

# Smart Heating and Safety Management in an Italian Holiday Mountain Boutique Hotel

Centralized Room-Level HVAC and Safety Control with Wireless, Non-Intrusive Automation

Dimaro Folgarida, Italy

Milesight Partner  
Marcom srl,  
LOYTEC electronics GmbH

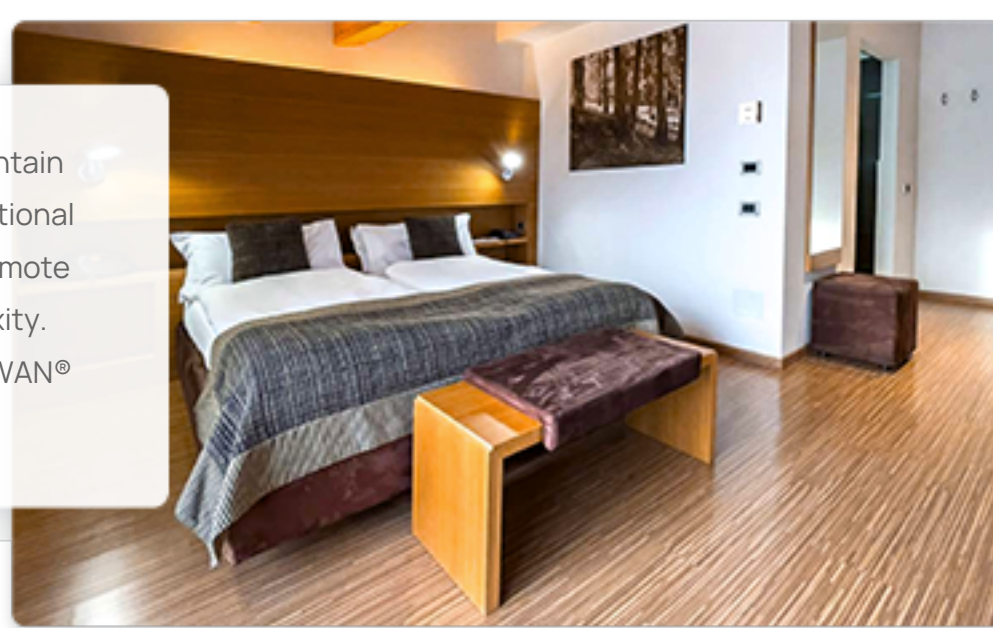
Location  
Dimaro Folgarida, Italy

Applications  
HVAC Control,  
Indoor Air Quality Monitoring,  
Infrastructure Management

Devices Deployed  
WT101\*57, AM102L\*27,  
EM300-DI\*27, UG63\*6, UG65\*1

## Background

Located in Val di Sole within the Brenta Dolomites ski area, the Holiday Mountain Boutique Hotel is a seasonal mountain retreat where guest rooms and bathrooms require individualized HVAC control and reliable safety measures. Traditional systems struggled to deliver personalized room-level temperature control, optimize energy usage, and support remote management. At the same time, ensuring fast response to bathroom emergency situations added further complexity. To address these challenges, the hotel implemented a fully automated heating and safety system based on LoRaWAN® technology, enabling centralized management, tailored room comfort, and real-time emergency monitoring.



## Challenges



### Fragmented Heating Systems

The building's heating and plumbing systems were installed in different phases over decades, resulting in inconsistent infrastructure across rooms.



### High Cost & Disruption of Traditional Automation

Conventional automation would have required major demolition and structural work, making it costly and highly disruptive.



### Lack of Centralized Control

Without a unified system, managing temperatures and monitoring all rooms remotely was difficult and inefficient.



### Guest Comfort & Safety Challenges

Ensuring each room met individual comfort preferences while integrating bathroom emergency alarms posed a complex challenge.

## Solution

Milesight, together with Marcom srl and LOYTEC, deployed a LoRaWAN® based system to automate HVAC control and emergency monitoring throughout the hotel.

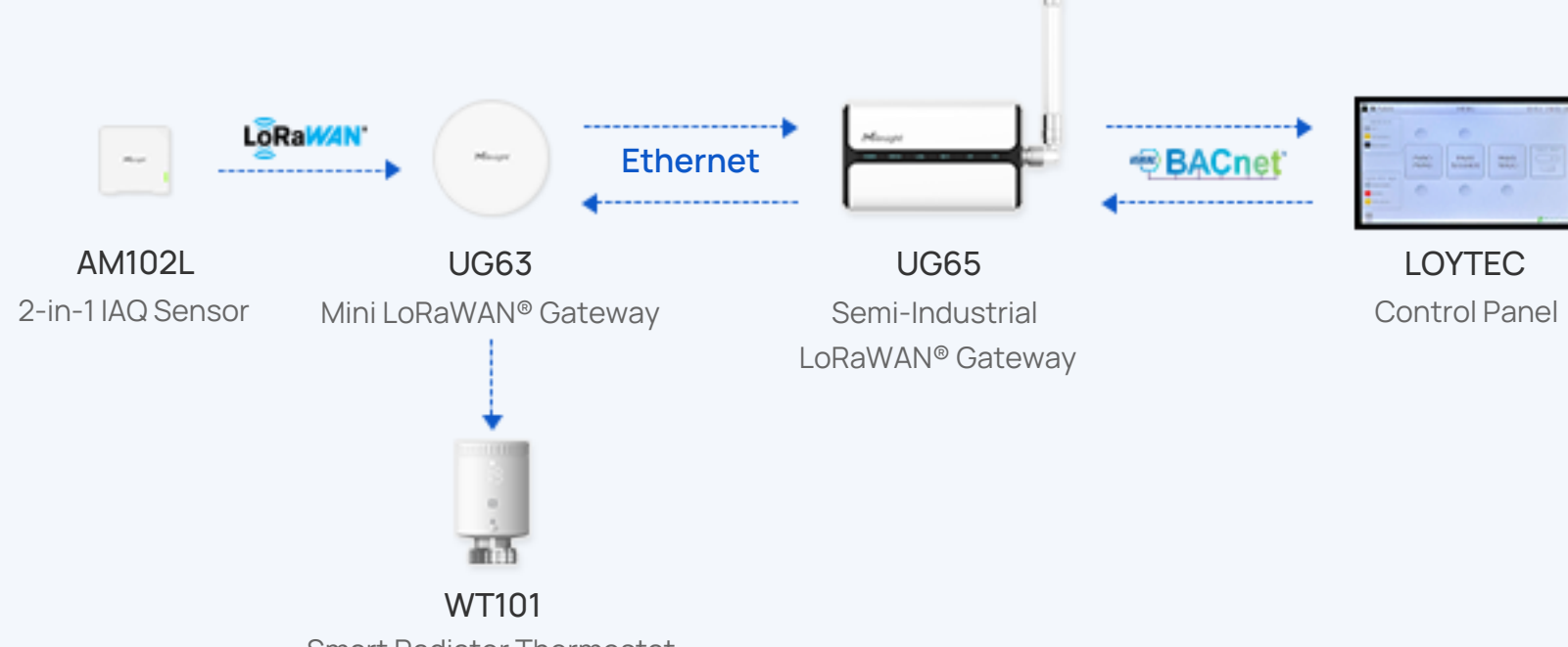
- WT101 Smart Radiator Thermostat** Installed on each radiator, the WT101 receives real-time temperature data from the AM102L sensor in the same room. The valve adjusts accordingly to maintain the desired temperature, providing personalized comfort for each guest while optimizing energy efficiency. Its compact design allows easy installation in existing buildings without altering the plumbing.
- AM102L 2-in-1 IAQ Sensor** Installed in each room, the AM102L monitors ambient temperature and wirelessly communicates with the WT101 valve to enable precise room-level climate control. It also supports integration with scheduling and occupancy-based management.
- EM300-DI LoRaWAN® Pulse Counter** The EM300-DI connects to bathroom pull-cord alarms to enable real-time emergency monitoring. When triggered, the device detects the contact closure and sets the input status to "1". The signal is then transmitted via UG63 to UG65, which acts as the network server. The alarm data is processed and displayed in real time on the control panel's floor plan, allowing staff to quickly locate and respond to incidents.



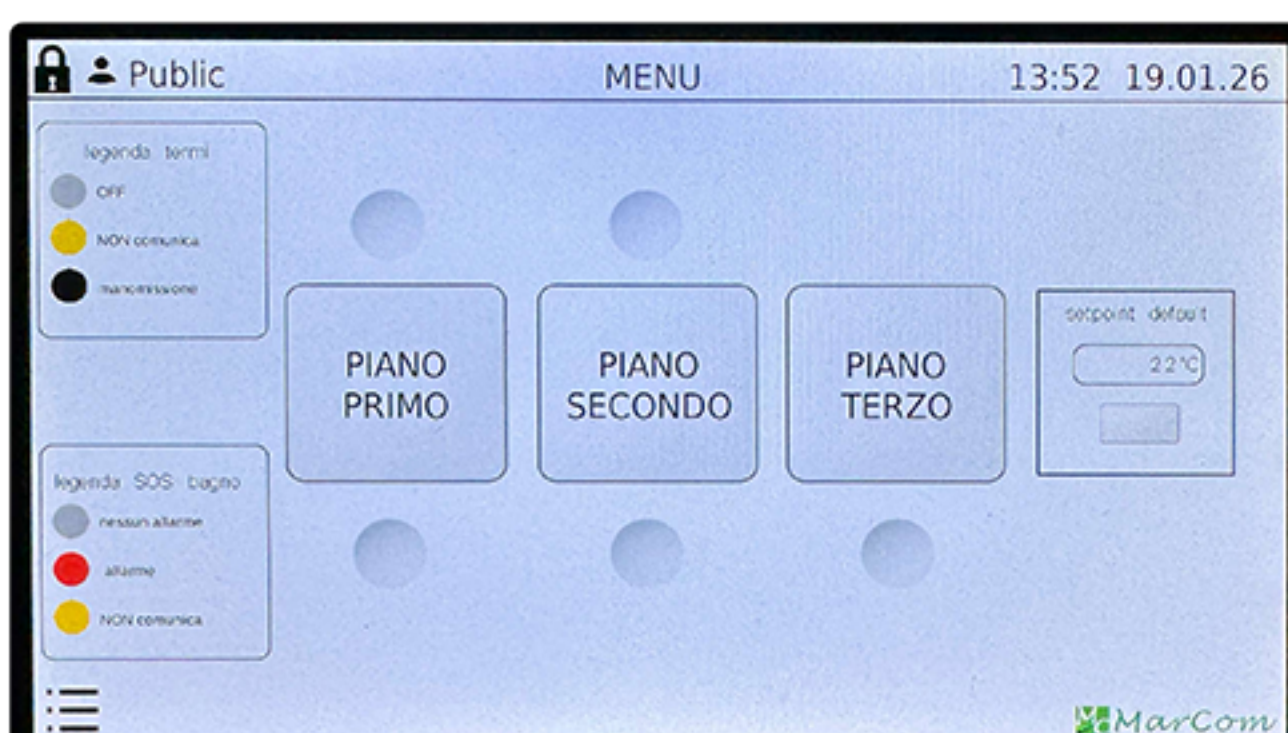
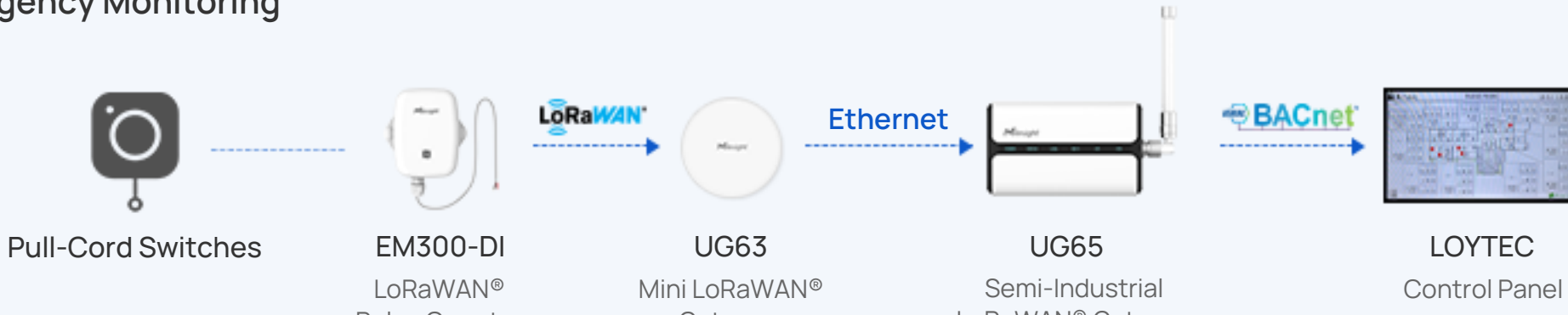
- UG65 Semi-Industrial LoRaWAN® Gateway** The UG65 serves as the main gateway and network server, collecting data from all connected devices across the hotel. It coordinates communication within the LoRaWAN® network and ensures stable, centralized management of the system.
- UG63 Mini LoRaWAN® Gateway** The UG63 acts as a secondary gateway to extend coverage in areas with weaker signals. It receives device data and forwards it to the UG65, ensuring reliable connectivity in all rooms and floors, even in complex building layouts.



### Room HVAC Control



### Bathroom Emergency Monitoring



The system delivers centralized monitoring, precise room-level temperature control, energy savings, and real-time emergency response. It unifies management across all hotel zones, ensures personalized comfort for guests, and provides a scalable foundation for future expansion.

## Results

### Personalized Guest Comfort

Room-by-room temperature control ensures each guest enjoys their preferred climate, while the heating system adapts dynamically to occupancy and schedule.

### Enhanced Safety & Responsiveness

Bathroom emergency alarms are monitored in real time, allowing hotel staff to respond instantly to any incidents, ensuring total guest safety.

### Operational Efficiency & Energy Savings

Centralized monitoring via the gateway network reduces maintenance effort, optimizes energy usage, and enables data-driven management of all heating and safety systems.

### Scalable & Future-Ready System

The LoRaWAN® network and open architecture support future upgrades, including additional sensors or new automation features, providing a modern, adaptable smart building infrastructure.

## Why Choose Milesight



The feedback has been extremely positive. The project's objectives have been fully met, providing a solid foundation for further developments. The quality of the equipment supplied and the technical support provided were instrumental in ensuring the project's complete success.



## Partner

### About Marcom

Marcom S.r.l., with twenty years of experience in industrial automation and communication, specializes in innovative solutions for M2M, IoT, and automation. Its extensive range of hardware and software products is designed to streamline the work of installers and integrators. The company stands out for its advanced LoRaWAN® solutions by Milesight, a key technology for developing long-range, low-power applications. Marcom offers complete packages, including LoRaWAN® gateways, sensors for energy monitoring, air quality, and antennas, ensuring efficiency and reliability.



### About Loytec

Founded in 1999, LOYTEC electronics GmbH is a leading European provider of intelligent networked control products for building automation. The company relies exclusively on open and standardized communication protocols, ensuring interoperability and future-proof solutions. Since joining the Delta Group in April 2016, LOYTEC has served as a center of excellence for Delta's Building Automation Business. Its portfolio includes routers and gateways, embedded automation servers and I/O controllers, the L-ROC room automation system, L-DALI lighting controls, and graphical user interfaces via L-Vis/L-PAD touch panels, PCs, or mobile devices.