# **Essential 5G**

A 2 day training course



# **Description**

This course provides a comprehensive foundation in all the essential technologies involved, this would include the integration of soft-defined networking and virtual network functionality to support the network elements needed for 5G core support.

We will also describe multi-edge computing as a solution to latency and new use-cases such as vehicle to everything (V2X) and Industrial IoT.

Finally we will investigate the new numerologies available in the air interface and how WiFi and Optical networks] are accommodated into the 5G core.



# **Key outcomes**

By the end of the course delegates will be able to:

- Describe 5G standardisation
- Explain basic 5G concepts
- Describe various use case studies
- Explain E2E slicing
- Explain the concept of SDN and NFV in slicing
- Describe mobility management in HetNet environments
- Describe the 5G RAN Architecture
- Describe the 5G core network architecture



## Training approach

This structured course uses Instructor Led Training to provide the best possible learning experience. Small class sizes ensure students benefit from our engaging and interactive style of teaching with delegates encouraged to ask questions throughout the course. Quizzes follow each major section allowing checking of learning.



### **Details**

## Who will benefit?

Those working with mobile communications

#### **Prerequisites**

Mobile communications demystified

**Duration:** 2 days

**Customer rating:** 



# **Generic training**



Generic training complements product specific courses covering the complete picture of all relevant devices including the protocols "on the wire".

"Friendly environment with expert teaching that teaches the why before the how."

G.C. Fasthosts

#### **Small class sizes**



We limit our maximum class size to 8 delegates; often we have less than this. This ensures optimal the theory. interactivity between delegates and instructor.

"Excellent course. The small class size was a great benefit..."

M.B. IBM

# **Hands On training**



The majority of our courses use hands on sessions to reinforce

"Not many courses have practice added to it. Normally just the theoretical stuff is covered."

J.W. Vodafone

#### Our courseware



We write our own courses; courseware does not just consist of slides and our slides are specific requirements. diagrams not bullet point Have the course your text.

"Comprehensive materials that made the course easy to follow and will be used as a reference point."

V.B. Rockwell Collins

#### **Customise your course**



Please contact us if you would like a course to be customised to meet your way.

"I was very impressed by the combination of practical and theory. Very informative. Friendly approachable environment, lots of hands on."

S.R. Qinetiq

# **Essential 5G**

#### **Course content**

#### **Standardisation**

Key Standard Development Organisations and their standardisation processes, 3GPP, IEEE-SA, ITU-T, ITU-R, IETF, 5G standardisation.

#### **5G Concepts**

5G objectives and usage scenarios, 5G activities, fundamental concepts, key advantages, key challenges, vehicular communications, from V2V to V2X, IoT use cases, URLLC use cases, eMBB high speed data deployment, network slicing, E2E slicing.

# **Network Architecture, Mobility Management and Deployment**

LTE and 4G (LTE Advanced) network architecture, 5G architecture, AMF, SMF, AUSF, UDM, NRF, NEF, NSSF, PCF, AF, mobility management, EPS mobility management, futuristic mobility management, network deployment, implementation, optimisation, network management

#### 4G/5G Radio Access Network

LTE-Advanced, carrier aggregation, antenna diversity, relaying, SON enhancements, eMBMS, latency improvement, carrier aggregation enhancements, licensed assisted access using LTE, MIMO enhancements, 5G NR, 5G NR numerologies, 5G RAN architecture, overview of CRAN, VRAN and OpenRAN.

# What our customers say

"Absolutely brilliant, very knowledgeable and helpful trainer would recommend to teach anyone. Kept me interested 100% of the time which is very impressive as this does not happen often, if at all!"

O. B. Network Rail

"The best technical course I've been on!."

L. W. Fujitsu Telecoms Europe

"Very well thought out and structured course. Would recommend 100%. Lots of equipment, good quality."

A.R. Unipart

"Course content is interesting. Relevant to current systems and presented well."

S.S-T. Arqiva

