

WMC 2022

9th International Workshop on Mixed-Criticality Systems

at the IEEE Real-Time Systems Symposium

Houston, Texas, USA, 5th December, 2022

<https://wmc2022.github.io/>



Important Dates:

Submission Deadline:
5 September 2022

Notification of Acceptance:
10 October 2022

Final Version of Papers Due:
24 October 2022

Workshop day:
5 December 2022

Program Chairs:

Zheng Dong
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(University of York, UK)

Steering Committee:

Iain Bate
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(North Carolina State University, USA)

Jing Li
(New Jersey Institute of Technology, USA)

Call for Papers

The purpose of WMC is to share new ideas, experiences and information about research and development of mixed criticality real-time systems.

Themes

The workshop aims to bring together researchers working in fields relating to real-time systems with a focus on the challenges brought about by the integration of mixed criticality applications onto single-core, multi-core and many-core architectures. These challenges are cross-cutting. To advance rapidly, closer interaction is needed between the sub-communities involved in real-time operating systems / run-time environments / hypervisor, real-time scheduling, security, safety and timing analysis. The workshop aims to promote understanding of the fundamental problems that affect Mixed Criticality Systems (MCS) at all levels in the software/hardware stack and crucially the interfaces between them. The workshop will promote lively interaction, cross fertilisation of ideas, synergies, and closer collaboration across the breadth of the real-time community, as well as attracting industrialists from the aerospace, automotive and other industries with a specific interest in MCS. Original unpublished papers on all aspects of mixed criticality real-time systems are welcome. Themes include, but are not limited to:

- Task and system models for MCS on singlecore, multi-core, and many-core platforms.
- Comparison between MCS models (Vestal, DAL / IMA, SIL / AUTOSAR, ...).
- Scheduling schemes and analyses for MCS, including the integration of appropriate models of overheads and delays.
- Operating systems, hypervisors, run-time environments and support for MCS, including data exchange and synchronisation across criticality levels, and issues relating to criticality mode.
- Analysis of worst-case execution times (WCET) relating to MCS.
- Mixed criticality communications mechanisms and analysis, including Network-on-Chip support.
- Safety and fault-tolerance mechanisms for real-time MCS systems.
- Probabilistic analysis techniques for MCS.
- Timing analysis and predictability of autonomous systems in a MCS context.

The scope of the workshop is real-time, mixed criticality systems. Papers that do not relate to real-time behaviour (i.e. are solely about security or safety aspects of MCS) will be considered as out of scope.

Paper Submission

Submissions must be in the same format as in the final proceedings (6 pages maximum, 2 columns, 10 pt, US Letter) compliant with the IEEE formatting guidelines. Papers exceeding the page limit will not be reviewed. The material must be unpublished and not under submission elsewhere. See the workshop website for further details about submissions.

By submitting a paper, the authors confirm that if the paper is accepted, at least one author will register for the WMC 2022 workshop by the special registration deadline set in the notification of acceptance, and present the paper at the workshop in person. Papers must be submitted electronically in a pdf format.

Proceedings

WMC will publish informal proceedings. The authors retain the copyright to their work and are free to submit extended versions to a conference or journal.