

IN 2016 **Call for Papers** IET Cyber-Physical Systems: Theory & Applications

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Special Issue:

Safety-Critical Cyber Physical Systems

Cyber-Physical Systems (CPS) deal with the cyber control and physical processes as well as the interactions between them. In the domains of automobile and aerospace (A/A), many CPS are safety-critical systems, such as cruise control systems and flight control systems. Undiscovered software or hardware problems in the design may lead to severe safety issues. Late-phase fault detection and rework can risk significant lost in both time and money.

To address these issues, early-phase rigorous design, modeling and verification of CPS is promoted. At the same time, novel, trustworthy, yet efficient approaches to address various challenges of CPS, such as complexity, scalability, security, heterogeneity and interoperability, are desired in the A/A industrial context to meet the market requirements of time and cost. This special issue will present the state-of-the-art research results on the topics of safety-critical CPS in the A/A domains, particularly for the autonomous vehicles and Unmanned Aerial Vehicles.

The areas of interests include, but are not limited to, the following CPS-relevant topics:

- Model-based design approaches
- Software/Hardware codesign approaches
- Requirement formalization and validation approaches
- CPS safety and security
- Complexity and scalability
- Heterogeneity and interoperability

- Timing analysis and verification
- Architecture design and analysis
- Simulation, testing and formal verification
- Hybrid systems modeling and verification
- Synthesis of CPS

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