



DSD 2019

22nd Euromicro Conference on Digital System Design

Kallithea, Chalkidiki, Greece, Aug. 28th – Aug. 30th, 2019

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SPECIAL SESSION on “MIXED-CRITICALITY SYSTEM DESIGN, IMPLEMENTATION AND ANALYSIS (MCS DIA)”

SPECIAL SESSION SCOPE

The Euromicro Conference on Digital System Design (DSD) addresses all aspects of (embedded, pervasive and high-performance) digital and mixed HW/SW system engineering, covering the whole design trajectory from system specification down to micro-architectures, digital circuits and VLSI implementations.

Modern embedded appliances already integrate a multitude of functionalities with potentially different criticality levels into a single system and this trend is expected to grow in the near future. The integration of multiple functions with different criticality and certification assurance levels on a shared computing platform constitutes a mixed-criticality system (MCS). Mixed-criticality systems range from lowest assurance requirements up to the highest criticality levels. In many domains such as automotive, avionics and industrial control, the economic success depends on the ability to design, implement, qualify and certify advanced real-time embedded systems within bounded time, effort and costs. Without appropriate preconditions, the integration of mixed-criticality subsystems can lead to a significant and potentially unacceptable increase of engineering and certification costs.

Topics of interest include (but are not limited to):

- Predictable and composable multicore platform (including COTS and state-of-the-art MPSoC-GPU chips) resource management
- Mechanisms for temporal and spatial partitioning, including physical resource virtualization for temporal and spatial segregation and resources partitioning techniques at chip and cluster level to achieve composability in multiple dimensions (time, power, temperature)
- Solutions for communication resource partitioning and virtualization on- and off-chip
- Dynamic resource management for mixed-criticality systems
- Reliability and energy integrity of services for mixed-criticality systems, health monitoring
- Dependable operation of battery-driven/mobile mixed-criticality systems
- Requirements engineering and traceability for mixed-criticality systems
- Multi-physical component- and model-based design techniques
- Composable analysis of extra-functional properties (like timing, power, temperature, safety and security) & certification techniques
- (Incremental) verification of extra-functional properties
- Modular safety cases
- Modular Online Updates
- Design-space exploration for multi-physical mixed-criticality systems

SUBMISSION GUIDELINES

Authors are encouraged to submit their manuscripts via EasyChair web service at web page <https://easychair.org/conferences/?conf=dsd2019>. Should an unexpected web access problem be encountered, please contact the Program Chair by email (dsd2019@easychair.org, nkonofao@csd.auth.gr). Each manuscript should include the complete paper text, all illustrations, and references. The manuscript should conform to the IEEE format: single-spaced, double column, US letter page size, 10-point size Times Roman font, up to 8 pages. In order to conduct a blind review, no indication of the authors' names should appear in the manuscript, references included.

CPS, Conference Publishing Services, publishes the (ISI indexed) DSD Proceedings, available worldwide through the IEEE Xplore Digital Library. Extended versions of selected best papers will be published in a special issue of the ISI indexed “Microprocessors and Microsystems: Embedded Hardware Design” Elsevier journal.

IMPORTANT DATES

Deadline for paper submission: Date
Notification of acceptance: Date
Camera ready papers: Date

MORE INFORMATION (WEB PAGES)

- DSD 2019: <http://dsd-seaa2019.csd.auth.gr/>
- Euromicro: www.euromicro.org