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CALL FOR ABSTRACTS

Special session on
Petri Nets in reliability, safety and maintenance

Description

This special session welcomes papers that address the application of different kinds of Petri net (stochastic, with predicates and assertions, coloured, high level…) for modelling, analyse and probabilistic assessment of systems reliability and safety and maintenance decision-making. Both recent developments on Petri nets (PN) and their applications will be considered.

Motivation

In system engineering, the analysis and probabilistic assessment of reliability, safety and maintenance policies are important issues due to the increasing complexity of current systems characterized by grow and large interactions between their components and with their environment. Moreover, the reinforcement of digital integration leads to more failure detection capabilities, and although digital components are more reliable than the analogue components they replace, some characteristics raise specific issues on the modelling and assessment of systems and further increase the complexity of their analysis and assessment. Petri nets have proven to be a powerful tool to take into account the behaviour of complex dynamic systems. Petri nets are able to develop flexible models for components and the whole system allowing a qualitative analysis (by means of analysing the model properties such as reachability of specific safety or dangerous states, liveness or blocking, …) or quantitative assessment (by means of exact resolution of stochastic processes underlying a PN model or by Monte-Carlo simulation).

Objective

The main aim of this special session is to promote and disseminate recent research works on Petri nets and their variants to meet challenges of both academia and industry.

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