

IEEE International Conference on Event-based Control, Communications & Signal Processing

EBCCSP 2015
June 17-19, 2015
KRAKÓW

Call for Papers to Special Session SS01

Mixed-Criticality Systems

Special Session Organizers:

Roman Obermaisser, University of Siegen

roman.obermaisser@uni-siegen.de

Raimund Kirner, University of Hertfordshire

r.kirner@herts.ac.uk

Keynote Presentations

Panos Antsaklis

University of Notre Dame, USA

Karl Henrik Johansson

KTH Royal Institute of
Technology, Sweden

Yannis Tsividis

Columbia University, USA

Plenary Presentations

Tobi Delbrück

ETH Zurich, Switzerland

Maurice Heemels

Eindhoven University of
Technology, The Netherlands

Jan Lunze

Ruhr-University Bochum, Germany

Honorary Co-Chairs

Marek Florkowski

ABB Krakow, Poland

Tadeusz Pisarkiewicz

AGH Univ. of Science & Technology,
Poland

General Co-Chairs

Sebastian Dormido

UNED, Spain

Marek Miśkiewicz

AGH Univ. of Science & Technology,
Poland

Organizing Chair

Richard Zurawski

ISA Group, USA & AGH Univ. of Science
& Technology, Poland

Program Committee Co-Chairs

Ming Cao

University of Groningen
The Netherlands

Laurent Fesquet

Grenoble Institute of Technology, France

Workshops Co-Chairs

José Sánchez Moreno

UNED, Spain

Antonio Visioli

University of Brescia, Italy

Work-in-Progress Co-Chairs

Manuel Mazo

TU Delft, The Netherlands

Sebastian Trimpe

Max Planck Institute for Intelligent
Systems, Tübingen, Germany

Special Sessions Co-Chairs

Sylvain Durand Chamontin

ISM, Marseille, France

José Luis Guzmán Sánchez

Universidad de Almería, Spain

Aim and scope:

Modern electronic systems, such as ground-vehicles, aircraft, or space vehicles combine a multitude of distributed applications with varying safety and real-time requirements. Even in high-end consumer cars we already find high criticality control applications as well as low criticality audio/video applications. Another example would be a space vehicle, like a satellite, that for weight reasons aims at using the same physical wiring for control data and video data. A similar weight- and, therefore, cost-reduction argument holds true for novel avionics systems. In general, these systems are called mixed-criticality systems, and it is the traditional federated approach to realize private networks for individual applications to avoid interference between criticality levels. In order to use the on-board resources more efficiently, the trend throughout industrial areas is towards integrated architectures, for example Distributed Integrated Modular Avionics (DIMA) and the Automotive Open System Architecture (AUTOSAR).

Mixed-criticality architectures with support for modular certification make the integration of application subsystems with different safety assurance levels both technically and economically feasible. In particular, time-triggered networks for the segregation of these subsystems are essential to avoid fault propagation and unintended side-effects due to integration. Also, mixed-criticality architectures must deal with the heterogeneity of subsystems that differ not only in their criticality, but also in the underlying computational models and timing models (e.g., sporadic event-based control and periodic control functions). Non safety-critical subsystems often demand event-driven adaptability and support for dynamic system structures, while certification standards impose static configurations for safety-critical subsystems.

Topics within the scope of the Special Session:

The focus of the special session is on event-based and time-based system models, architectures, platforms and applications for systems with mixed-criticality requirements. Suggested topics of interest include (but are not restricted to) the following:

- Event-triggered and time-triggered architectures for mixed-criticality systems
- Communication networks with support for temporal and spatial partitioning
- Integration of heterogeneous mixed-criticality subsystems (e.g., coexistence of event-triggered and time-triggered activities)
- Event-based reconfiguration and resource management
- Validation, verification and certification aspects (e.g., modular certification)
- Applications and case studies (e.g., in avionic and automotive systems)

Submission of Papers: The working language of the conference is English. The special session papers are limited to 8 double column pages in a font no smaller than 10-points. Manuscripts must be submitted electronically in PDF format, according to the instructions contained in the Conference web site.

Further Information: EBCCSP 2015 Conference Secretariat: Tel: + 48 12 617 3034, Fax: + 48 12 633 2398; Email: ebccsp15@agh.edu.pl

Paper Acceptance: Each accepted paper must be presented at the conference by one of the authors. The final manuscript must be accompanied by a registration form and a registration fee payment proof. All conference attendees, including authors and session chairpersons, must pay the conference registration fee, and their travel expenses.

No-show Policy: The EBCCSP 2015 Organizing Committee reserves the right to exclude a paper from distribution after the conference at IEEE Xplore if the paper is not presented at the conference.

Author's Schedule:

Deadline for submission of special sessions papers:

February 15, 2015

Notification of acceptance of special sessions papers:

March 15, 2015

Final manuscripts due – special sessions:

May 1, 2015

<http://www.ebccsp2015.org>

Sponsors
(requested)

