

TITLE OF TUTORIAL: Tutorial on Synchronization: a key function in Time-Sensitive Networking and beyond

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ABSTRACT:

Synchronization is crucial in many networking technologies, e.g., cellular networks, Time-Sensitive Networking (TSN) and in the communication networks of various industry segments, e.g., telecommunication, industrial automation, etc. This joint tutorial of the Workshop on Synchronization and Timing Systems (WSTS) and the IEEE 802.1 Working Group introduces the principles of synchronization, synchronization techniques, e.g., the Telecom and the TSN profiles of the IEEE 1588 Precision Time Protocol (PTP), and application areas such as industrial automation and automotive in-vehicle networks.

The joint tutorial includes the following topics:

- Introduction to principles and use cases (e.g., ITU-T G.8275, G.8271 series, G.8260, etc.)
- Clock technologies, modelling, and requirements (e.g., ITU-T G.8273 series, G.8262 series)
- IEEE 1588 PTP Telecom Profiles (ITU-T G.8275.1, G.8275.2)

- IEEE 802.1AS PTP profile for TSN
- IEC/IEEE 60802 TSN Profile for Industrial Automation
- P802.1DG TSN Profile for Automotive In-Vehicle Ethernet Communications

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MEETING NUMBER: 179 738 7002

MEETING PASSWORD: tutorial