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European Safety and Reliability Conference

esrel2021.org

CALL FOR ABSTRACTS

Special session on
Autonomous system safety, risk, and security

Description

Papers submitted to this special session should discuss advancements on autonomous systems under the perspective of safety, risk, and reliability (SRS). Papers addressing the following topics either conceptually or through applications are welcomed:

- Risk and safety assessment methods
- Safety and security co-analysis
- Validation and verification
- Intelligent, risk aware systems
- Human Reliability and human on the loop
- Ethical design and operation
- Legal and regulatory aspects of safe operation

Motivation

Autonomous systems are emerging and are crucial for enabling new operations, such as autonomous land-based, maritime, and air transportation, mapping and monitoring of oceans and areas on land, and inspections of physical structures that are difficult to access. Autonomous technologies are intended to be a step towards safer and more efficient operations. However, the complexities concerning software and advanced control, human-software-hardware interaction, and emerging failures, pose formidable challenges to identification and removal of cause of functional failure, safety issues, and security concerns. Recent accidents have put emphasis on the need to discuss the safety aspect of these systems. The development of safe solutions for autonomous systems are, more than ever, crucial for their use. In particular, it is essential to:

- Recognize, understand and assess the risks involved with autonomous systems operations;
- Implement safe solutions in the design phase of these systems;
- Monitor, follow-up, and ensure that the risk level is acceptable during operation;
- Establish regulations and procedures that assure safe operations;
- Communicate safety to society in order to establish trust in autonomous systems.

Objective

The object of this special session is to map out challenges and propose solutions with respect to autonomous systems SRS. This special session shall contribute to recognizing cross-industrial and interdisciplinary synergies to address these challenges and develop such solutions.

Organizer

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The validation of the special sessions will be done under the responsibility of the technical and scientific committee. Organizers are invited to provide a list of reviewers that may be supplemented by TC members to ensure consistency in the evaluation process.