

trainers



Eiko Seidel Nomor Research

Eiko Seidel is CTO at Nomor Research GmbH, a leading company in the research and development of future and emerging mobile communication systems, offering related consultancy and simulation services.

He has been working in mobile communication R&D for more than 20 years. Since 3GPP was founded in 1998, Eiko has been contributing actively to 3G and 4G standardisation. Besides numerous contributions to 3GPP, he published 20+ conference papers, submitted 100+ patent applications and contributed to various books. Eiko works as consultant, advisor, trainer and independent expert for different organisations.



Harald Ludwig Arico Technologies

Harald Ludwig is the founder and managing director of Arico Technologies, a company offering consultancy, training and project management services for the professional mobile radio industry.

He has more than 20 years of experience in the professional mobile radio industry and with mission- and safety-critical systems. His expertise covers the fields of system and application design, test and integration, tender specifications writing and bid evaluation, training, international standardisation, interoperability testing and command and control systems.

Harald is chairman of the TCCA Technical Forum.

who should attend

This course has been designed to provide fundamental supplier independent knowledge about the LTE technology and its specific features in Mission Critical Communications systems for e.g. Public Safety, Rail or Utilities. Users, network operators, regulators, business development managers, decision makers, project managers, systems & solution architects, engineers and other interested parties will benefit from this training course.

location

Brecherspitzstraße 8, D-81541 Munich, Germany

dates & time

15-17 September 2020

Tue 10:00-17:00, Wed 09:00-17:00, Thu 09:00-16:00

Other dates might be arranged based on demand.

This course is also available as an **on-site** course.

Please contact: training@nomor.de

bookings

Please request the registration form via e-mail to training@nomor.de

Booking deadline is 21 August 2020

further information

For more information regarding the course organisation or the course content please contact one of the trainers:

- Harald Ludwig
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- Eiko Seidel
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Training Course on

Mission Critical LTE

Including 5G Aspects

15-17 September 2020
Munich, Germany

course content

- Requirements & Markets
 - Mission Critical Requirements
 - Broadband Applications
 - 4G LTE / 5G NR Market Overview
 - Mission Critical & Public Safety Market
 - Other Vertical Markets
- Standardization & Organizations
 - 3GPP Standardisation
 - 3GPP Releases & Mission Critical Features
 - Organisations
- Frequency Bands & Available Spectrum
 - 4G LTE and 5G NR Spectrum
 - Public Safety Spectrum
 - Unlicensed Bands, Shared Spectrum
- Introduction to LTE / EPC Architecture & Interfaces
 - LTE/EPC Architecture Principles
 - Core Entities and Interworking
 - Quality of Service Architecture & Bearer Concept
 - LTE Transport Layer with S1/X2 Interfaces
- 4G LTE / 5G NR Radio Access
 - Radio Access Principles
 - Downlink & Uplink Physical Layers, Protocol
 - LTE-Advanced and LTE-A Pro Key Technologies
 - LTE/LTE-A/LTE-A Pro UE Capabilities
 - New Radio Access Key technology enhancements
- Mission Critical Enablers
 - IMS, VoLTE
 - Mission Critical Bearers
 - QoS, Priority & Pre-Emption
 - Access & Overload Control
 - Multicast, eMBMS
 - Device to Device Communication, Relay (ProSe)

course content (cont.)

- Mission Critical Features
 - Mission Critical CORE Features
 - MCPTT (Mission Critical Push To Talk)
 - MCVIDEO
 - MCDATA
 - Interconnection with other MC Systems
 - Interworking with non-3GPP Systems
- Security
 - Ciphering and Integrity Protection
 - Radio-, Transport-, Core Network Security
 - Mission Critical Applications Security
- Mission Critical Operations
 - Deployment Scenarios, Network Sharing, Multi-Operator and Dedicated Core Networks
 - Migration, Examples, Projects
 - Availability & Resilience
- Mission Critical Equipment
 - Ecosystem
 - Interoperability, Testing & Certification
 - Vendors & Products
- Citizens Emergency Communications
 - Emergency Calls, eCall
 - Advanced Mobile Location (AML)
 - Reverse 112 / Public Warning Systems
- 5G Core Network
 - 5G Core Network Architecture, Entities and Interfaces
 - Standalone & Non-Standalone Deployment
 - 5G Enablers: Network Slicing, 5G Sidelink, Satellite Access
- Summary of Mission Critical Functions

pre-requisites

A basic knowledge of radio and mobile network fundamentals is required to fully benefit from this course.

language

The course and the material are in English.

material

Each participant will get a copy of the training material for his/her personal use.

number of participants

The maximum number of participants is 12.

fee

The course fee is EUR 2290,- and includes a three-day training course with two trainers, training material, lunch and refreshments in the coffee breaks.

TCCA Members receive a 5% discount.

The fee is payable after receipt of the invoice. VAT is added if applicable.

Participants are responsible for their own travel and accommodation arrangements (we are happy to assist).

cancellation

A substitute for a registered participant can be nominated at any time. Cancellation of an accepted registration up to 4 weeks prior to the start of the course is possible and free of charge. Later cancellations will be charged the full course fee.

We reserve the right to cancel the course up to three weeks before the course begins in case of low number of participants or for another significant reason. Any claims for damages are excluded.