

1st International Workshop on Safety and Security of Intelligent Vehicles

Co-located with the **45th Annual IEEE/IFIP International Conference on Dependable Systems and Networks**

June 22, 2015 - Rio de Janeiro, Brazil

www.lsec.icmc.usp.br/ssiv2015

WORKSHOP DESCRIPTION

Over the last years, aerial and ground vehicles as well as mobile robot systems have been receiving an increased number of electronic components, connected through wireless networks and running embedded software. This strong integration between dedicated computing devices, the physical environment and networking, composes a Cyber-Physical System (CPS). CPS have thus become part of common vehicles, accessible to everyone, such as automobiles or unmanned aerial vehicles. Furthermore, as processing power increases and software becomes more sophisticated, these vehicles gain the ability to perform complex operations, becoming more autonomous, efficient, adaptable, comfortable, safe and usable. These are known as Intelligent Vehicles (IV).

The goal of this workshop is to explore the challenges and innovative solutions regarding Intelligent Vehicles, considering the implications of security and real-time issues on safety and certification, which emerge when introducing networked, autonomous and cooperative functionalities. It aims at joining together in an active debate, researchers and practitioners from several communities, namely dependability and security, real-time and embedded systems, intelligent transportation and mobile robot systems.

NON-EXHAUSTIVE LIST OF TOPICS OF INTEREST

- Architecture, design, implementation and management of IV
- Vehicular and sensor networks
- Functional safety, standards and certification
- Security threats to cyber-physical systems
- Techniques and protocols for cooperative vehicles
- Data communication in networked embedded systems
- Aerial, ground and aquatic mobile robotics
- Collision prediction and avoidance
- Advanced driver assistance systems
- Real-time perception and sensor fusion
- SLAM in dynamic environments
- Real-time motion planning in dynamic environments
- Human-robot Interaction
- Behavior modeling and learning
- Modeling and control of safety critical mobile robot
- Practical experiences and testbeds related with int. vehicles
- Industrial experiences and best practices relevant to safety and security of intelligent vehicles

WORKSHOP ORGANIZATION

- João Carlos Cunha, (jcunha@lsec.pt), Instituto Superior de Engenharia de Coimbra, Portugal
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IMPORTANT DATES

- Paper submission – **March 8, 2015**
- Author notification – **April 15, 2015**

PAPER SUBMISSION AND PUBLICATION

Submissions are accepted in IEEE two-column conference style in two formats:

- short papers (no more than 6 pages) and
- full papers (no more than 8 pages)

Authors of accepted full papers will have 30 minutes for presentation and discussion during the workshop, while authors of short papers will have 15 minutes. At least one author of an accepted paper must register at the workshop.

Workshop proceedings are to be published on **IEEE Xplore** in a Dependable Systems and Networks Workshops volume.

Templates and submission website:

- http://www.ieee.org/conferences_events/conferences/publishing/templates.html (US letter)
- <https://easychair.org/conferences/?conf=ssiv2015>

SPECIAL ISSUE

Selected papers from this workshop will be considered for a **Special Issue on Safety and Security of Intelligent Vehicles**, to appear in the **IEEE Intelligent Transportation Systems Magazine**. An open call will be issued, submissions will go through a separate peer review process.

PROGRAM COMMITTEE

- Bill Sanders, U Illinois at Urbana-Champaign, USA
- Christian Laugier, INRIA Grenoble Rhône-Alpes, France
- Denis Fernando Wolf, USP, Brazil
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