

Annual Conference of the IEEE Industrial Electronics Society (IECON 2022)

Special Session on Smart Cities Interoperability and Connectivity

Organized by

António Espírito-Santo (aes@ubi.pt)
University of Beira Interior, Portugal

Vincenzo Paciello (vpaciello@unisa.it)
University of Salerno, Italy

Reza Abrishambaf (abrishr@miamioh.edu)
Miami University, Ohio, USA

Gustavo Monte (gustavo.monte@ieee.org)
Universidad Tecnológica Nacional, Argentina

Victor Huang (v.huang@ieee.org)
Sage Technologies, USA

Call for Papers

Theme: Smart Cities Interoperability and Connectivity

The construction of smart cities brings together a diversity of resources and infrastructures that, by definition, need to be interconnected. Whether sensors or actuators, smart transducers are the infrastructures' building blocks. Features such as device clustering, plug and play, self-identification, or interoperability must be present in elements that integrate infrastructures belonging to a smart city. Within the smart city, it is possible to find several subsystems capable of interconnecting and making decisions.

Water distribution networks need to detect losses in infrastructure, monitor water quality and account for consumption, following the process from water extraction, treatment, distribution and wastewater treatment, to the return of it to the environment with minimal impact.

Energy networks must integrate a diversity of energy sources, some of renewable origin, and distribute energy to consumers, guaranteeing a contractual quality of service.

Urban mobility is another example integrated into a smart city. Fleet management allows offers inhabitants the expected service. However, the management task demands the interconnection of a great diversity of elements, seeking at the same time to reduce the environmental and energy impact.

It is easy to understand the interconnection between these subsystems. As an example of interconnection, we have the water-energy nexus. Obtaining and processing water requires energy, and the same goes for energy production, which requires a large amount of water.

Good quality papers may be considered for publication in the IEEE Trans. on Industrial Electronics, subject to further rounds of review.

The previous examples must adopt the information pyramid DIKW (Data, Information, Knowledge, Wisdom). Achieving this vertical model demands the adoption of interoperability models, whether semantic or syntactic.

Topics of interest include, but are not limited to:

1	Smart cities and their subsystems application projects
2	Smart buildings
3	Smart water
4	Smart energy
5	Smart mobility
6	Devices Interoperability and Security
7	Standards and regulations for smart cities
8	Digital transformation of Smart Cities
9	Smart Cities Theory, modelling and Simulation
10	Environmental monitoring technologies
11	Open data and big data analytics
12	AI powered smart cities services

Sponsoring IES Technical Committee(s):

IEEE IES Standards Technical Committee

Submissions Procedure:

All the instructions for paper submission are included in the conference website: <https://iecon2022.org/>

Deadlines:

Full paper submission:

April 15, 2022

Paper acceptance notification:

June 17, 2022

Camera-ready paper submission:

July 29, 2022