



# Welcome to O-RAN Part 4: RIC and Apps

**5G\_113d | On-Demand | 5G Access | Express**

**Course Duration:** 1 hour

This course provides a technology introduction to RAN Intelligence Controller (RIC) Apps and external enrichment in O-RAN operations. You will learn the role of xApps and rApps in O-RAN and the benefits and use of external enrichment data in O-RAN operations. You will also explore how O-RAN can use AI/ML to improve the performance of the RAN.

## Intended Audience

This course is designed for a broad audience of personnel working in the wireless industry.

## Objectives

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

- Describe the benefits and role of apps in O-RAN operations in Non-RT RIC and Near-RT RIC
- List role and operations of rApps and xApps in O-RAN management
- Explain RIC operations for O-RAN performance improvement
- Describe O-RAN operational use cases

## Course Prerequisites

No Prerequisites

## Outline

1. RIC and Apps in Open RAN
    - 1.1 Distribution of Intelligence and Control in O-RAN
    - 1.2 Benefits of Distributing Intelligence in the RAN
  2. RIC Architecture and Interfaces
    - 2.1 Functionality of RICs and Apps
    - 2.2 Non-Real-Time RIC and the R1 Interface
    - 2.3 Near-Real-Time RIC Architecture
    - 2.4 The A1, E2, O1, and O2 Interfaces
  3. Open RAN Control Loops
    - 3.1 Open RAN Control Loops
    - 3.2 Power Savings: Open Loop and Closed Loop Examples
    - 3.3 DDoS Prevention using the E2 Interface
  4. RIC and App Operations
    - 4.1 Implementing a Policy In Open RAN
    - 4.2 AI/ML in Open RAN
    - 4.3 Sample Apps: Network Slicing in Open RAN
    - 4.4 O-RAN Alliance Use Cases
- Final Assessment