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Decoding the Open RAN

~Shifting the Network Paradigm

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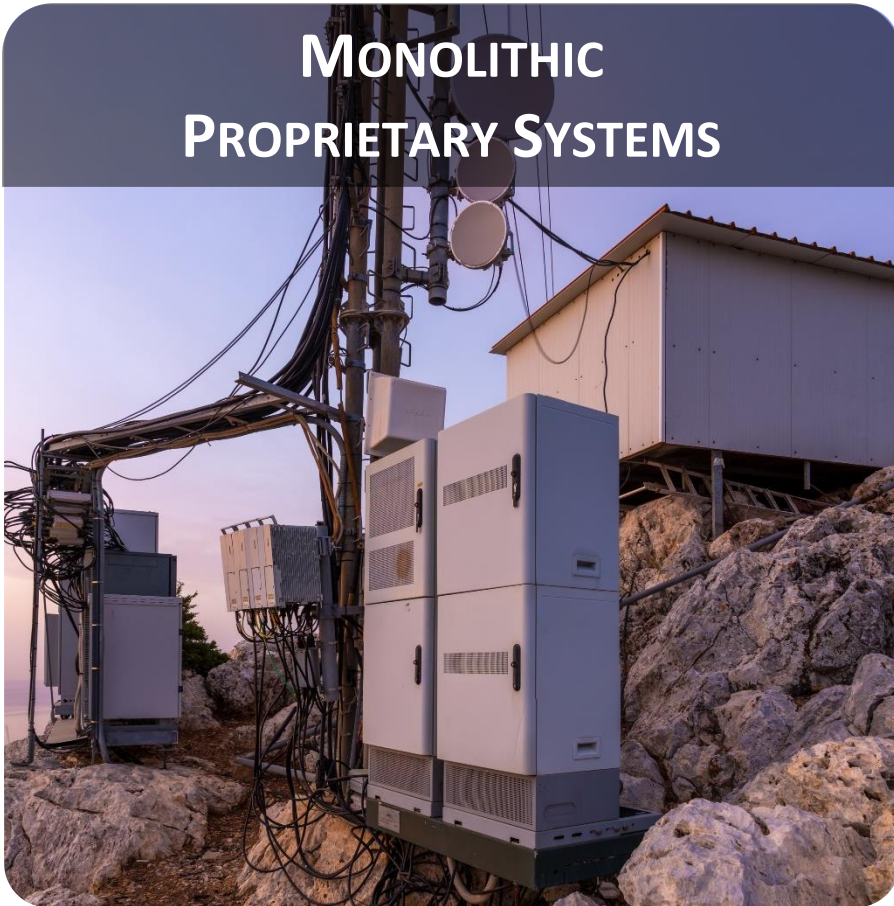
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What kind of network shift is happening across the globe?

MONOLITHIC PROPRIETARY SYSTEMS



OPEN DISAGGREGATED VIRTUALIZED WEB SCALE SYSTEMS



Networks are becoming more open, disaggregated and virtualized



Closed interfaces

Vendor specific hardware

Monolithic and proprietary

Localized control and data plane

Expensive

Standardized open interfaces

Programmable white boxes

Cloud native, disaggregated

Centralized control plane

Better TCO

OPEN STANDARD

O

DISAGGREGATED

D

VIRTUALIZATION

V

Open, Disaggregated and Virtualized Solutions

O

OPEN STANDARD

- Open interfaces
- Open source codes
- Non-proprietary
- Aligned with standards developed by open forums

D

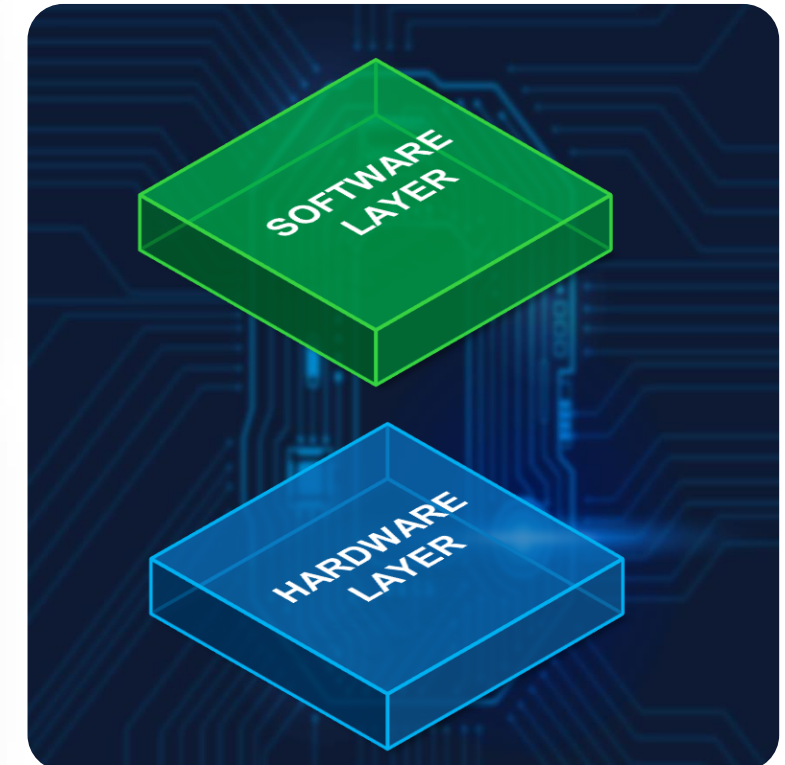
DISAGGREGATED

- Abstraction of hardware from software layer
- Centralized control plane
- Individual data plane

V

VIRTUALIZATION

- Software defined networking
- Optimized use of hardware resources
- Scalable on the go



Industry perspective on Open RAN acceptance

DISH completes successful 5G field validation and deploys Open RAN radio units

Rakuten Claims Open RAN Performance Gain Is Imminent

Major European Operators Commit to Open RAN Deployments

Collaboration aims to provide a framework for the creation of an interoperable market for Open RAN and ensure solution availability for a timely deployment in Europe.

Vodafone unveils first dedicated Open RAN test and integration lab

TIM sets up open RAN test and integration centre in Turin

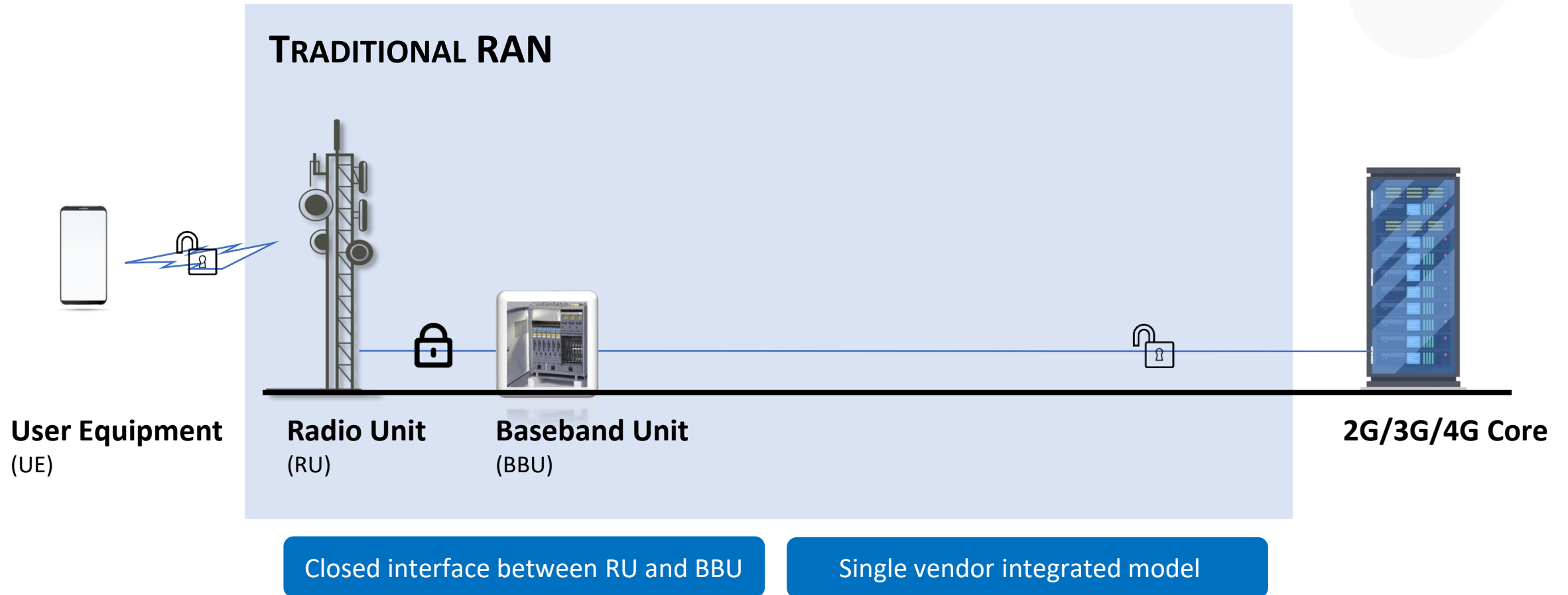
Airtel partners with Qualcomm for virtualised, Open RAN-based 5G networks



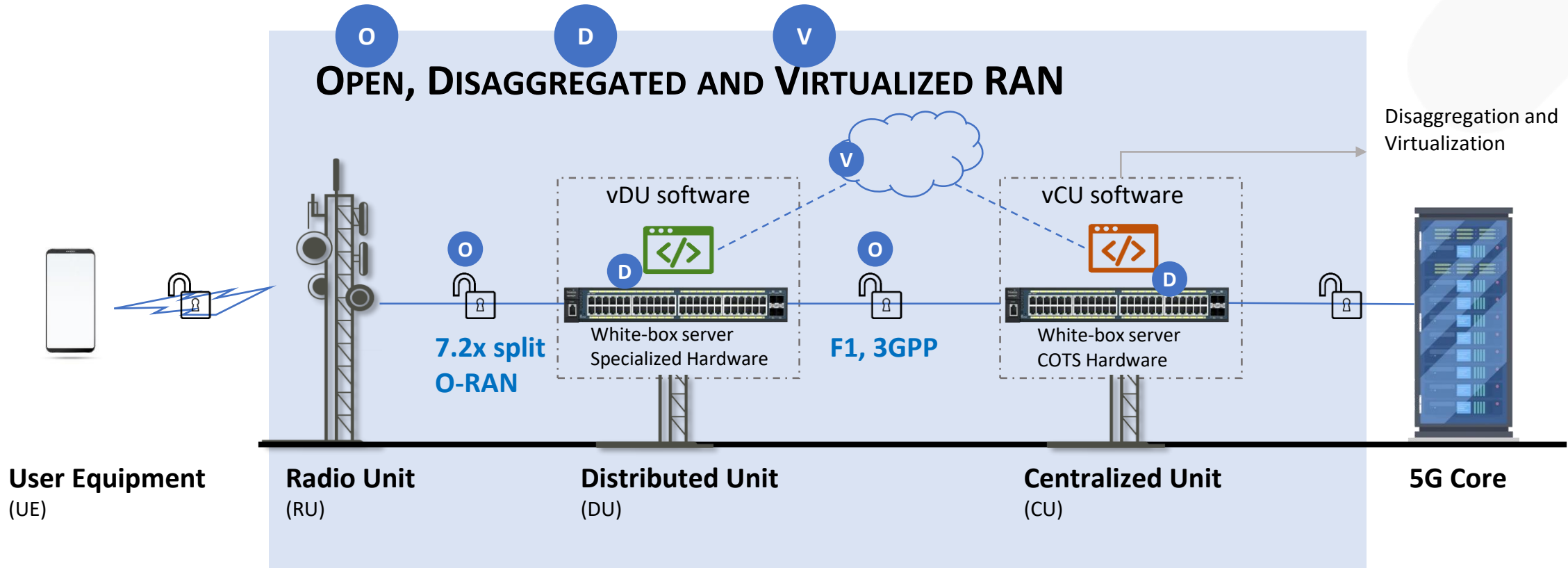
Telefonica



Transition from traditional RAN to Open and Virtualized RAN: Network with traditional RAN



Transition from traditional RAN to Open and Virtualized RAN Network with Open, Disaggregated and Virtualized RAN



Openness

O-RAN specified open interface between RU and DU

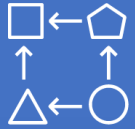
Disaggregation

Abstraction of hardware from software layer

Virtualization

Running software over general purpose hardware

Why Open RAN Solutions ?



Diverse Supply Chain

Less Dependence, more options



Better inventory management and utilization

Faster time to market



More vendor competition

Fosters innovation



Best of breed equipment

Network excellence



Enhanced security and Agility

Faster update cycle



COTS deployment

Better TCO

Challenges and possible solutions for Open RAN deployment



System Maturity

- Lack of large scale deployments
- Multiple stage testing



Complex System Integration

- Multi vendor environment
- Bug identification
- Ownership issues



Security Concerns

- Interfaces from different vendors
- Open interfaces makes difficult for encryption and encoding the data transfer

4G vRAN ready supporting 7.2x and split 2 RU with software upgrade to 5G NR

5G Indoor Small Cell



- SMB Indoors
- 1W 4x4 MIMO

5G Outdoor Small Cell



- Attach Outdoor
- 20W 4x4 MIMO

4G/5G Single/Dual/Triband Macro Radio



- Multi Band RU
- 160W 4x4 MIMO
- 320W 4x4 MIMO

1

Own Hardware

2

Ability To Provide Scaled Solutions

3

E2E Offering - Greater Control

4

Cloud Native Solutions



beyond tomorrow