader and historical data related to access (which card, when)
- List of rooms and historical data on occupation
- List of transponder card and historical data operations performed (creation, cancellation, ...)



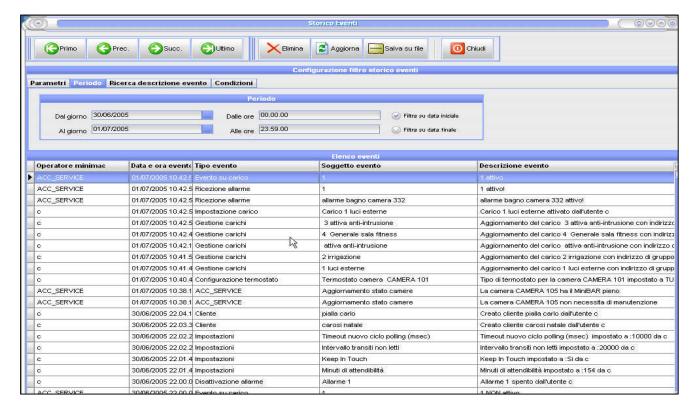


MiniMAC Functions Event history



List of all events/operations performed in access control installations







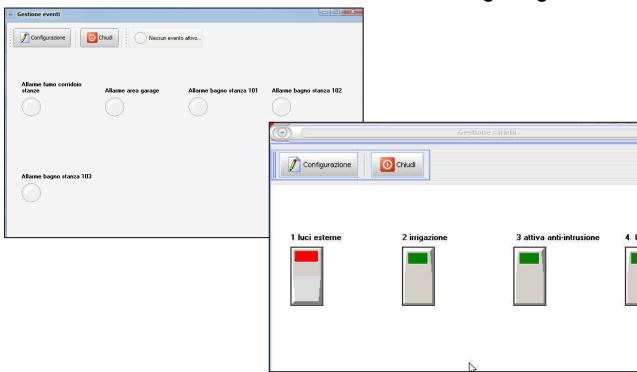
MiniMAC Functions Event and Load management







- 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, ...)



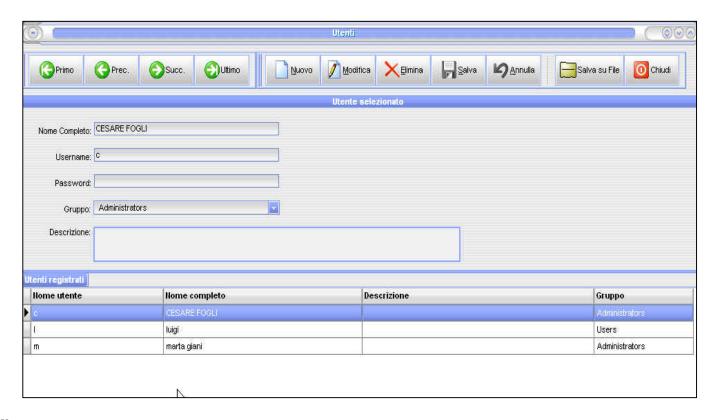


MiniMAC Functions Users list





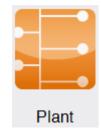
- Available detailed list of all users of MiniMAC software
- It's possible to create different users (user/administrator), according to requirements:



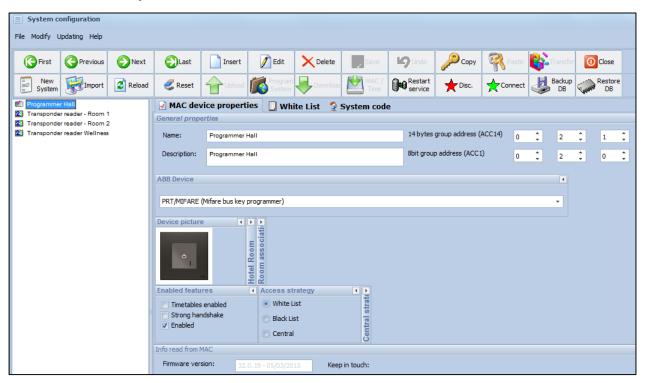


MiniMAC Functions System Creation and Management





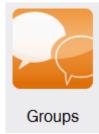
- Creation of system architecture and configuration of devices
- Available import from ETS function



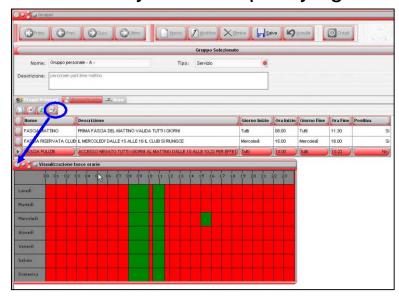


MiniMAC Functions Groups, time-ranges and Extra access



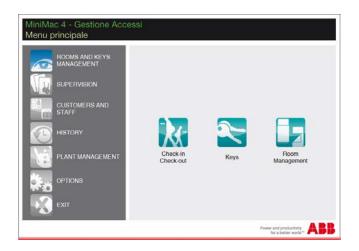


- Access-control guests and personnel are organized in groups (at least one existing in the plant)
- Time-ranges can be created and associated to groups for every devices, in order to define and managed time-specific authorized access to some room/restricted areas
- in the Extra-Accesses tab, you can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





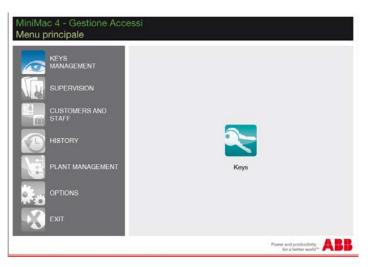
MiniMAC Functions Configuring kind of application



Hospitality applications

Other applications

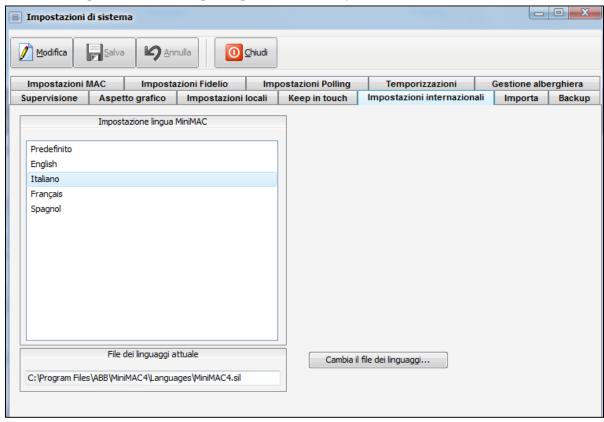
- Car parking
- Welness, fitness, SPA, ...
- Offices
- School
- ...





MiniMAC Functions Multi Languages

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





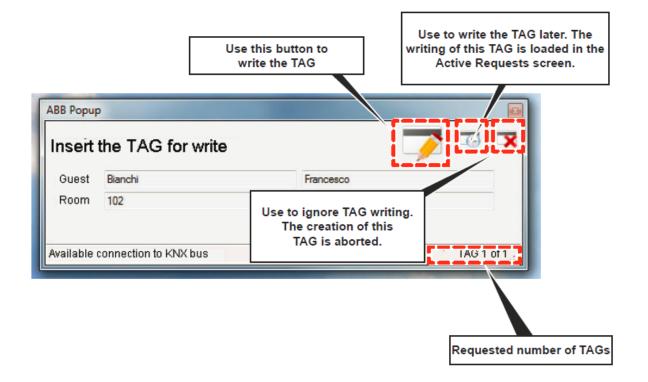
MiniMAC **PMS** Interface

- 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





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Millennium Access Control range Items and order code

Millenium	Туре	Order code	Description
a	TR/U 1.1	2CSY235683R2001	Transponder Reader
ASI	TH/U 1.1	2CSY265232R2021	Transponder Holder
Former ABB	TS/T 1	2CSY259412R2041	Set of 10 Transponder Cards
	SW MiniMAC 4.1	2CSY258202R2051	Software MiniMAC 4.1



Webinar "Millenium Access Control" Agenda



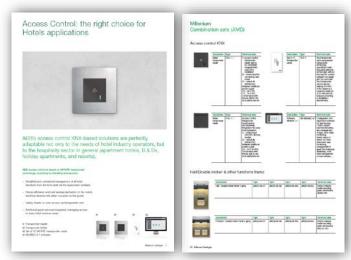


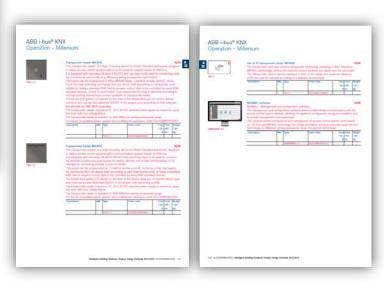
- Overview
- References
- Access Control transponder reader
- Transponder programming device
- Access Control transponder holder
- Software MiniMAC 4.1
- Range
- Marketing Tools and Documentation



Millenium Access Control Range Catalogues

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

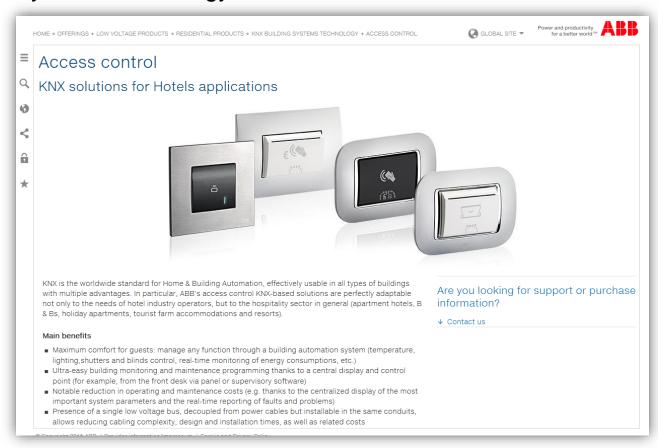






Millenium Access Control Range International web-site

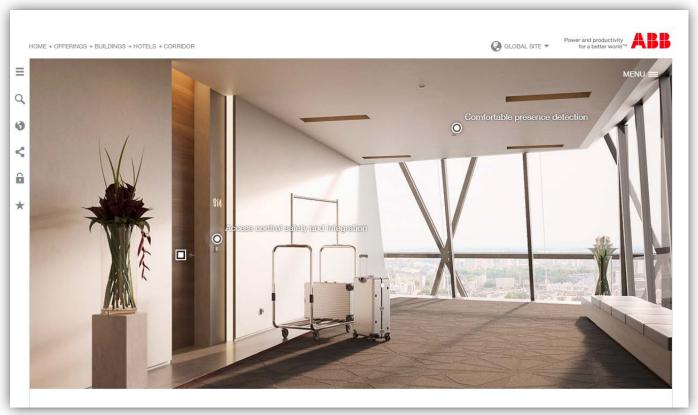
 http://new.abb.com/low-voltage/products/knx-buildingsystems-technology/access-control





Millenium Access Control Range Better Space Hotel

- Access Control integrated into Better Space Application
- http://new.abb.com/buildings/hotels





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





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" Contact persons

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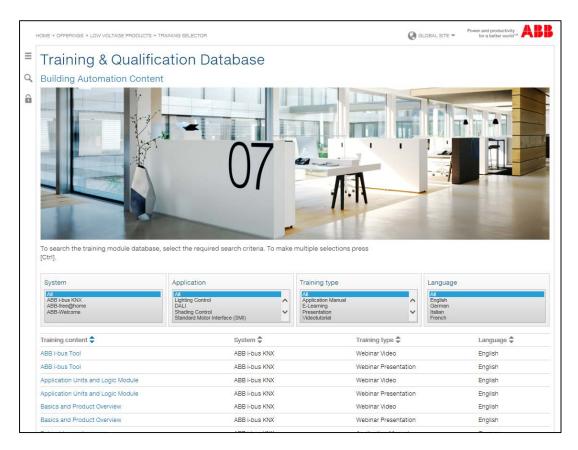
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Webinar "Millenium Access Control" Training & Qualification Database: Training Selector





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





Webinar "Millenium Access Control" Trainings 2016 in Heidelberg

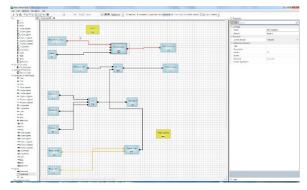


- KNX Tutor Course: 17th to 21th October 2016
- Various courses KNX Security Panel GM/A 8.1 are planned ask your Sales Manager!
- Additionally: <u>Certified Basic Training</u>: 21th to 25th Nov. 2016 TRAINING



Webinar "Millenium Access Control" Next Webinar





Wednesday 2nd 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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