

about the course

The course was developed in 2014 and was the world's first training course dedicated on mission critical mobile broadband communications. The course content is constantly adapted to match the rapid developments in standardisation, product development and market adoption.

Participants came from the following countries:

Albania, Austria, Denmark, Finland, France, Germany, Hong Kong, Israel, Italy, North Macedonia, Norway, Poland, Portugal, Saudi Arabia, Singapore, Spain, Sweden, Switzerland, The Netherlands, Turkey, United Arab Emirates

trainer



Harald Ludwig

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 & conformance testing and command and control systems.

Harald is chairman of the TCCA Technical Forum, active in global mission critical broadband testing and certification initiatives and involved in international mission critical broadband reach projects.

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

Vienna, Austria (city center)

dates & time

23-25 February 2021

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

bookings

Please request the registration form from:

- e-mail: training@arico-tech.eu

Booking deadline is 22 January 2021

additional dates & on-site courses

Additional course dates will be arranged and announced based on demand.

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

further information

For more information please contact the trainer:

- e-mail: harald.ludwig@arico-tech.eu
- phone: +43 1 718 4567

Training Course on

Mission Critical LTE

Including 5G Aspects

23-25 February 2021
Vienna, Austria

course content

- Requirements & Markets
 - Mission Critical Requirements
 - Broadband Applications
 - 4G / 5G Market Overview
 - Mission Critical & Public Safety Market
 - Other Vertical Markets
- Standardization & Organizations
 - 3GPP Standardisation
 - 3GPP Releases & Mission Critical Features
 - Organisations in Critical Communications
- 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, Transport Layer
 - Quality of Service Architecture & Bearer Concept
- 4G LTE / 5G NR Radio Access
 - Radio Access Principles
 - Downlink & Uplink Physical Layers, Protocol
 - 5G New Radio Access Key Technologies
- Mission Critical Enablers & Related Services
 - IP Multimedia Subsystem (IMS)
 - Voice over LTE (VoLTE)
 - Mission Critical Bearers
 - QoS, Priority & Pre-Emption
 - Access & Overload Control
 - Multicast, eMBMS
 - Device to Device Communication, Relay (ProSe)
 - Isolated E-UTRAN Operation for Public Safety

course content (cont.)

- Mission Critical Features
 - Overview
 - Mission Critical CORE Features
 - MCPTT (Mission Critical Push To Talk)
 - MCVideo
 - MCDATA and its services
 - 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 to Broadband, Examples, Projects
- Mission Critical Equipment
 - Ecosystem
 - Interoperability, Testing & Certification
 - Vendors & Products Overview
- 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 1870,- and includes a three-day training course, 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 5 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.