Editorial

Dear readers:

As a result of the constant growth of cities and the need of users to improve their quality of life, energy consumption has increased due to the electronic devices incorporated in homes (indoor) and in public use applications (outdoor).

Within the stages of a smart grid, stages as a response to demand, the smart metering infrastructure presented in the article ."Electricity consumption meter to promote savings in residential consumers"; in addition, the inclusion of renewable energy in photovoltaic systems, wind, and that may be incorporated into the network from micro-generation including distributed generation should be contemplated. The massive deployment of charging centers for electric vehicles and an increase in the use of induction stoves in homes should be considered.

Consequently, the customer demands an electrical grid that supports new services, many of which give birth to a smart city capable of providing services in favor of society. Many contemplate intelligent household waste management and innovative park systems, among others.

Electrical substations must require robust grounding systems to ensure the quality and reliability of the system that is incorporated into an internet of things as it is called to applications that relate to telematics which involves a heterogeneous wireless network that will allow the connection of sensors or smart meters in micro-grids based on clean energy systems. It is essential to demonstrate in the article, "Methodology for design of electrical substations considering the effect of the potential gradient in surrounding metallic structures."

A fault-tolerant control system that evaluates in the article "Fault-Tolerant Passive Control of sensing in dynamic compensation devices - SVC through a hybrid strategy"will be involved because each intelligent device may present contingencies that should. In most cases, be self-controlled, which involves artificial intelligence techniques and robust control that includes algorithms developed in the web system.

Additionally, the different applications involving sensors require platforms developed and integrated into embedded systems and non-licensed software to achieve a more significant deployment of solutions with reduced costs because the number of devices depending on the outdoor application could reach a hundred of these devices. Such impact is evaluated in the article Remote learning platform for microcontrollers and internet of things."

Thus, smart grids and smart cities are in continuous change and advancement, which warns new research fields in which georeferencing aspects must be incorporated for the exact location of a sensor. Such a sensor can be the electric energy meter or the device to locate the waste container of a neighborhood or sector, in addition to other implications that are evaluated in the article "Design and validation of IoT measurement system for a photovoltaic generation."

Electrical grids, telecommunication networks, water networks, gas networks, and mass public transport networks may incorporate georeferenced deployments that facilitate and reduce deployment time and subsequent maintenance through graph theory and heuristic techniques.

A city solution incorporates several resources that must be optimized to minimize the impact on the investment. A better lifestyle implies planning and an opportunity for the technological solution to be scalable over time, not just a momentary solution.

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