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, market adoption and projects.

So far more than 700 participants have attended the training; they came from the following countries:

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

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 30 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 several international mission critical broadband research projects.

who should attend

This course has been designed to provide fundamental supplier independent knowledge about the LTE and 5G technology and its specific features in Mission Critical Communications systems which are used in Public Safety, Rail, Utilities and other critical infrastructure sectors. 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 centre)

dates & time

2-4 March 2027

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 29 January 2027

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

Mission Critical Broadband



2-4 March 2027
Vienna, Austria

www.arico-tech.eu

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 (PPDR) Spectrum
  - Unlicensed Frequency Bands
- Network Architecture & Interfaces
  - LTE EPC and 5G Core Architecture
  - Core Entities and Interfaces
  - Network Slicing
- Radio Access Basics
  - 4G LTE and 5G NR Radio Access Principles
  - Overview Downlink & Uplink Physical Layers
  - Enhancements for Mission Critical usage
  - Standalone & Non-Standalone Deployment
  - Non-Terrestrial Networks (NTN) Satellite Access
- Mission Critical Enablers & Related Services
  - IP Multimedia Subsystem (IMS)
  - Quality of Service, Bearer Concept, Priority & Pre-Emption (QPP)
  - Group Call Service Enabler (GCSE)
  - Multicast, eMBMS
  - Voice over LTE (VoLTE)

course content (cont.)

- Mission Critical Enablers & Related Services (cont,)
  - Device to Device Communication (ProSe)
  - Isolated Operation for Public Safety (IOPS)
  - Integrated Access Backhaul (IAB)
- Mission Critical Features
  - Overview
  - Mission Critical CORE Features
  - MCPTT (Mission Critical Push To Talk)
  - MCVideo
  - MCData and its Capability Functions
  - Interconnection with other MC Systems
  - Interworking with non-3GPP Systems
  - Dispatchers and Control Rooms
  - Future Rail Mobile Communications System
- Security
  - Ciphering and Integrity Protection
  - Radio-, Transport-, Core Network Security
  - Mission Critical Applications Security
- Mission Critical Operations
  - Deployment Scenarios
  - Migration to Broadband
  - Project Examples
- 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
- Summary of Mission Critical Broadband

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 number of participants is limited to 15.

fee

The course fee is EUR 2185 and includes the three-day training course, training material, lunches and refreshments during 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 five 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.