

Deploying Open RAN for 5G

Course Description

The Open RAN deployment model adopts a new approach for building the Radio Access Network, within 5G but also earlier generations of technology. This course seeks to explore the concepts of Open RAN, outlining key terminology and standardization efforts. In addition, the course will provide focus on the architecture of an Open RAN deployment, examining the CU/DU/RU split, the associated protocols and the role of the O-RAN Alliance RAN Intelligent Controllers.

This course has no prerequisites.



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This course will contain the following sections:

1. Deploying Open RAN for 5G

Topic areas covered include:

- Open RAN Key Concepts:
 - Open RAN Design Goals.
 - Open RAN Terminology and Standards.
 - Potential Drawbacks of Open RAN.
- Understanding the RAN Ecosystem:
 - Controller Centric RAN Deployments.
 - C-RAN and 4G.
 - C-RAN and 5G.
- Open RAN Architecture 3GPP Split 2:
 - Protocol Disaggregation Summary.
 - Split 2 Protocols and Interface.
 - F1 Reference Point.
- Open RAN Architecture O-RAN Split 7-2x:
 - 5G Physical Layer Processing.
 - Split 7-2x Detail.
 - Transport Protocols for Split 7-2x.
 - eCPRI.
 - RoE (IEEE 1914.3).
- O-RAN Alliance Architecture:
 - High Level Functional O-RAN Architecture.
 - Service Management and Orchestration.
 - SMO O1 Interface.
 - SMO O2 Interface.
- O-RAN Alliance RAN Intelligent Controllers:
 - Non Real Time RIC.
 - Non-RT RIC rApp Example.
 - Near Real Time RIC.





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