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European Safety and Reliability Conference

esrel2021.org

CALL FOR ABSTRACTS

*Special session on
Reliability, Availability and
Maintainability of Safety systems*

Description

Safety systems range from simple mechanical devices to instrumented technologies, with the purpose of achieving or maintaining a safe state of industrial facilities. This special session focuses on analysis of safety functions performed by such safety systems, and the need for appropriate reliability modelling. The calculation of reliability and availability performance measures of the safety systems requires use of international functional safety standards such as IEC 61508 and IEC 61511, but also of international reliability standards such as ISO/TR 12489. The session will provide method insights and industry examples.

Motivation

The reliability and availability calculation of the safety systems is a required activity for assessing the industrial risks and for managing them efficiently. Nowadays, this activity needs to deal with

emerging issues, including the digital transition (e.g. advanced functionalities, artificial intelligence, cybersecurity) and the ecological transition (e.g. new challenges, regulatory frameworks, innovative systems). Methods, tools, guidelines and standards need to reflect these subject matters and international standards (IEC and ISO) provide an important baseline for current application and possible future development for relevant stakeholders. The awareness of such standards is the purpose of this special session to show business applications and present innovative works that can contribute to meet reliability objectives and safety requirements for operation of current and future safety systems. The session will focus on oil & gas, electric power and renewables industries, but will also provide experience to other industries.

Objective

This special session addresses to authors of works that aim at providing contributions for the reliability and availability calculation of the safety systems, considering characteristics including:

- digital functionalities and/or artificial intelligence implemented for safety functions,*
- new challenges for safety systems arising from the ecological and/or energy transition,*
- policy and efficiency of preventive maintenance (including proof tests for detecting certain failures) and/or corrective maintenance,*
- human and organization factors addressed to the safety functions,*
- multiple safety systems working and/or interacting together,*
- balance between safety, cybersecurity, production and costs.*

Organizers

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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.