

# Technology Primer: C-RAN

Instructor Led Live Virtual Class | Duration: 0.5 Day | Course Number: TPR1002

## Technology Primers

Centralized RAN, or C-RAN, is poised to completely transform the way Radio Access Networks are traditionally designed. C-RAN reduces OpEx, CapEx, and energy consumption while boosting overall capacity, coverage and spectral efficiency. The session starts with an introduction to C-RAN and how it solves the challenges faced by traditional RANs. The course describes the Common Packet Radio Interface (CPRI) technology and highlights its role in C-RAN operation. The session closes with a discussion of how C-RAN facilitates implementation of LTE and LTE-Advanced features such as ICIC, CoMP, and Carrier Aggregation.

### Intended Audience

A high-level technical overview to personnel involved in product management, marketing, planning, design, engineering, and operations.

### Learning Objectives

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

- Compare and contrast C-RAN with traditional RAN architectures
- Identify the expected benefits of C-RAN and describe the potential challenges associated with deploying C-RAN
- Discuss the use of CPRI within the context of C-RAN
- Describe how LTE-Advanced features can leverage C-RAN

### Suggested Prerequisites

- [LTE\_102] LTE Overview (eLearning)
- [LTE\_127] Exploring LTE: Architecture and Interfaces (eLearning)

### Course Outline

#### 1. Why C-RAN?

- 1.1. Wireless growth
- 1.2. Impact on the RAN

#### 2. C-RAN Architecture

- 2.1. The Four Cs of C-RAN
- 2.2. Benefits and challenges

#### 3. CPRI Requirements

- 3.1. CPRI overview
- 3.2. CPRI and C-RAN
- 3.3. Bandwidth and distance requirements

#### 4. C-RAN and LTE-Advanced

- 4.1. Inter Cell Interference Coordination (ICIC)
- 4.2. Co-ordinated Multi-Point (CoMP)
- 4.3. Carrier Aggregation (CA)