

Telecoms & Tech Academy

SCHOOL OF ADVANCED
COMMUNICATIONS
TECHNOLOGIES

COURSE DESCRIPTION **LTE FOR PUBLIC SAFETY NETWORKS**

Format:
Classroom , Online

Duration:
2 Days; 4 x 2 Hour
Session

**KNect365
Learning**
an **informa** business

COURSE SUMMARY

HIGHLIGHTS

- **Highly focused and in-depth training from the experts - including relevant updates from Ovum's extensive research team**
- **Trainers and programme directors that are experts, industry experienced, and highly accomplished training professionals**
- **Training outcomes and competency development designed to meet your specific requirements**



“The course was good and very helpful, the teacher was well up to the task!

GCL Econet

Book online

telecomstechacademy.com

Book over the phone

+44 (0)20 7017 4144

Book via email

training@telecomstechacademy.com

COURSE SUMMARY

Public Safety bodies around the world are looking to deploy networks using the LTE standard, to replace aging infrastructure based on TETRA, PMR, and P25. LTE has much to recommend it in this role, but “standard” LTE systems lack key functionality that is required to replace the legacy public safety networks.

Despite those limitations, governments globally, are evaluating whether LTE can meet their public safety requirements, while incumbent interests lobby from both sides of the debate. For example, the US government initially allocated \$7bn for its FirstNet project - an LTE network designed for first responders - and the UK's proposed Emergency Services Network is equally tied to the 4G telecommunications standard. With this world-wide interest, extended standardisation work has been undertaken to incorporate functionality that support requirements unique to public safety users.

This course covers the features that make LTE suitable for public safety use, enabling delegates to intelligently enter the debate and identify the right technology for every situation. This programme will provide a solid grounding in LTE and LTE network architectures before moving to a description of the functions included from LTE Release 12 which provide the necessary enhancements for Direct Mode operations and reliable Group Calling.

All network node functions and requirements will be explained and presented with examples of signalling and typical use scenarios.

OBJECTIVES

OUTCOMES & COMPETENCY DEVELOPMENT

Participants will develop or be able to:

- Explain the advantages of using LTE in public safety networks
 - Recommend deployment strategies for public safety networks
 - Make well-grounded and realistic judgements regarding the limitations of LTE technology, and how those might impact operational efficiency
- Identify the industry initiatives pushing LTE into public safety applications
 - Establish the political and commercial imperatives behind the push towards LTE
 - Evaluate the best technology for specific public safety applications
 - Identify the key players in the public safety industry, and how their agendas impact the technology debate
 - Make decisions on technology implementation and procurement that are commercially viable, minimise risk, and in line with the strategy and goals of the wider organization



COURSE CONTENTS

PUBLIC SAFETY NETWORKS

- Requirements for PS Networks
- Evolution of PS Networks
- Standards and Governmental Activities
 - USA and Europe
 - LTE as the base technology

INTRODUCTION AND OVERVIEW OF LTE

- Mobile communication evolution
- Drivers and Requirements for LTE Systems
- LTE Network Architecture
 - Radio Access
 - Radio Interface
 - Overview
 - eNB, X2
 - Packet Core
 - MME, SGW, PCRF, HSS, S1, S5, SGI
- Interworking for LTE
 - Legacy 2G/3G Interworking
 - WLAN Interworking
 - IMS and LTE
 - IMS Functional Entities
 - Session Controllers
 - Application Servers
- Service Management and Delivery
 - Delivering Services via LTE
 - QoS in LTE
 - The Role of the PCRF
 - Bearers and Bearer Management
- Voice over LTE (VoLTE)
 - VoLTE/VoIP Overview
 - VoLTE Architecture
 - VoLTE Services
- Multimedia Broadcast Multicast Service (MBMS)
 - Operational Elements
 - MBMS in the Radio Channel
 - MBMS Enhancements
- Spectrum Allocations for Public Safety
 - USA, Europe, EMEA

GROUP COMMUNICATIONS OVER LTE

- Group Communication Principles
- Group Communication Service Enablers (GCSE)
- GCSE Architectural Requirements
- GCSE Principal Functions and Interfaces
 - GCS AS, UE, PCRF, BM-SC, MB2
- GCSE Services
 - Unicast Delivery
 - MBMS Delivery
 - Service Continuity
 - Priority and Pre-emption
- GCSE Signalling
 - Pre-Service Establishment
 - Dynamic Establishment
 - Delivery Modification
 - Delivery Deactivation
- Access Control
- Mission Critical PTT (MCPTT)
 - Service Overview
 - Call Types
 - Priorities
 - Interworking with Legacy

PROXIMITY SERVICES (PROSE)

- ProSE Concepts
 - ProSE Services
 - ProSE Architecture
 - ProSE Functions, DPF, DDNMF, E-DPF
 - ProSE Application Server
 - UE Functions for ProSE
- ProSE Operation
 - ProSE Identities
 - ProSE Direct Discovery
 - ProSE Direct Communications
 - EPC-Level ProSE Discovery
- ProSE for Public Safety
 - Typical Use Cases
 - Relay Functions
 - Expected Performance

OUR TRAINING SERVICES

TELECOMS & TECH ACADEMY STRUCTURE

Our training programmes are delivered worldwide as part of the training and development plans of many operators, vendors, and service providers. The programmes cover a wide range of competency development requirements. To ensure we meet the training needs of the industry as effectively as possible, we operate three schools:

School of Telecoms Tech Business

Business training tailored to the telecoms industry, ranging from the intensive 5-day Telecoms Mini MBA to specialist leadership and marketing training.

School of Advanced Communication Technologies

Covering a multitude of technologies, these courses range from overviews aimed at nontechnical staff to in-depth engineering training.

Distance Learning

Our comprehensive suite of Distance Learning programmes provide an excellent opportunity to expand knowledge and build confidence.

OUR TRAINERS

We only use trainers and programme directors that satisfy the following three criteria:

- Experts in their field
- High level of Industry Experience
- Expert facilitators and training professionals

All our trainers undergo a rigorous selection process and are subject to continuous evaluation. Each trainer is accredited for specific courses or topic areas. Whether engineers or business experts, they are required to continue developing within their specialist areas, and to broaden their Industry view of trends, best practice and technology.

This is achieved by our on-going work with many tier 1 operators and vendors, and by full exposure to Ovum research and KNet 365 TMT worldwide events.

UNIVERSITY ACCREDITATION

Some of our programmes have been accredited by the University of Derby Corporate; a UK-based university highly acclaimed in the area of employer engagement. They are at the forefront of the drive to integrate highly focused industry-led training with the academic rigor and quality control of university-based education. Our comprehensive Advanced Telecoms Management Series have been accredited Post-

Graduate Level, with our extensive suite of Distance Learning at Undergraduate Level)

We would be happy to discuss extending accreditation to tailored ATMS or programmes based on our Distance Learning modules. Although accreditation is specific to these programmes, the work we do with the University of Derby enable us to develop and apply best practice across our portfolio.

CUSTOMISED IN-HOUSE TRAINING

Telecoms & Tech Academy has worked with countless companies to deliver customised training programmes. We take time to understand your requirements, you'll work with our specialist training team to ensure that we deliver your perfect training programme for your business.

A customised training programme from Telecoms & Tech Academy ensures you get a course that precisely matches your organisation's needs, presented by a first-rate training organisation, with access to all the latest industry research and analysis.

WHY CHOOSE IN-HOUSE TRAINING FROM TELECOMS & TECH ACADEMY?

- Content can be customised to focus on the issues you want – work with us to develop the training course to match the exact needs.
- Unique industry research – from Ovum's team of industry leading analysts
- Expert trainers – our team of versatile trainers have the knowledge and experience to deliver a highly effective learning experience
- The most efficient way to train your staff – at the time and location to minimise disruption
- Flexible delivery options – with a range of instructor led, distance learning and virtual classroom formats available you can build a blended solution to maximise training effectiveness over the long term
- Pre and post course assessment – can be included in programmes to measure competencies and check on the required progress.

Contact us to discuss how we can build your perfect programme.



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