Course : 5G: Open RAN (Open Radio Access Network)

Synthesis course - 2d - 14h00 - Ref. GSD
Price : 2020 CHF E.T.

NEW

Alongside the 5G standardization work being carried out by 3GPP, a major transformation of the 5G radio access architecture (RAN) is being led by the O-RAN Alliance through the O-RAN (Open Radio Access Network) initiative, which aims to make this dimension more flexible by bringing in virtualization, clouding and artificial intelligence techniques.

Teaching objectives

At the end of the training, the participant will be able to:

- Understand the principles and challenges of O-RAN architecture
- Learn more about 5G Open RAN services
- Understanding 5G radio access architecture (RAN)

Intended audience

IT and network engineers, mobile network managers and design managers.

Prerequisites

Good knowledge of networks, IT or telecoms.

Course schedule

1 Introduction

- Evolution of mobile networks from 2G to 5G: architecture, protocols, services and security.

2 Focus 5G RAN

- RAN architecture: from 2G to 4G.
- 5G RAN: architecture, equipment, interfaces and protocols.
- Split gNB (CU/DU, CU-CP/CU-UP) and associated protocols (F1/E1).
- Impact of the split on radio procedures.

PARTICIPANTS

IT and network engineers, mobile network managers and design managers.

PREREQUISITES

Good knowledge of networks, IT or telecoms.

TRAINER QUALIFICATIONS

The experts leading the training are specialists in the covered subjects. They have been approved by our instructional teams for both their professional knowledge and their teaching ability, for each course they teach. They have at least five to ten years of experience in their field and hold (or have held) decision-making positions in companies.

ASSESSMENT TERMS

The trainer evaluates each participant's academic progress throughout the training using multiple choice, scenarios, hands-on work and more.
Participants also complete a placement test before and after the course to measure the skills they've developed.

3 Genesis and standardization

- Origins and objectives of Open RAN.
- Terminology: O-RAN, Open RAN, v-RAN, c-RAN.
- Standardization players and consortia.
- Link between O-RAN and 3GPP.

4 Technical aspects

- gNB split: O-RAN and 3GPP comparison.
- Transition from CPRI to eCPRI.
- O-RAN architecture: cloud, RIC, SMO and main interfaces.
- rApps and xApps in RAN management.
- Deployment options and security.
- Use of AI and machine learning in O-RAN.

5 Intelligent O-RAN functions

- Optimization of traffic and radio resources.
- Beams and mobility management.
- Introduction of slicing at RAN level.
- Energy management and QoS/QoE improvement.
- Supervision, alarms and enhanced security.

6 Trends and prospects

- Recent innovations and market trends.
- Planned developments in O-RAN architectures.

TEACHING AIDS AND TECHNICAL RESOURCES

• The main teaching aids and instructional methods used in the training are audiovisual aids, documentation and course material, hands-on application exercises and corrected exercises for practical training courses, case studies and coverage of real cases for training seminars.
• At the end of each course or seminar, ORSYS provides participants with a course evaluation questionnaire that is analysed by our instructional teams.
• A check-in sheet for each half-day of attendance is provided at the end of the training, along with a course completion certificate if the trainee attended the entire session.

TERMS AND DEADLINES

Registration must be completed 24 hours before the start of the training.

ACCESSIBILITY FOR PEOPLE WITH DISABILITIES

Do you need special accessibility accommodations? Contact Mrs. Fosse, Disability Manager, at psh-accueil@orsys.fr to review your request and its feasibility.

Dates and locations

REMOTE CLASS
2026 : 16 Mar., 29 June, 7 Sep., 30 Nov.