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iURBAN: Intelligent Urban Energy Tool

Editors:
Narcis Avellana, Sensing & Control, Spain
Alberto Fernandez, Sensing & Control, Spain
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Description:

iURBAN: Intelligent Urban Energy Tool introduces an urban energy tool integrating different ICT energy management systems (both hardware and software) in two European cities, providing useful data to a novel decision support system that makes available the necessary parameters for the generation and further operation of associated business models. The business models contribute at a global level to efficiently manage and distribute the energy produced and consumed at a local level (city or neighbourhood), incorporating behavioural aspects of the users into the software platform and in general prosumers.

iURBAN integrates a smart Decision Support System (smartDSS) that collects real-time or near real-time data, aggregates, analyses and suggest actions of energy consumption and production from different buildings, renewable energy production resources, combined heat and power plants, electric vehicles (EV) charge stations, storage systems, sensors and actuators. The consumption and production data is collected via a heterogeneous data communication protocols and networks. The iURBAN smartDSS through a Local Decision Support System allows the citizens to analyse the consumptions and productions that they are generating, receive information about CO2 savings, advises in demand response and the possibility to participate actively in the energy market. Whilst, through a Centralised Decision Support System allow to utilities, ESCOs, municipalities or other authorised third parties to:

- Get a continuous snapshot of city energy consumption and production
- Manage energy consumption and production
- Forecasting of energy consumption
- Planning of new energy "producers" for the future needs of the city

Visualise, analyse and take decisions of all the end points that are consuming or producing energy in a city level, permitting them to forecast and planning renewable power generation available in the city.

Keywords: Energy Efficiency, Middleware, Smart Grid, Smart City, Smart Homes, Demand Response, Artificial Intelligence