EDUCATIONAL INSIGHT:

OPEN RAN / 5G ORAN

dense air

What is ORAN?

ORAN is an Open Radio Access Network.

- Traditionally, RAN architectures were closed and proprietary, with integrated hardware and software coming from a single vendor.

- In contrast, ORAN provides the framework to ensure that interoperability between hardware, software, and their connecting interfaces adhere to open standards. This allows them to seamlessly communicate and function together, regardless of who the vendor may be. This strategy simplifies and reduces the costs associated with updating or expanding a radio network. It also opens up new possibilities for innovation by making it easier to add new features or improve the network without being tied to a single supplier. The faster innovation will result in providing better end user experiences.

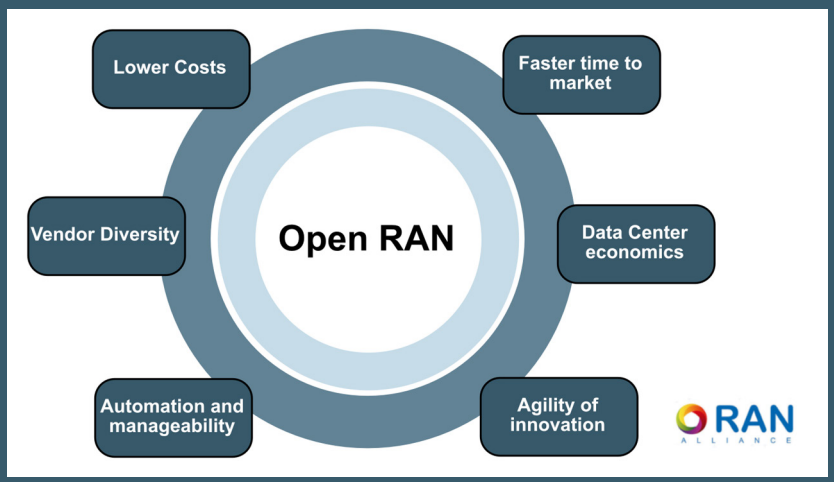
In a nutshell, an ORAN architecture allows far more flexibility and interoperability than was possible in the past when designing and deploying a radio network.

The Concept behind ORAN

The ORAN Alliance is a world-wide community of mobile operators, vendors, and research & academic institutions that was set up in 2018 by a group of leading mobile operators with the aim of creating the framework and industry-wide standards needed to allow the creation of more flexible and open network architectures.

Benefits of ORAN

- Reduced costs: By increasing competition and diversifying supply, ORAN can lower costs of developing and expanding radio networks.
- Improved efficiency: ORAN can improve network management and service quality.
- Increased innovation: ORAN can make it easier to add new features or improve the network without being tied to a single supplier. This can result in faster innovation and a better experience for end users.

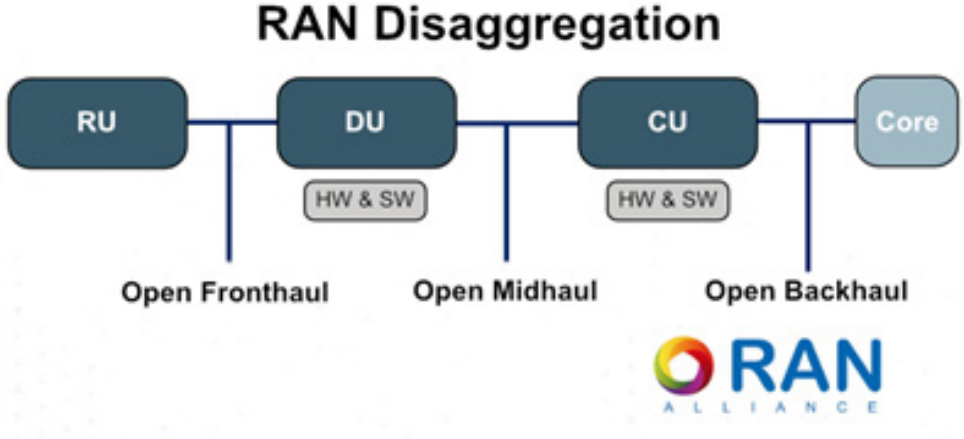


HOW ORAN WORKS

ORAN allows customers to avoid any specific vendor lock-in, enabling them to select best-of-breed components from a variety of suppliers, which helps foster a more competitive and innovative ecosystem. The ORAN architecture is broken down into three main building blocks:

- **Radio Unit (RU):**
  Transmits, receives, amplifies, and digitizes radio signals
- **Distributed Unit (DU):**
  Sends the digitalized signal into the network
- **Centralized Unit (CU):**
  Can be located closer to the core

The DU is physically at or near the RU, whilst the CU is closer to the core. As there is no longer a need to use specific software for particular hardware, an ORAN architecture makes the network more flexible and interoperable.



5G ORAN

What is 5G ORAN

5G ORAN means using ORAN technology to communicate using the fifth-generation cellular technology. Disaggregation is necessary for a 5G network, and as such, 5G networks benefit from Open Radio Access Networks.

Challenges of 5G ORAN

Despite all the advantages of ORAN, there are still some challenges, including:

- Still some lack of standardization across vendors, which can lead to compatibility issues
- A lack of skilled personnel to design, deploy, and manage ORAN networks

How Dense Air can help:

Dense Air provides the specialist ORAN design and implementation skills to help develop and deliver effective Radio Networks for clients in an extremely smart, cost efficient and timely manner.

For more information
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