IEEE Transactions on Industrial Informatics

CALL FOR PAPERS

for Special Section on

Cyber-Physical Threats and Solutions for Autonomous Transportation Systems

Theme: The rapid evolution of technology has radically changed our everyday lives from multiple points of view. Among the others, transportation systems are nowadays populated by smart and interconnected vehicles that need to communicate with each other and with critical infrastructures to orchestrate traffic and mobility. Transportation systems are hence operated through multiple technologies that need to cooperate to provide efficient delivery of goods and human mobility, as well as to provide security in the overall networks. The latter task is complicated by the fact that vehicles autonomously drive and cooperate in the network without human intervention. The overall transportation network can be therefore represented by a cyber-physical system, where a large number of sensors, actuators, and multiple technologies are connected and exchange information. To guarantee the overall network security, attack detection and the design of suitable countermeasures play a fundamental role. The security of cyber-physical systems has been widely studied in literature. However, most of the proposed solutions target either the cyber or the physical threats, without providing a unified view able to detect and mitigate more complicated attacks. The purpose of this special issue is therefore to collect the latest research achievements in the cyber-physical threats and countermeasures in autonomous transportation systems.

.

This special section will focus on (but not limited to) the following topics:

- Methods for detection of cyber-physical attacks in transportation systems
- Design of countermeasures for cyber-physical attacks in transportation systems
- Hardware solutions for mitigating the attacks on controller area networks of automotive
- Protocol and semantics agnostic security solutions to automotive CPS
- Formal modeling of cyber-physical attacks in transportation systems
- Privacy preserving solutions for cyber-physical transportation systems
- Cyber-physical threats in platoons/swarms
- Scalability of the security solutions in autonomous transportation systems
- Blockchain solutions against cyber-physical threats in autonomous transportation systems
- Security testing of vulnerabilities in automotive CPS

Manuscript Preparation and Submission

Follow the guidelines in "Information for Authors" in the IEEE Transaction on Industrial Informatics http://www.ieee-ies.org/pubs/transactions-on-industrial-informatics . Please submit your manuscript in electronic form through Manuscript Central web site: https://mc.manuscriptcentral.com/tii . On the submitting page #1 in popup menu of manuscript type, select: SS on **Cyber-Physical Threats and Solutions for Autonomous Transportation Systems**

Submissions to this Special Section must represent original material that has been neither submitted to, nor published in, any other journal. Regular manuscript length is 8 pages.

Note: The recommended papers for the section are subject to final approval by the Editor-in-Chief. Some papers may be published outside the special section, at the EIC discretion.

Timetable:

Deadline for manuscript submissions	**January 30, 2022**
Expected publication date (tentative)	September 2022

Guest Editors:

- Dr. Alessandro Brighente, University of Padova, Padova, Italy alessandro.brighente@unipd.it
- Prof. Mauro Conti, University of Padova, Padova, Italy conti@math.unipd.it
- Prof. Raadhakrishnan Poovendran, University of Washington, Seattle, USA rp3@uw.edu
- Prof. Jianying Zhou, Singapore University of Technology and Design, Singapore jianying_zhou@sutd.edu.sg