

Open-RAN

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In News: TRAI Chairman P.D. Vaghela while speaking at the 15th India Digital Summit stated that the use of Open-RAN and software-defined telecom networks will provide Indian entities with ample opportunities to go in for the network equipment market.

What is Open-RAN?

- The Open-RAN (Radio Access Network) is a new paradigm where cellular radio networks consist of hardware as well as software components from a variety of vendors which are operating over network interfaces that are truly 'Open and Interoperable'.
- It is an ongoing shift in the mobile network architecture, consisting of networks to be built using subcomponents from multiple vendors. In this, with the help of software, hardware manufactured by different companies works together.
- Open-RAN means opening the protocols and interfaces between various subcomponents in the RAN such as radio, hardware and software.

Functioning of Open-RAN:

- Open-RAN is the interface between the Radio Unit, Distributed Unit and the Centralized Unit.
- By opening and standardizing these interfaces, the networks can be deployed with a more modular design with multiple vendors.

Radio Access Network (RAN):

- It connects individual devices via radio connections to other parts of a network.
- The elements of RAN:

- Radio Unit: In this, radio frequency signals are transmitted, received, amplified and digitized. It is located near or is integrated into the antenna.
- Distributed Unit: In this, real-time, baseband processing functions reside. It is located near the cell site.
- Centralized Unit: In this, less time-sensitive packet processing functions reside.

About 0-RAN ALLIANCE

- 0-RAN ALLIANCE was founded in February 2018 by AT&T, China Mobile, Deutsche Telekom, NTT DOCOMO and Orange.
- It was established as a German entity in August 2018.
- Since then, 0-RAN ALLIANCE has become a world-wide community of mobile network operators, vendors, and research & academic institutions operating in the Radio Access Network (RAN) industry.
- 0-RAN ALLIANCE's mission is to re-shape the RAN industry towards more intelligent, open, virtualized and fully interoperable mobile networks.
- The new 0-RAN standards will enable a more competitive and vibrant RAN supplier ecosystem with faster innovation to improve user experience.
- 0-RAN based mobile networks will at the same time improve the efficiency of RAN deployments as well as operations by the mobile operators.

To achieve this, 0-RAN ALLIANCE is active in 3 main streams:

1. The specification effort => new standards for open and intelligent RAN
2. 0-RAN Software Community => open software development for the RAN (in cooperation with the Linux Foundation)
3. Testing and integration effort => supporting 0-RAN member companies in testing and integration of their 0-RAN implementations

0-RAN focuses on technical aspects of the RAN and stays neutral in any political, governmental or other areas of any country or region. 0-RAN does not get involved in any policy-related topics.