# VRAN and Open RAN Overview

**TPR1047d | On-Demand | 5G Access | Expanded**
**Course Duration:** 4 hours

The virtualized RAN and Open RAN initiative of O-RAN Alliance are introduced into the 5G RAN to support 5G uses cases of mobile broadband, edge computing, and IoT. This training presents an overview of 5G RAN and gNB Split architecture, concepts of virtualization in RAN, role of RU, gNB-DU and gNB-CU and their connectivity of CPRI, eCPRI and Ethernet.

## Intended Audience

This course is intended for planning, engineering, operations, and systems performance teams.

## Objectives

After completing this course, the student will be able to:

- Sketch the network architecture of 5G RAN and understand the placement of RAN components
- Draw the connectivity of RAN components and identify the role of CPRI and Ethernet
- Highlight the benefits of virtualization in RAN and potential use cases of virtualization
- Sketch O-RAN architecture for 5G RAN and define role of Split Option 7-2x
- Define RAN slicing and step through RAN slicing deployment using O-RAN

## Course Prerequisites

Welcome to 5G

## Outline

1. 5G RAN Architecture and Transport
1.1 5G RAN evolution
1.2 5G RAN (gNB) architecture
1.3 Transport connectivity in 5G RAN
Exercise: 5G RAN evolution
Exercise: Knowledge check

2. Virtualization in 5G RAN
2.1 Benefits of Virtualizing RAN
2.2 Examples of V-RAN
Exercise: Virtualization in 5G RAN
Exercise: Knowledge check

3. Open RAN and O-RAN
3.1 What is Open RAN and O-RAN?
3.2 O-RAN architecture for 5G
3.3 O-RAN Open Fronthaul Split Option 7-2x
Exercise: O-RAN network
Exercise: Knowledge check

4. RAN Slicing and O-RAN
4.1 RAN slicing in 5G RAN
4.2 RAN slicing using O-RAN
Exercise: Knowledge check

Putting it all together
Assessment