THE 4TH IEEE INTERNATIONAL CONFERENCE ON INDUSTRIAL CYBER-PHYSICAL SYSTEMS

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Special Session on

"Sensing and perception for unmanned, automated and intelligent vehicles"

Organized by

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Call for Papers

Theme:
Automated vehicles are emerging cyber-physical systems, entailing several applications: passenger cars, public transport, heavy/large vehicles, ships, unmanned aerial vehicles and other forms of mobility or search and rescue/exploration automated machines. These vehicles need to build a situational and self- awareness by sensing real-time their surroundings to take smart and safe navigation decisions and to implement their main tasks. For this reason, they are equipped with various sensor types, and they use appropriate perception algorithms to 'understand' the raw sensory data. These special session covers the latest trends and breakthroughs related to sensing and perception in automated vehicles (from a hardware and software perspective), including robustness, safety, and validation.

Topics of interest include, but are not limited to:

- Automated Vehicles
- Unmanned, Intelligent Vehicles
- Connected Autonomous Vehicles (CAVs)
- Assisted driving

Accepted papers will be published in an IEEE proceedings volume and will be also submitted for the International Publication in *IEEE xplore*

- Machine learning for perception
- Localisation and mapping
- Sensor fusion
- Model based data aggregation from multiple or distributed sensors
- Sensor data
- Data Operation and Extraction: defect analysis, predictive maintenance, anomaly detection
- Camera, RADAR, LiDAR, Thermal imaging
- Modelling and simulation
- Safety, verification and validation
- Model, Inspection and safety for large Environments and large systems

ICPS Applications: Smart Manufacturing, Robotics, Smart Cities, Energy / Smart Grid, Smart Living, Smart Farming, Mobility, Water Management, Mining, Oil & Gas, Intelligent Enterprise, Smart Transportation, Internet of Underwater Things, Smart Medical Systems.