

BEST PRACTICE IN ITALY – SMART METERING

BASIC INFORMATION

Title of the Best Practice

'Sesto Senso': patented smart multisensory metering system with self-learning capability

Energy efficiency measures implemented in the building: installing smart metering system: controlling energy consumption, IAQ parameters

Location:

City: Bologna

Region: Emilia-Romagna

Country: Italy

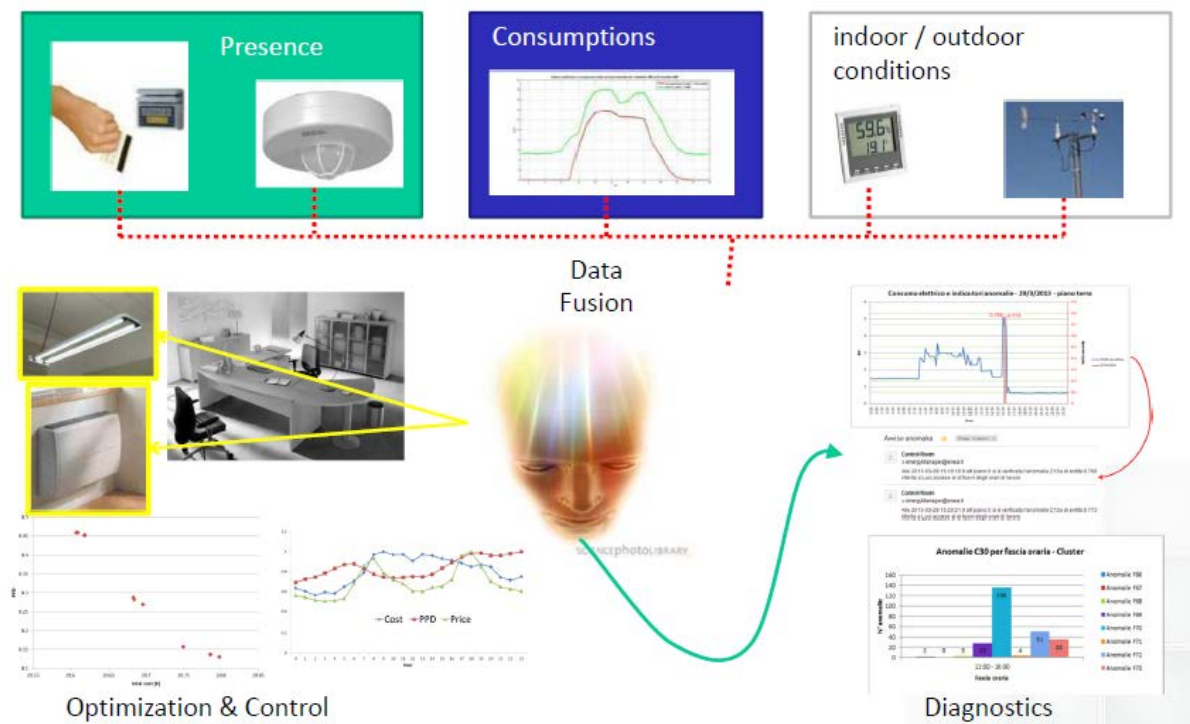
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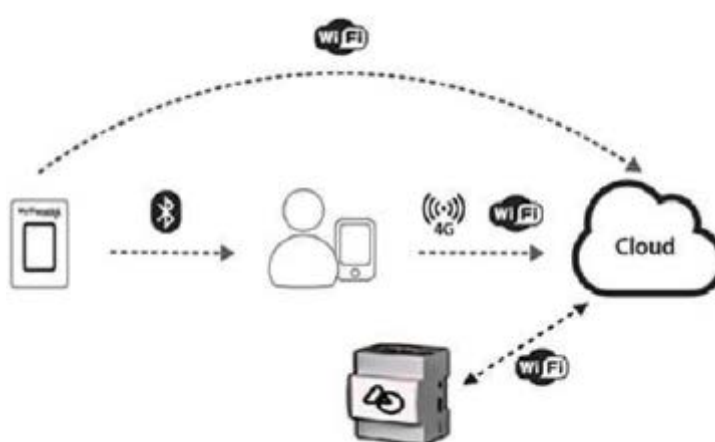
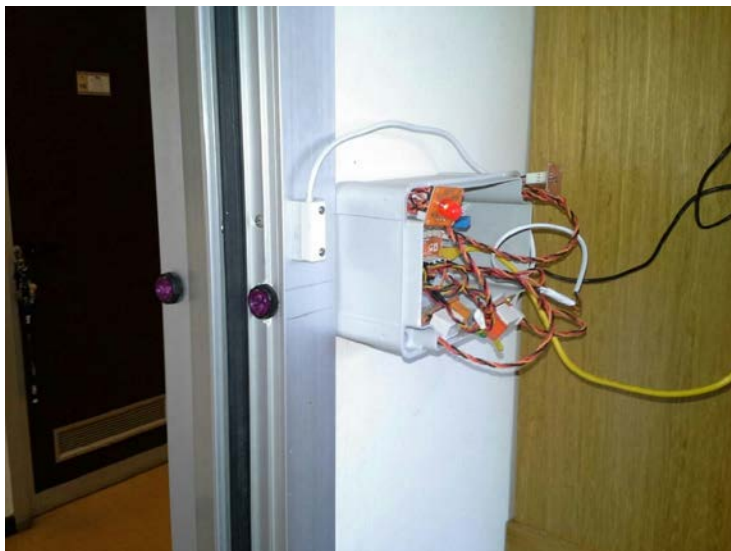
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Partners involved: ENEA - National Agency for New Technologies, Energy and Sustainable Economic Development

Implementation year: 2017

Photos (of a smart metering components):





Source: F. Romanello, S. Romano - ENEA

SYSTEM CHARACTERISTICS

Brief description:

Intelligent multisensory system with totally open and scalable learning capacity both in the hierarchical levels and in the potential of the single element. In addition to monitoring energy carriers, the system includes: a sensory device able to count access to a room and therefore manage attendance so as to be able to administer the users: a virtual CO₂ sensor that exploits the measured temperature values, humidity, number of hours / presence and opening / closing of doors and windows, dates back to the CO₂ value after a set-up phase of the parameters of the neural network of which the sensors are part.

This architecture and cooperative logic also allows other repercussions such as that of self-validation of the acquired signals: in this case case is solved with the technique of redundancy and with the implementation of a routine that works with neural networks and fuzzy logic

Type of a building where a smart metering (SM) system is installed: Residential

Responsible person for monitoring consumption: Romanello Francesco - Pieroni Francesco - Romano Sabrina - Vaccari Erica

Name of a company which installed the SM system: ENEA - Lungotevere Thaon di Revel, 76 - 00196 ROMA

FINANCIAL SOURCES AND FINANCING DETAILS

Total investment value: *n.a.*

Sources of financing: *internal*

Electricity savings: *n.a.*

Or fuel savings: *n.a.*

Cost savings: *n.a.*

PROJECT IMPLEMENTATION BENEFITS

Thanks to an attendance detection system, it can independently activate or deactivate lights, appliances, shutters and solar shading in the home; It also has a sensor that analyzes the percentage of CO2 and warns if you need to open the windows to ventilate the premises. Sesto Senso is an intelligent home automation solution, composed of a series of environmental monitoring sensors that acquire data on temperature, humidity, luminosity, CO2 values, but also information on movements, noise and transit of people in the home. They communicate, via wi-fi, with a central unit that collects data on the environmental situation, re-elaborates them and independently determines the correct energy management of the home. Inserted in a small box, Sesto Senso is not cluttered and can use sensors already installed for other purposes, thus integrating other functions aimed at safety, home automation, protection against fire and flooding, and finally assistance to user in need. The use of the neural network technique gives the multisensory system the ability to perceive additional information with respect to the pure and simple information content of the single signals coming from the sensors that are part of the installed sensory network

ADDITIONAL INFORMATION

Patented system with question number 102016000091625, 09/12/2016 registered