

# Cloud RAN Overview

eLearning (H5v) | Average Duration: 1 Hour | Course Number: NWV\_111



Wireless, Wireline and Cable service providers are on the cusp of a multitude of network and business transformation choices. A good conceptual understanding of the new networking and Wireless, Wireline and Cable service provider business paradigms is essential for professionals in the communication industry. This course provides a high level view of the impact and benefits of Cloud RAN, the vision and opportunities created by future provider networks, as well as a number of technology challenges that need to be solved to make Cloud RAN a reality.

## Intended Audience

The course is intended for all that are interested in understanding what Cloud RAN is and how it will transform the Wireless, Wireline and Cable service provider networks over the next few years.

## Learning Objectives

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

- Describe the concept of Cloud RAN
- Illustrate the Cloud RAN architecture and key protocols
- Describe the operational benefits of Cloud RAN

## Course Outline

### 1. Current RAN Architecture

- 1.1. RAN architecture
  - 1.1.1. Macro cells
  - 1.1.2. Small cells
- 1.2. RAN connectivity

### 2. Challenges of Today

- 2.1. RAN equipment requirements
- 2.2. RAN power requirements

### 3. Why Cloud RAN?

- 3.1. Problems Cloud RAN solves

### 4. Cloud RAN Architecture

- 4.1. Remote radio head
- 4.2. Baseband unit
- 4.3. Fronthaul

### 5. Benefits and Challenges

- 5.1. OpEx/CapEx
- 5.2. Operational
- 5.3. Radio
- 5.4. Mobility

### 6. Baseband Unit Virtualization

- 6.1. Virtualization of BBU overview
- 6.2. Virtualized BBU-Pool
- 6.3. Advantages of Virtualizing BBU

### 7. Connectivity Topologies

- 7.1. Fronthaul technologies
- 7.2. Fronthaul protocols

### 8. Cloud RAN and Virtualization

- 8.1. C-RAN interworking with NFV
- 8.2. C-RAN interworking with SDN

### 9. End of Course Assessment