

## Call for Papers

### SS06 - Applications of Time Sensitive Networking (TSN)

#### Organized and Co-Chaired by

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◆ **FOCUS.** This Special Session will investigate innovative applications of Time Sensitive Networking (TSN) technologies and standards. Emerging distributed computing, monitoring, data acquisition, and measurement systems are heavily reliant on wired and wireless real-time communications, allowing for seamless, standardized, and transparent device integration. In this context, Time Sensitive Networking provides a set of features capable of supporting a wide range of time-critical applications from the bottom of the automation pyramid all the way up to the edge and cloud computing. TSN can be seen as a toolbox that can be configured to enable accurate time synchronization and deterministic latency meeting time-critical requirements. TSN has applications across multiple markets segments and segment specific profiles have been (or are being) developed. For example, a TSN profile is being developed by the IEEE/IEC 60802 group for Industrial Automation and a profile for Audio Video Bridging systems has been developed by Avnu Alliance. Nevertheless, TSN capabilities are not limited to those application domains only. TSN capabilities to deliver time and timeless with high configurability can benefit a broader range of applications that, actually, need to be further investigated. For example, extended reality (XR), financial systems, safety-critical systems, sensors networks, and time-critical systems in industrial, robotics, avionics, aerospace, and automotive applications can benefit from the features of TSN-based Wired, Wireless, or hybrid communication networks, but they are also expected to bring new challenges. This special session will bring together case studies, prototypes, implementations, testing best practices, and innovative applications and challenges for TSN enabled by the latest wired/wireless communications and computing technologies.

#### ◆ TOPICS

- ◆ Industrial and enterprise applications
- ◆ Industrial automation case studies
- ◆ TSN for distributed measurement systems
- ◆ Automotive applications of TSN
- ◆ TSN and Extended Reality (augmented, virtual and mixed reality)
- ◆ TSN for avionics/aerospace applications
- ◆ TSN-based functional safety
- ◆ TSN-based robotics systems and applications
- ◆ TSN and hyperautomation
- ◆ TSN interoperability and performance testing methodologies

◆ **AIM.** The aim of the Special Session is to bring together researchers and practitioners from the industry and academia and provide them with a platform to report on recent advances and developments in the emerging area of the Time Sensitive Networking. In particular, the focus will be on the applications of TSN, pointing to analyze and present all those TSN mechanisms and research challenges required to support a broad range of time-mission-safety-critical applications.

◆ **CONFERENCE FORMAT.** The conference will comprise multi-track sessions for regular papers, to present significant and novel research results with a prospect for a tangible impact on the research area and potential implementations, as well as work-in-progress (WiP) and industry practice sessions.

#### ◆ AUTHOR'S SCHEDULE (2022)

##### ◆ Regular and special sessions papers

Submission deadline ..... April 1  
Acceptance notification ..... May 6  
Deadline for final manuscripts ..... June 17

##### ◆ Work-in-progress/Industry practice papers

Submission deadline ..... May 13  
Acceptance notification ..... June 10  
Deadline for final manuscripts ..... June 17