Smarteh Building Automation Solution

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Advantages of Smarteh building automation solution

1) Energy (and thus money) saving is one of the main atributes of Smarteh building automation solution. Online energy calculation and prediction of return on investment is used in beginning of the project to present savings to the investor.

2) Standard Ethernet network is used for communications with hotel rooms. One port per room is enough for room automation controller.
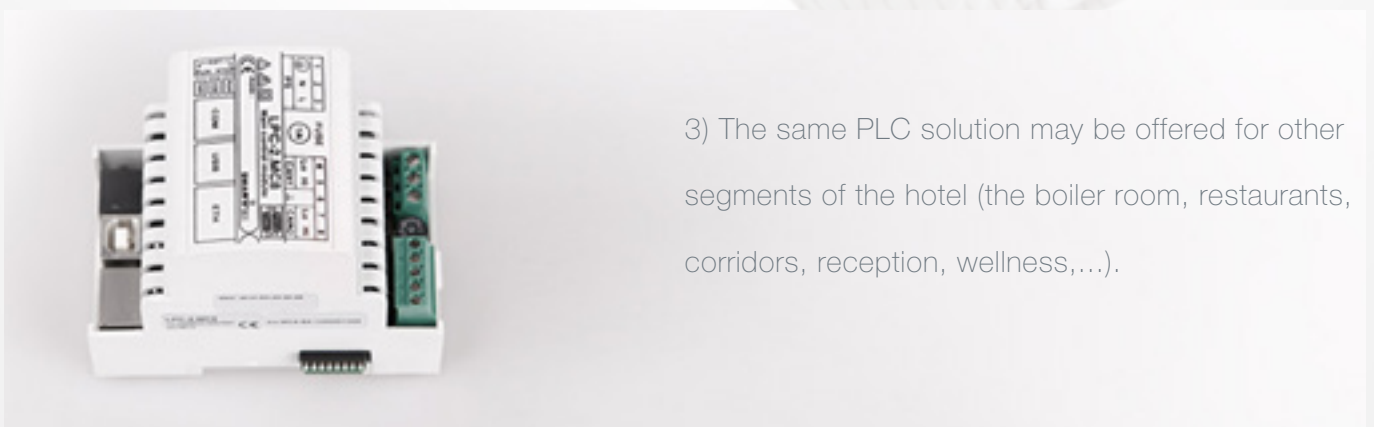
3) The same PLC solution may be offered for other segments of the hotel (the boiler room, restaurants, corridors, reception, wellness,...).

4) All automation systems are managed with a single Building Management System - BMS. With this centralized concept we achieve easy operation, energy saving, low-cost maintenance and fast reaction before a guest even notices an error.

5) We offer wide range of products for access, temperature control etc. to cover functionality demands. From simplest and affordable LED modules to the latest modern colour LCD 3,5" panels and 7" touch screens.
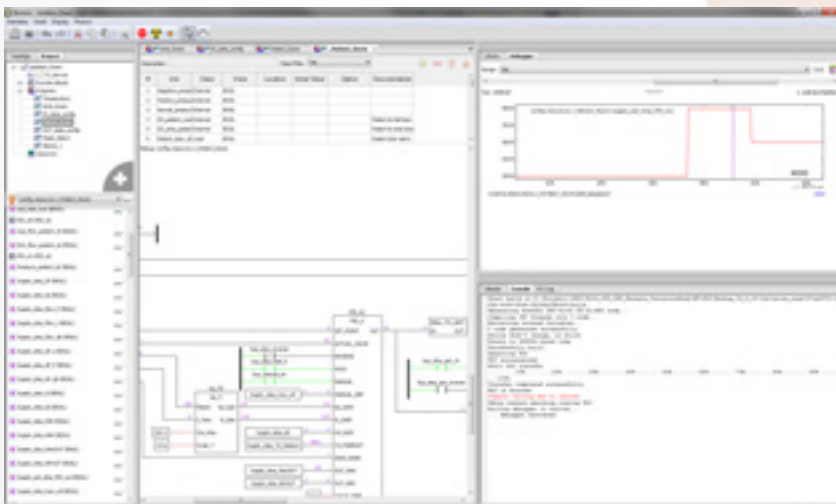

6) Our control modules can adapt to any kind of designer's requirements (frame of metal, glass, wood,...).

7) Colour LCD temperature panel can be customized by customer's wishes (eg. name and image of the hotel and can also be engraved in module frame.

8) Local system integrator is maintaining the system. Thought this, client gets reliable support and quick response time.

9) Free and powerful application is used for programming automation controllers. As based on standard IEC programming languages, easy learning and usage is achieved for automation programmers.

10) We offer free training and responsive support to our system integrators.

TOP!

11) System integrator can freely program Smarteh controllers to any client's demand. Smarteh can support system integrator with all needed SW for both BMS as for the automation controller. System integrator gets everything to maintain Smarteh building automation solution.

12) We offer our system integrators help in marketing and sales, continuous development of new products and support of a well standing company with clear vision.

SMARTEH

LIVING SYSTEMS

We can control everything

Building Management System

Ethernet TCP/IP

Intelligent Hotel rooms
- Heating & Cooling Control / Ventilation Air Control
- Lights Control
- Presence Control
- Sun protection Control
- Room statuses
- Access Control
- AirQuality Control

Kitchen areas
- Heating & Cooling Control / Ventilation Air Control
- Lights Control
- Presence Control
- System statuses
- Access Control
- AirQuality Control

Lobby, corridors
- Heating & Cooling Control / Ventilation Air Control
- Lights Control
- Presence Control
- Sun protection Control
- System statuses
- Access Control
- AirQuality Control

Boiler plant
- Heating/Cooling water Control
- Energy Source Control
- Oil&Gas source Control
- Solar source Control
- Heat pump/Chiller source control
- Boiler plant statuses

Restaurants
- Heating & Cooling Control / Ventilation Air Control
- Lights Control
- Presence Control
- Sun protection Control
- System statuses
- Access Control
- AirQuality Control

Kitchen Hoods
- Ventilation Air Flow Control
- Safety features Control
- UV Lights Control
- Touch panel control interface
- HARVEL demand controlled ventilation system
- Energy saving Calculator module

Air Handling Units
- Air Flow & Quality Control
- Air Temperature Control
- Enthalpy exchange control
- Humidity air Control
- RFID & cascade control algorithms
- AHU statuses

Other
- GARAGE
- SWIMMING POOLS
- SPA FACILITIES
- Custom Automation Control
- Heating & Cooling Control / Ventilation Air Control
- Lights Control
- Presence Control
- Sun protection Control
- System statuses
- Access Control

Offices
- Heating & Cooling Control / Ventilation Air Control
- Lights Control
- Presence Control
- Sun protection Control
- Room statuses
- Access Control
- AirQuality Control

Hotel Management System

Remote Access (maintenance)

KITCHENS
- Individual area automatic temperature and airflow control, Energy saving changing modes by presence
- Automatic occupancy detection for lighting control
- RFID key-card access control
- Individual kitchen hood automatic exhaust and supply airflow control
- Automatic kitchen hood UV lights control with safety protection
- Demand dependant air flow control at supply level
- Air Quality control

PUBLIC SPACES
- Individual area automatic temperature and airflow control, Energy saving changing modes by presence
- Automatic occupancy detection for lighting control
- Combined light/HVAC automatic blind control
- Atmospheric conditions compensation
- RFID key-card access control
- Demand or presence dependant air flow control at space level
- Variable set point with load dependant compensation of supply temperature control
- Air Quality and Humidity control

SERVICE SPACES
- Indoor temperature control of distribution network water temperature
- Total interlock between heating and cooling control (dependant on HVAC system)
- Demand or presence dependant air flow control at room level
- Variable set point with load dependant compensation of supply temperature control
- Room or exhaust or supply air humidity control
- Enthalpy exchange stepless control
- Air Quality control

LIVING SPACES
- Individual room automatic temperature and airflow control, Energy saving changing modes by presence, balcony indication and room reservation state
- Atmospheric conditions compensation
- Automatic occupancy detection for lighting control
- Presence detect. by RFID cardholder or movement
- Combined light/HVAC automatic blind control
- DoNotDisturb, RoomService, Occupy, SOS status
- RFID key-card access control
- Air Quality and Humidity control

SUPERVISION
- Advanced supervision control with interlocks between the systems
- Commands, Statuses
- Parameters, Values
- Graphical presentation
- Alarming, Logging
- Trending, Scheduling
- Remote access for the maintenance
- Connection to Hotel Management Systems
- Peek and restarts distribution and reduction

Intelligent hotel room

The hotel room solution from Smarteh is designed with two main goals; the guest must experience the maximum comfort and security while on the other hand the hotel operator must be able to obtain a high level of energy efficiency and optimize the workflow of the hotel staff.

With the Smarteh hotel room solution the energy efficiency will improve to the highest level, without compromises in the comfort for the hotel guest.

With innovative control solution for temperature regulation, lighting, shading and room access management, Smarteh has created an easy to use and state of the art solution.

Temperature regulation

Smarteh LCD temperature unit enables energy efficient climate control for heating and air conditioning in hotel room applications. Intuitive user interface allow the guest to easily set the desired temperature. The background picture can be customized with any picture for example hotel logos, etc. The unit is compatible with a wide range of different frames, to integrate perfectly to any interior design. It comes in two versions, touch and button. Upon request also the casing color can be customized.

The room temperature can be set locally by the guest or centrally from the BMS. In both cases the temperature unit reacts precisely and economically to obtain the perfect comfort for the guest without wasting unnecessary energy.

Lighting / shading

Smarteh lighting and shading driving offers a comprehensive solution for the environment of the guest room. Situation based operation of the panel is specially studied to obtain the set light intensity combining the shading and lighting in order to obtain the effect desired by the guest.

When the guest leave the room the lights turn off, when he comes back the lights will go to back on previously set values. Shading can be adjusted automatically based on outside conditions, locally by the guest or centrally from the BMS.

Room access and occupancy detection

Smarteh Card reader panel offers easy access to the hotel room. It is enough just to approach the keycard to the reader and doors will unlock automatically using the electrical lock in the door frame. If the keycard is valid a green light and sound signal on the reader will inform the user that the doors will unlock. If the card is not valid red light and sound signal will indicate the card was denied and the door remainds locked.

The room status is visible on the panel in front of the door, as: do not not disturb; room service; occupied and SOS alarm. The same information is also shown on the computer at the reception.

To guarantee the highest level of security all the entrances in each room are recorded and archived. The module is available in different colors and languages upon request. Version with ring bell button is also available.

When the guest enters the room and inserts the keycard in the keycard holder, all the room functions becomes available. The temperature control switches to comfort mode. All the sockets in the room gets the power. The receptionist sees in real time that the room is occupied.

The guest can activate the "room service" demand or "do not disturb" function by pressing one of the two touch buttons on the panel.

Both panels support: EM Marine or Mifare RFID standards. All above mentioned panels are available in black or white color

Advanced room control

Smarteh exclusive 7" Touch Screen offers a great solution for the most luxurious hotels rooms or suites.

In addition to all the functionalities described in the previous pages the touch screen offer a whole new level of comfort such as:

- light scenarios,

- creating and saving new light scenarios,

- temperature control for the whole suite in one place,

- blinds control.

Upon request the frame of the touch screen can come in any color. Also the graphic interface, menus and the screes can be customized.

Furthermore it is also possible to use the Smarteh mobile app in combination with the touch screen.

Room controller

Smarteh philosophy for room control is based on a freely programmable, modular PLC controller.

With this solution the system can be easily adapted to any type of functions. The size of the room is not a problem, depending on the number of functions (inputs/outputs) it is easy to select the optimal combination of input and output modules. Even if the hotel has many different types of rooms (suites, apartments, etc.) all of them are controlled with the same type of controllers. This makes it easier when it comes to maintenance during the operation of the hotel.

The room controller can work as a stand-alone unit, or it can be connected to the BMS system in order to make the functioning even fully efficient.

In most cases all the room controllers are connected to the BMS through the local Ethernet network. **This reduces the costs of installation** since there is no need for pulling additional communication cables. Communication through LON network is also possible.
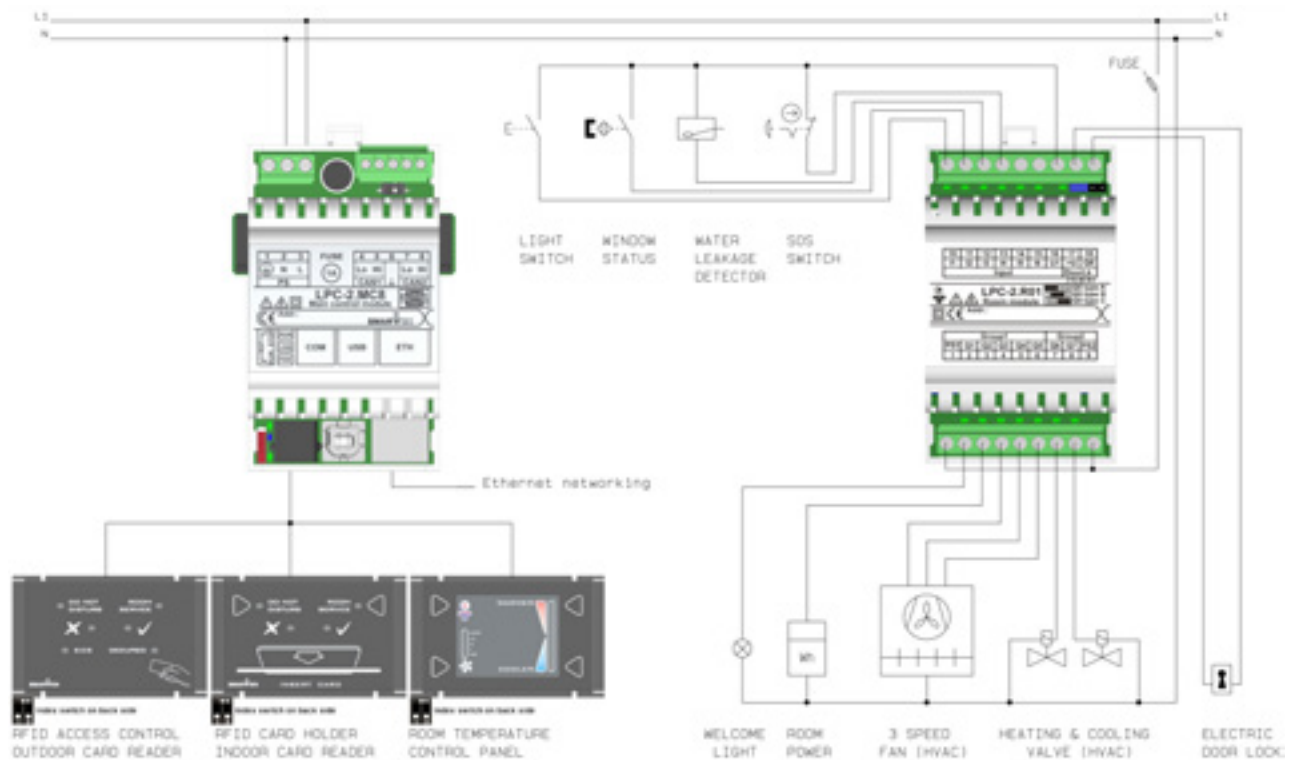
Supervision Through Building Management System

Building Management System - BMS offers an advanced supervision control over all automation system

of the hotel or other building.
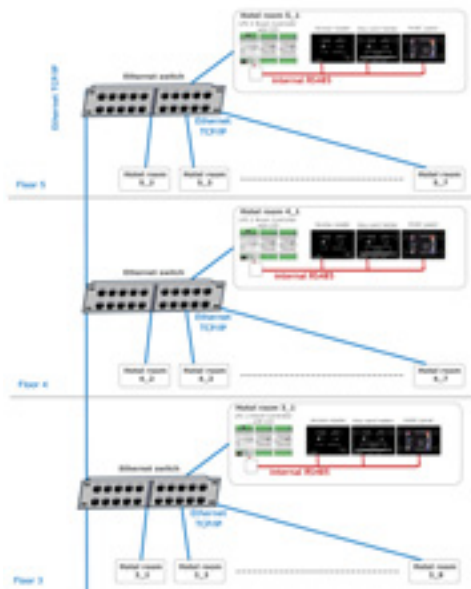
Smarteh automation systems in a building control: access, HVAC systems, lighting, safety issues, and energy source management. These processes run in all spaces of the building, from hotel rooms to restaurants, kitchens, corridors, offices and many more.

BMS acquire all this process data through standard Ethernet network using standard network protocols (Modbus TCP/IP).

Its centralised concept allows the operator to have supervision and control over whole building in real time. Supervision is possible either from local point (reception or back office) or remotely from anywhere.

Based on online data acquisition from building automation controllers it provides to operator next features:

- graphical presentation of processes, values or statuses from each space,

- commands and parameters for controlling these processes,

- alarm management,

- logging feature,

- graphical presentation of trends,

- scheduling of events,

- data exchange with other property management systems, eg. Hotel Management System,

- remote maintenance,

- multilanguage,

- user and password management.
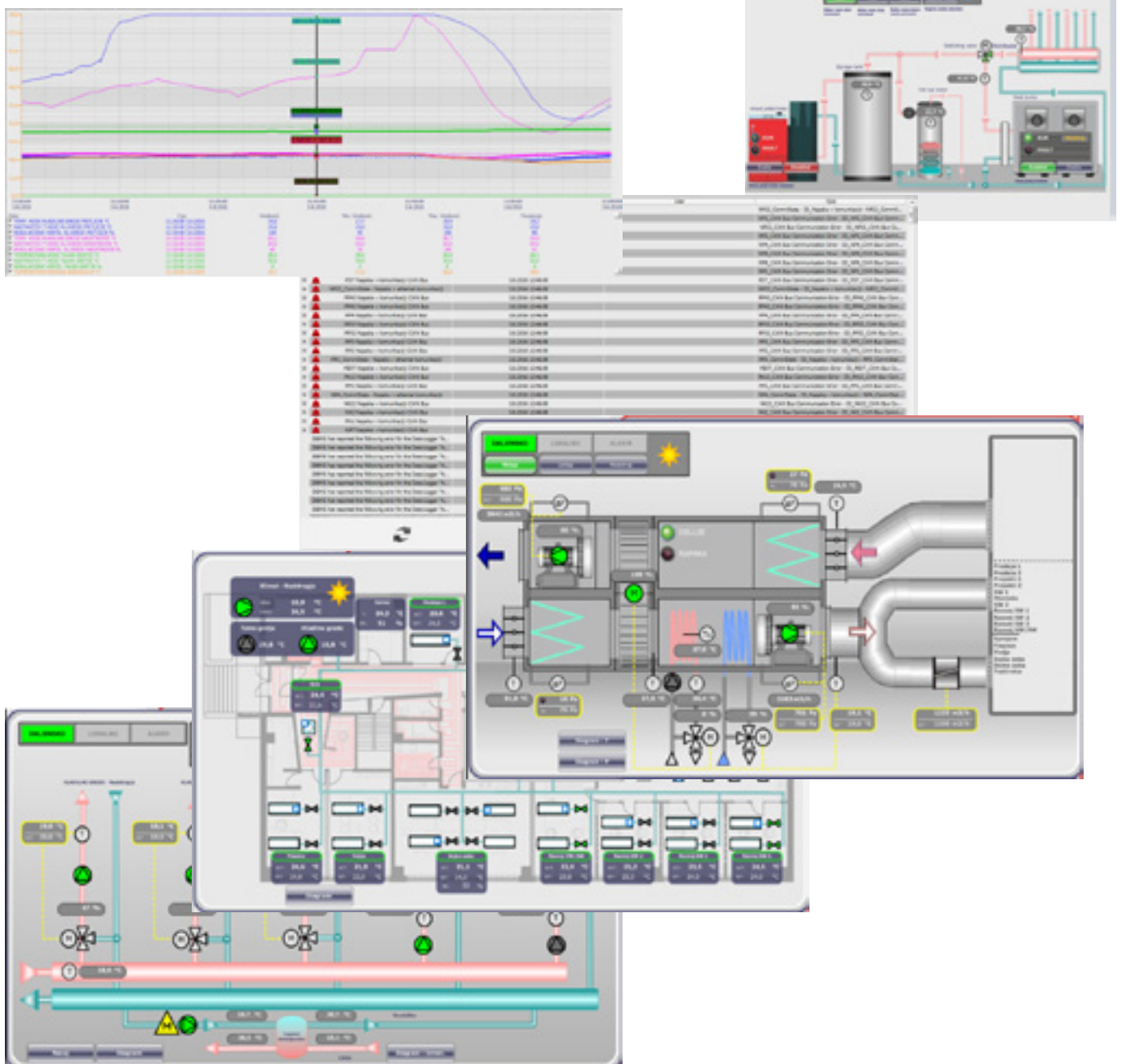
BMS is an essential tool for hotel or building operator, as it allows:

- Immediate reaction in case of detected warnings or alarms on systems.

- Control over energy efficiency of the systems.

- Reduction of personnel needed for operation and maintenance.

- Transparent inside view on hotel operations.

- Historical overview of process behaviour.

Smarteh mobile application

The hotel guest can control his room with classic switches or through wall mounted smart devices.

For the guests who wants to take control of their hotel staying a step further we have designed a cutting edge mobile application.

Through an intiutive and easy to use interface the guest can remotely control all the functions, such as:

- remote heating / cooling,

- fan control,

- lighting,

- shading,

- room service / do not disturb,

- environment scenarios,

- air quality / ventilation.

Access management

Smarteh access system description

The access system is one of the top priority security segments in the hotels and other business buildings.

Implementing the reliable online controlled locking system, the users - guests will feel safe and comfortable and the hotel management will have powerful tool for complete supervision over the access in the hotel.

Smarteh Access Manager - SAM is an application module integrated as a part of the Smarteh Building Management System (BMS), but can also run stand-alone.

It is based on RFID (Radio Frequency Identification) contact-less technology, which is reliable and robust proven concept.

The Smarteh Access Manager is running on centralised computer/s (with USB RFID reader attached for key-card assignment) and it is connected online through the network with the access controllers with access units in the hotel (room doors, halls and facility entrances etc...)
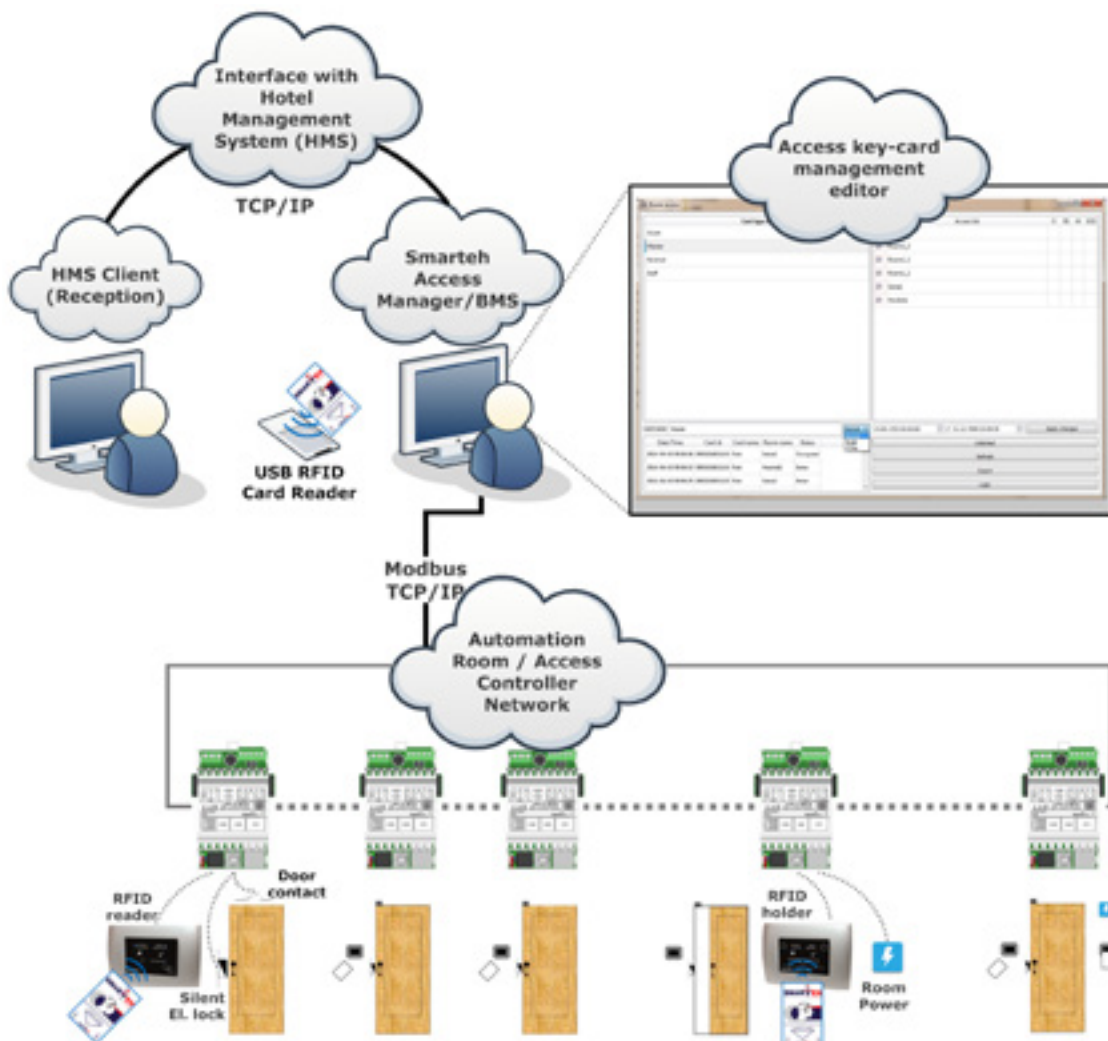
Online concept enables the real-time features as online key-card access assignment, monitoring and logging of all access events.

The interface to Hotel Management Systems can be established for managing the RFID key-cards from the front desk automatically and in real time execution through the network.

The guest experiences fast and simple key-card service process and easy to use access concept from the check-in to door unlocking and room energy activation.

Key-card making at Check-in　　　　　**Opening the door**　　　　　**Activating the room power**

By standard RFID technology (Mifare, EM Marin), the same cards can be used for other purposes as entering the prepayment facilities (pools, spa, garage...) or for other identification purpose.
Besides the access purpose for door locking, the RFID holders plays main role in hotel room occupancy detection that is related to energy saving feature in hotel room.

Smarteh Access Manager features

The Smarteh Access system manages various key-card assignments and features as:

 - addition of the new cards with access rights and validity parameters (expiring time),

 - selective access assignment (suite rooms, facilities-sports, garage, elevators,...),

 - deletion of the card on demand or automatically by expiring time,

 - operator password protection levels,

 - creation of the types-groups of the key-cards (time limited or unlimited master, staff, guest,...),

 - any existing key-card setting adjustment can be done immediately without the presence of the card,

 - connectivity to Hotel Management Systems (FIAS protocol , SQL),

 - comprehensive logging of access events (access allowed, denied) and archiving,

 - filtering the logging data by card or access device type(reader/holder in defined date&time range),

 - exporting the logging data for further analysis,

 - automatic synchronization procedure between the Access System and the access controllers (Key-cards can be assigned even offline and the data is resent to the certain controllers immediately when the connection is established).

Hand in hand with Hotel Management System

Hotel Management System - HMS is powerful application that performs essential financial and organizational functions for hotels, motels and other forms of lodging. These functions include reservations, employee scheduling, accounting, property/maintenance management and customer relationship management.

To achieve the best possible performance from a Hotel Management System, an integration with Building Management System in the hotel must be established to work together. This connectivity brings the new dimension of interoperability including the features that speed and simplify all of the functions needed to serve guests, manage hotel operations, and maintain an efficiently run enterprise (energy consumption, maintenance costs,...).
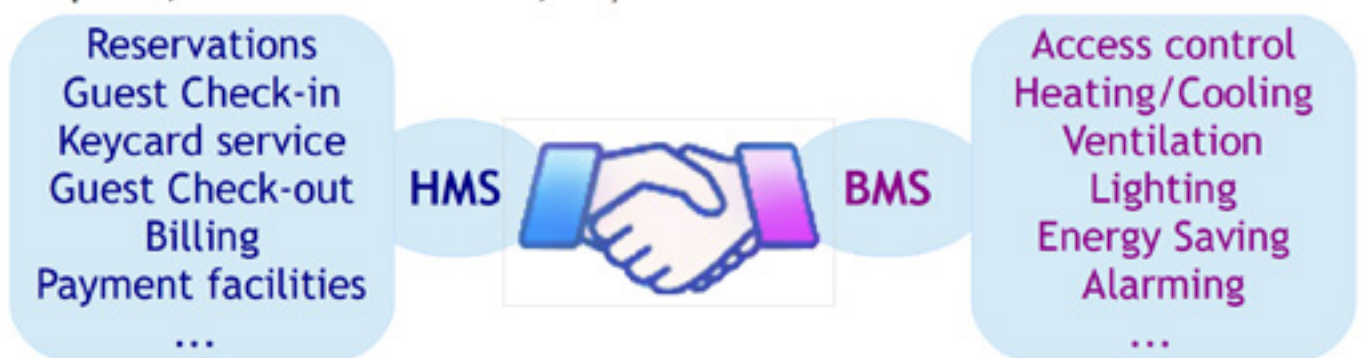
The indispensable automated functions that includes the BMS automation systems can be realized , as for example:

- managing the RFID keycards from the front desk automatically and in real time execution through the network,

- the room management modes related to the gust reservation or arrival,

- additional functions like minibar control, room service and do not disturb statuses etc,...

Smarteh Fidelio Interface, is a service application which communicates with Fidelio HMS server over the Ethernet - TCP/IP protocol.

The data are exchanged using standard FIAS protocol.

Due to the functionality of use for the BMS of the all available data (Record-ID) types by Micros-Fidelio Property Management System (PMS) standard, Smarteh Fidelio Interface application was developed to support next Record-ID types:

- key-card System Service (KSS),

- room Data Service (RDS).

Interfacing between the HMS and Smarteh BMS can be done on the same way, even if the HMS is not by Fidelio, as far as the HMS supports the standard FIAS protocol.

In case that the HMS of the hotel is not supporting the FIAS protocol at all, the interfacing between the HMS and the Smarteh BMS can be done by directly sharing-exchanging the needed data by the SQL database or similar.
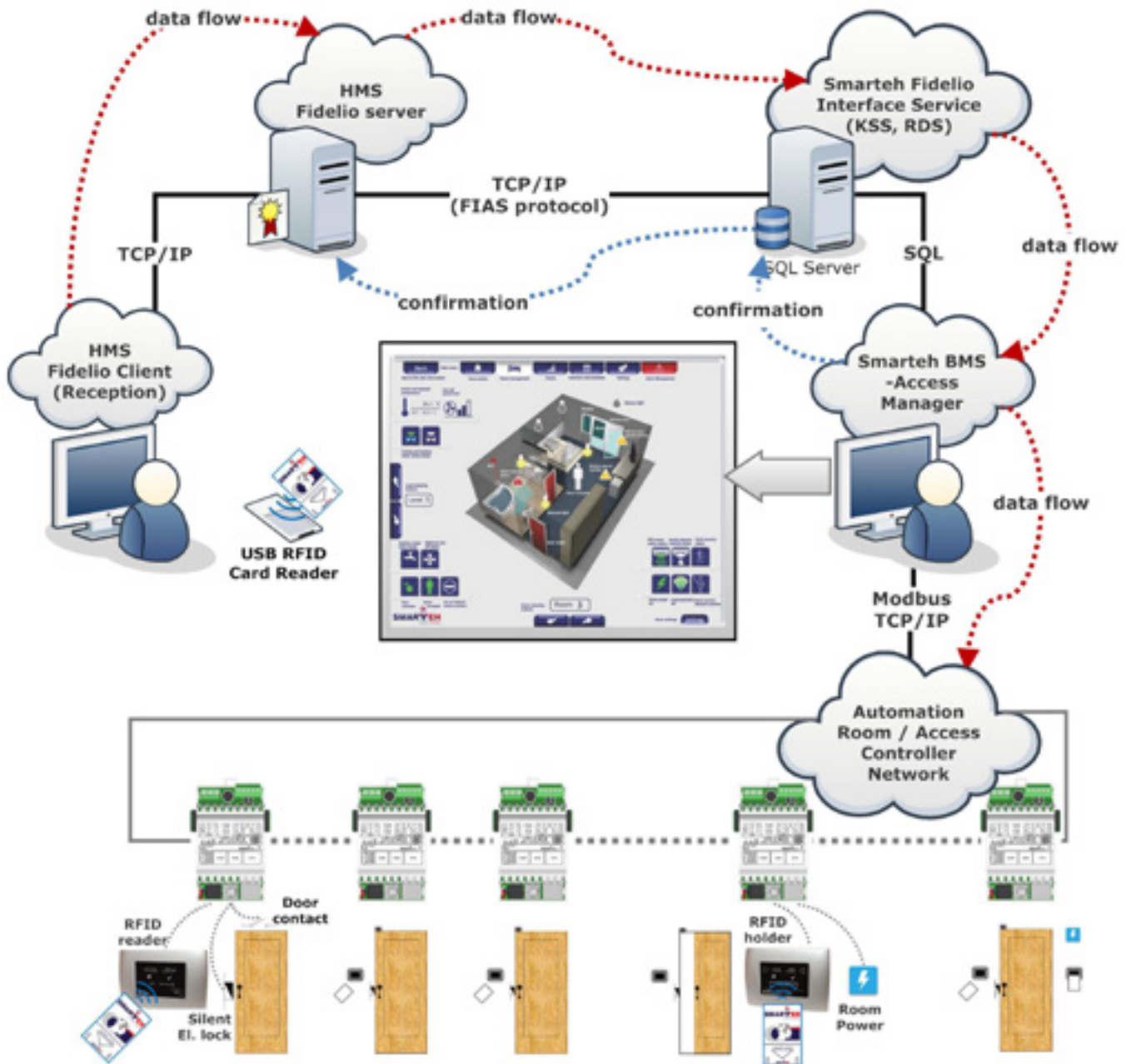
Smarteh Living systems

Passion for outstanding technological solutions

Smarteh is a team of innovators, developers, visionaries and processing equipment manufacturers that can provide a wide range of solutions, from a single controller to an entire turnkey solution. The guiding principle of our work is the passion for innovations in technology. We would like to make our service comprehensive by offering a complete professional and technical support. Annually we develop and produce thousand of controllers mainly installed in large cruise ships, oil platforms and luxury hotels all over the world.

Smarteh references

We have developed and produced different room controller equipment for controlling of cooling and heating systems on:

 - some of the most spectacular ships:
Queen Mary 2, AIDA Stella, Carnival Breeze, Europa 2, Mein Schiff 2, Mein Schiff 3, Saga Pearl II and many others

 - oil&gas projects:
USAN, Wind Carrier, Wind Carrier 2, Jasmine, CLOV

 - some big hotel complexes:
Hilton – Singapore,
Park-Hyatt Dubai – UAE,
Radisson Blu Hotel Istanbul - Turkey,
International Hotel Varna – Bulgaria,
Maestral – Montenegro,
Hotel Mauripol - Ukraine

AIDA CRUISES

SILVERSEA

TOTAL

EUROPA 2

TUI Cruises

Saga

QUEEN MARY 2

NCL NORWEGIAN CRUISE LINE

AZURA

Carnival

PARK HYATT DUBAI

Costa

CORAL PRINCESS CRUISES

Radisson BLU

Deutsche Post

BIOTERME

ACCOR

PRINCESS CRUISES

LANDESKRANKENHAUS FELDKIRCH

MSC CRUISES

Boehringer Ingelheim

HOTEL KOZANA

perla

magmaX

MSC PREZIOSA

MAROF

LB=BW