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# OpenRAN 101 Series

*OpenRAN: Why, What, How, When*



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The main thing with Open RAN is that the interface between the BBU and RRU / RRH is an open interface, so, any any open RRU / RRH. With Open RAN and the "virtualization" it brings, operators should be able to run software-based network functions on standard servers. More open interfaces enable them to use one supplier's radios with another's processors -- something not currently possible with traditional solutions.

The OpenRAN vision is that the RAN is open within all aspects, with the interfaces and operating software separating the RAN control plane from the user plane, building a modular base station software stack that operates on commercial-off-the-shelf (COTS) hardware, with open north- and south-

ite meaning that baseband units, radio units and remote radio heads can be assembled from any vendor and managed by Open RAN software to form a truly interoperable and open network. This way, the underlying hardware layer (radios and servers) stay on site; the only thing that gets replaced is the software as shown in the graphic below.

Example Scenario: OpenRAN Deployment Model

Source: Parallel Wireless

*The main takeaway here is that a mobile operator can virtualize and disaggregate their RAN, but unless the interfaces between the components are open, the RAN is not truly open.*

## How

means. Right now, here are some basics. 3GPP considered the split concept (DU and CU) from the beginning for 5G. In a 5G cloud RAN architecture, the BBU functionality is split into two functional units: a distributed unit (DU), responsible for real time L1 and L2 scheduling functions, and a centralized unit (CU) responsible for non-real time, higher L2 and L3. In a centralized 5G cloud RAN, the DU physical layer and software layer are hosted in an Edge cloud datacenter or central office, and the CU physical layer and software can be collocated with the DU or hosted in a regional cloud data center. While CUs will maintain BBU-like functionalities, DUs will be more than RRH in terms of processing capacities. And this is where the Open

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to next-generation mobile network infrastructure and as a result of vendor interoperability, it offers:

1. Ability to use non-ideal fronthaul (i.e. Ethernet), overcoming the traditional constraints of CPRI over fiber: Legacy RAN platforms have been based on proprietary hardware and rely on long and costly life cycles in development, deployment, and operation. This created vendor lock-in and the inability to keep pace with technology and demographic changes. With each generation of radio interface change, these radios are typically replaced with newer versions at a significant investment and inconvenience to mobile operators, as they must crew to each site to rip and replace.
2. Ability to select

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