Universidad de Alcalá

EFFICIENT SENSING TECHNIQUES FOR SMART CITY APPLICATIONS

TECHNOLOGY OFFER

Code

TIC_UAH_33

Application areas

- Information and Communication Technologies

Type of collaboration

- Interested in companies or institutions to conform a consortium for a project proposal to make it the system real
- Manufacturating Agreement
- Services Agreement

Main researches

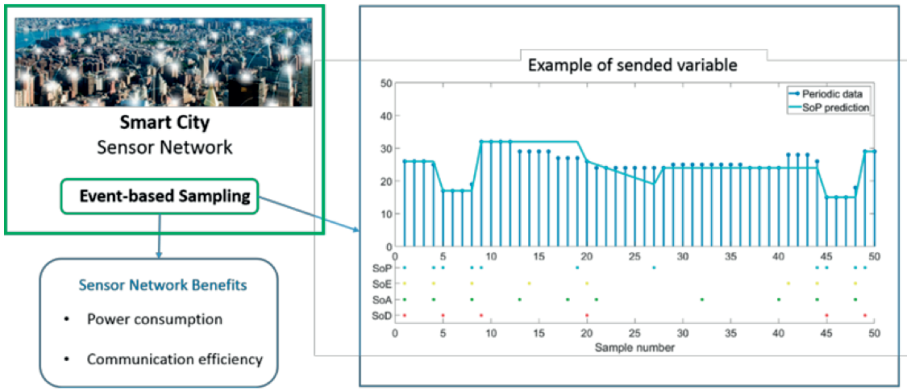
Prof. Felipe Espinosa
Prof. José Luis Lázaro Galilea

CONTACT

OTRI Universidad de Alcalá
Escuela Politécnica Superior
Campus Científico-Tecnológico
28805, Alcalá de Henares
(Madrid)
(+34) 91 885 45 61
otriuah@uah.es

@otriuah

OTRI Universidad de Alcalá



ABSTRACT

The city of the 21st century demands a set of digital services that provide citizens with improved access to resources such as transport, education, health care, energy, safety and the environment. Giving intelligence to these services means having an extensive network of sensors and the management of information supported by the Internet of things (IoT). Wireless sensor networks present two major challenges: efficient communication and energy autonomy. Event-based sensing techniques help to optimise both by analysing the information registered in the sensor and making it available to the network only when necessary. In the GEINTRA group we have experience in event-based sensing techniques and their application to the field of Smart Cities.

ADVANTAGES AND INNOVATIONS

Compared to classic techniques of network periodic sensing, wired or wireless, this technology offer has the following advantages:

- Adaptation of the decision strategy of when to measure and, above all, when to transmit the information to the processing central node.
- Extension of the average battery life powering the sensory node and therefore the node life.
- Optimization of the massive use of the communication network allowing the link between sensory nodes and these with the processing central node.
- Selection of the most appropriate event-based estimation technique, taking into account trigger thresholds and maximum waiting times.
- Modelling the sensed variable behavior to evaluate the triggering mechanism implementation outside the sensorial node itself.
- Integration of event-based sensing techniques with available IoT solutions and cloud processing.