

# Getting Started

## Near Realtime RIC Installation

The goal of this tutorial is to install and run the Near Realtime RIC

## Hello World xApp Use Case Flows

This is a step by step tutorial to on-board, deploy and run a Hello World xApp in a Near Realtime RAN Intelligent Controller (RIC) instance.

## Non-Realtime RIC

For more information on the Non-Realtime RIC please see the [NONRTRIC Project wiki](#)

## SMO Installation

The goal of this tutorial is to install and run the Service Management Orchestrator

## Running A1 and O1 Use Case Flows (outdated)

**Outdated** The goal of this tutorial is to run the A1 and O1 interface

## O-RAN Alliance Components Definition

For the purposes of the present document, the terms and definitions given in 3GPP TR 21.905 [1] and the following apply. A term defined in the present document takes precedence over the definition of the same term, if any, in 3GPP TR 21.905 [1].

**near-RT RIC:** O-RAN near-real-time RAN Intelligent Controller: a logical function that enables near-real-time control and optimization of O-RAN elements and resources via fine-grained data collection and actions over E2 interface.

**Non-RT RIC:** O-RAN non-real-time RAN Intelligent Controller: a logical function that enables non-real-time control and optimization of RAN elements and resources, AI/ML workflow including model training and updates, and policy-based guidance of applications/features in near-RT RIC.

**NMS:** A Network Management System

**O-CU:** O-RAN Central Unit: a logical node hosting RRC, SDAP and PDCP protocols

**O-CU-CP:** O-RAN Central Unit – Control Plane: a logical node hosting the RRC and the control plane part of the PDCP protocol

**O-CU-UP:** O-RAN Central Unit – User Plane: a logical node hosting the user plane part of the PDCP protocol and the SDAP protocol

**O-DU:** O-RAN Distributed Unit: a logical node hosting RLC/MAC/High-PHY layers based on a lower layer functional split.

**O-RU:** O-RAN Radio Unit: a logical node hosting Low-PHY layer and RF processing based on a lower layer functional split. This is similar to 3GPP's "TRP" or "RRH" but more specific in including the Low-PHY layer (FFT/iFFT, PRACH extraction).

**O1:** Interface between management entities in Service Management and Orchestration Framework and O-RAN managed elements, for operation and management, by which FCAPS management, Software management, File management shall be achieved.

**O1\*:** Interface between Service Management and Orchestration Framework and Infrastructure Management Framework supporting O-RAN virtual network functions.

**xAPP:** Independent software plug-in to the Near-RT RIC platform to provide functional extensibility to the RAN by third parties.

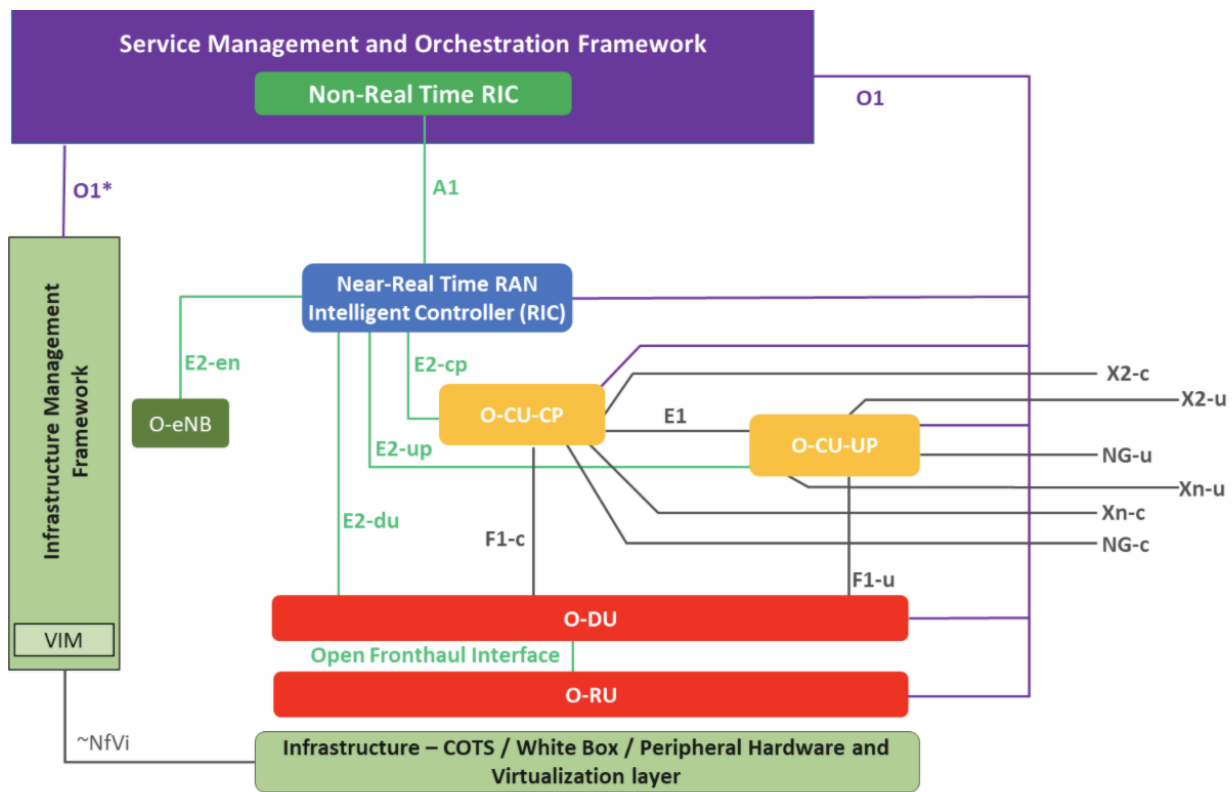


Figure 2: O-RAN architecture overview

In the O-RAN architecture, the radio side includes Near-RT RIC, O-CU-CP, O-CU-UP, O-DU, and O-RU. The management side includes Service Management and Orchestration Framework that contains a Non-RT-RIC function.