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Open RAN:

Game Changer of Wireless Communications

For RWA Webinar

Baicells Technologies Inc.

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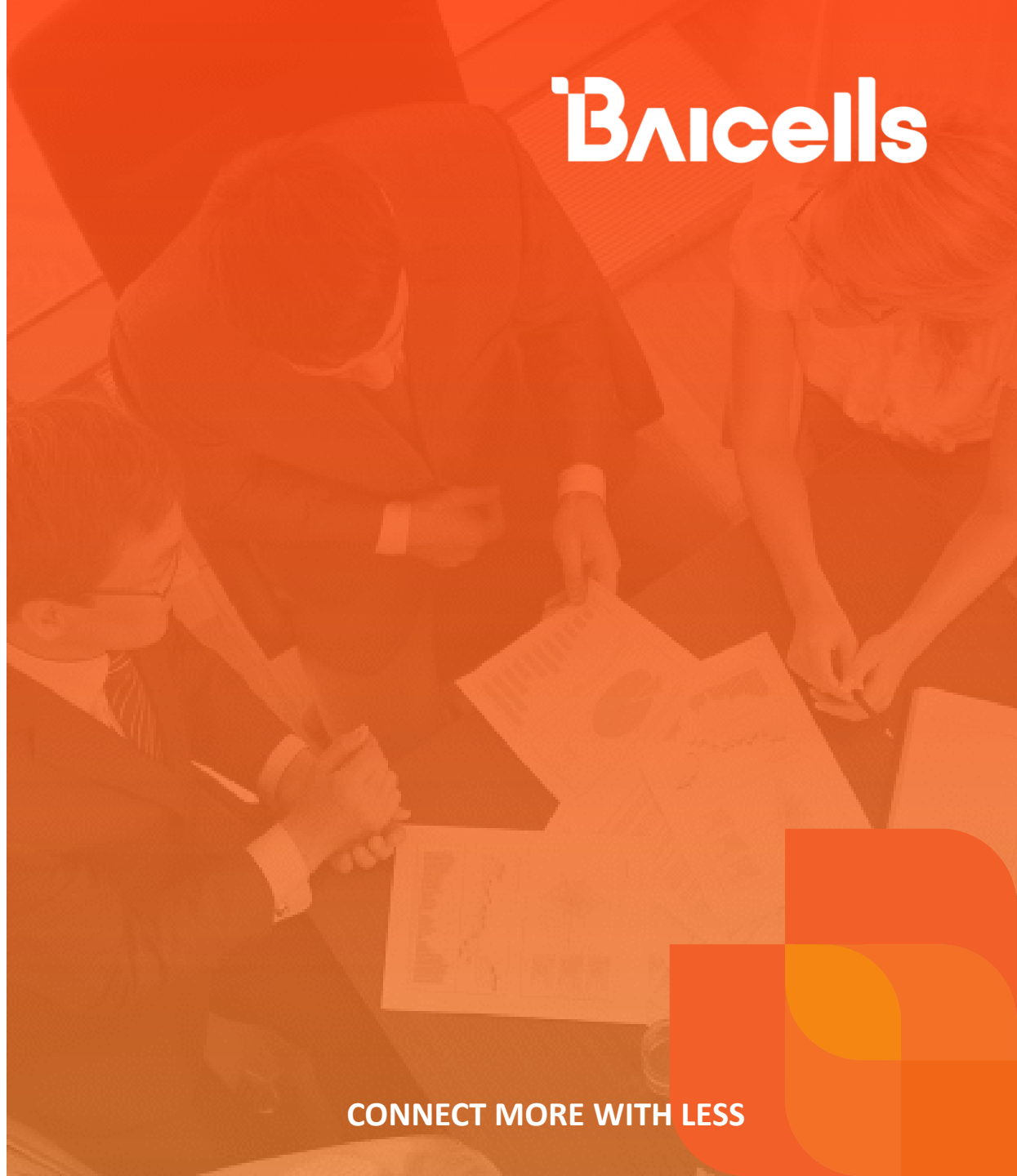
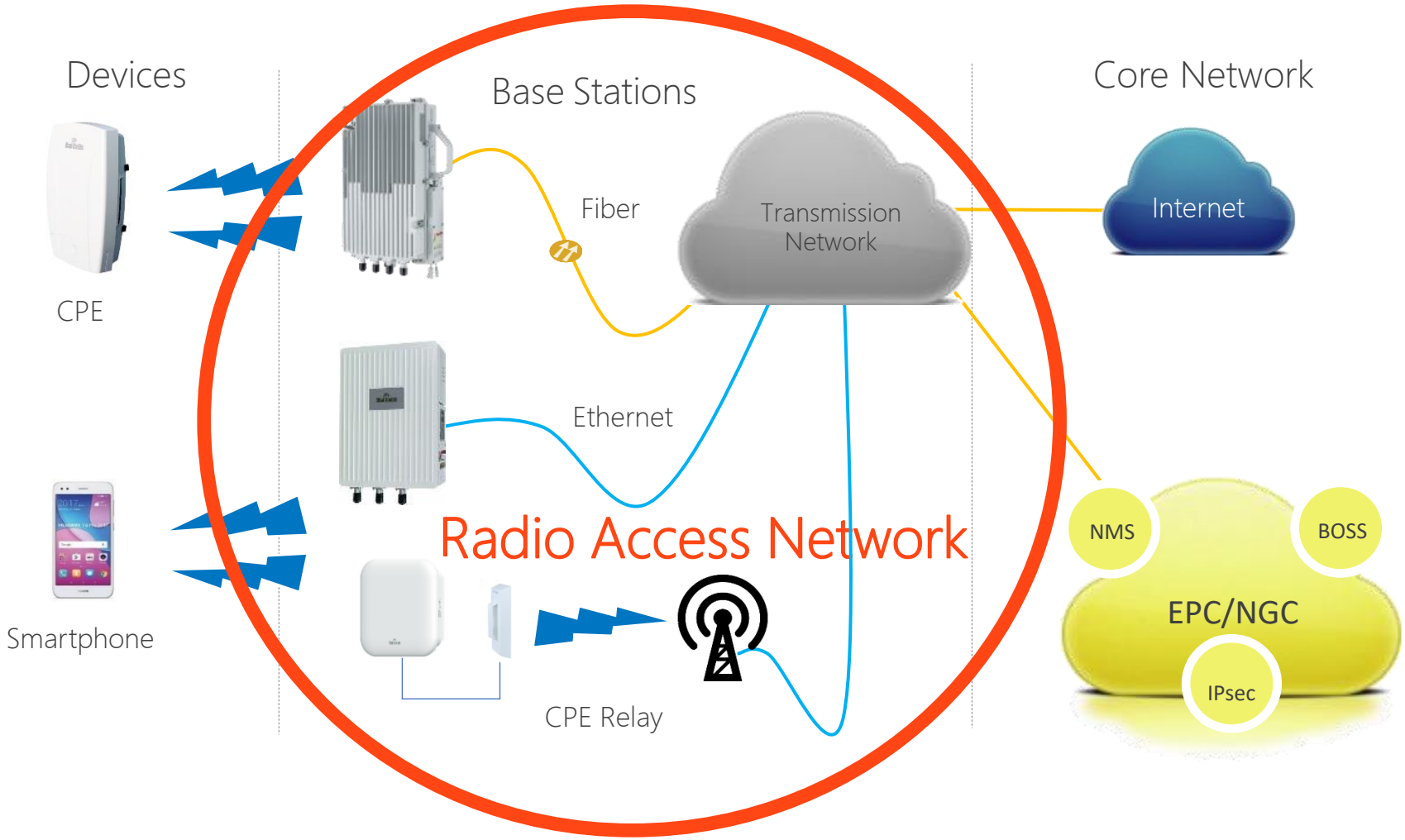
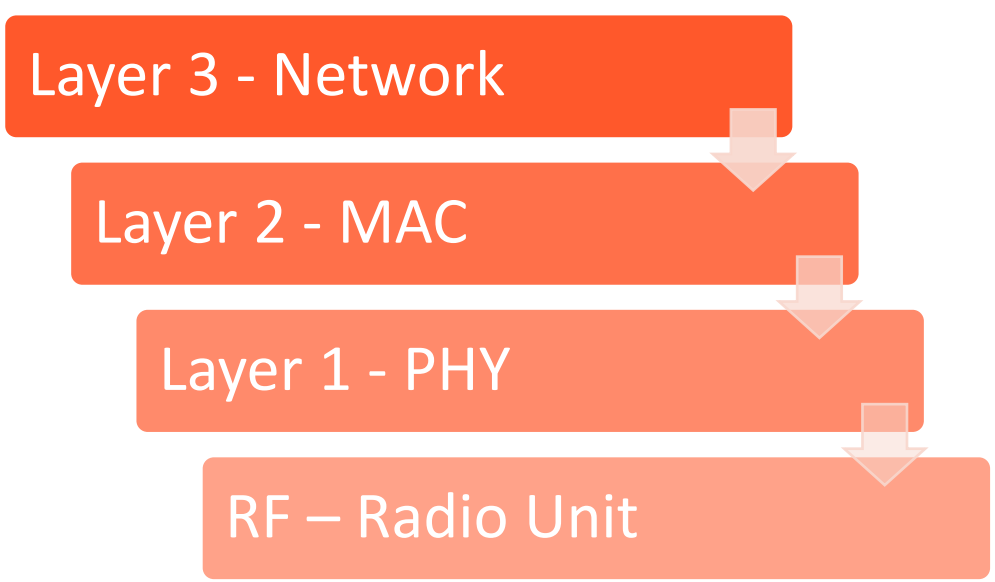


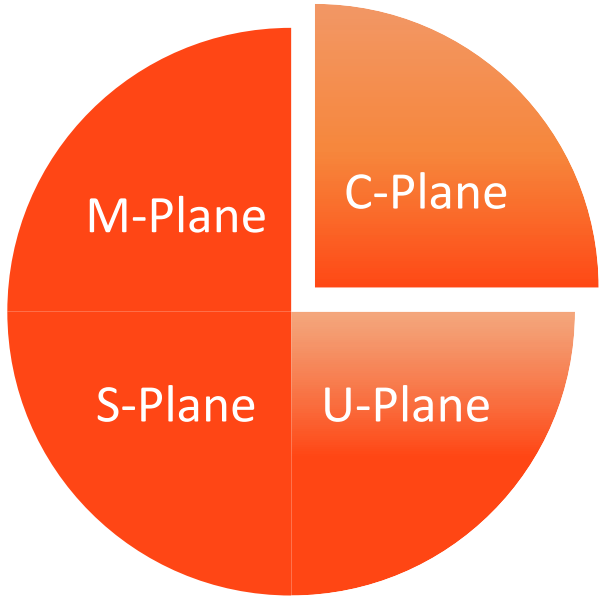
Radio Access Network (RAN)



Functional layers of **RAN**

Resources are better utilized when centralized**, e. g. Cloud RAN**





Performances are better when resources are at edge, **e. g. Edge Computing**

Building Blocks of **Open RAN**

Open RAN is open, intelligent, agile, and inter-operable

Open RAN Is Essential to 5G

High-Frequency Spectrum

- **US 28Ghz, 37Ghz, 39Ghz**
- Asia 2.6G and 4.9G
- Europe 3.5G
- Japan 3.7Ghz, 4.5Ghz, 28Ghz

High Propagation Loss

- The higher the frequency, the poorer the RF performance

Increased Power Consumption

- Battery life suffers from high power consumption

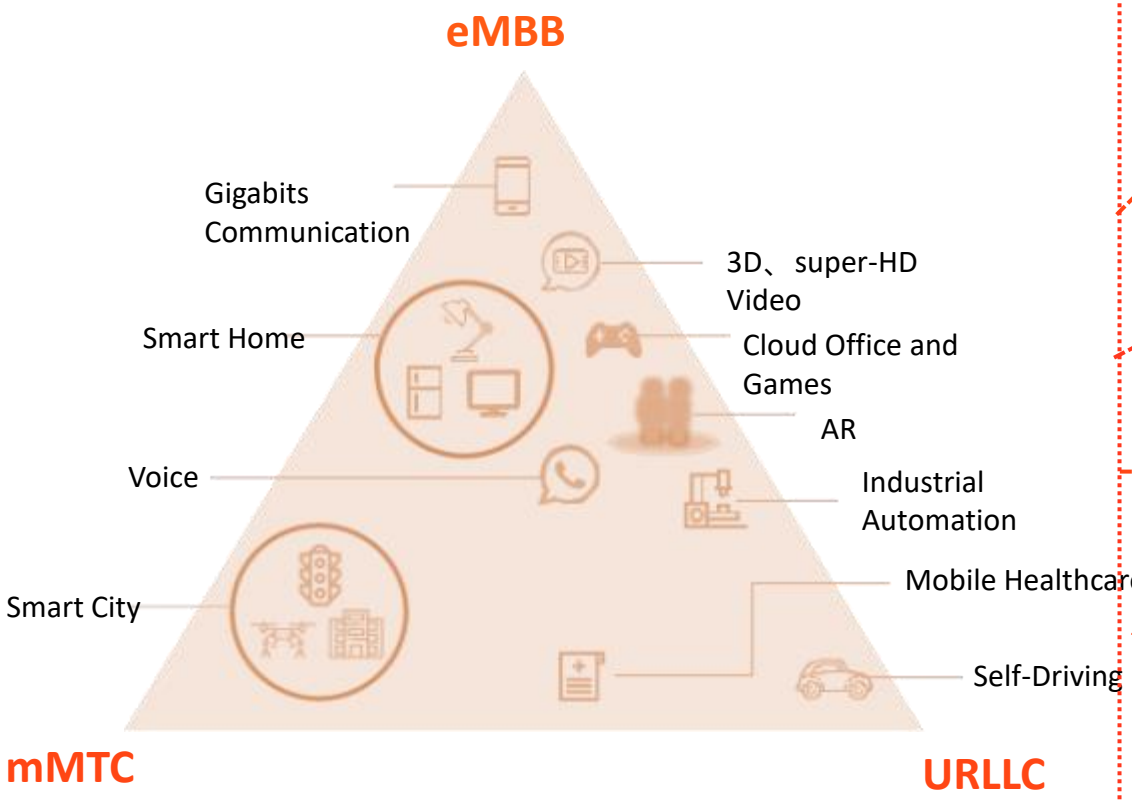
Large Number of Base Stations

CCID Whitepaper:

- Number of 5G macro cells will be 1.1~1.5 times of 4G
- Small cells will be at least 2 times

Open RAN Transforms Radio Access Network Industry

5G must be an open network to serve multiple purposes



Openness means innovation and collaboration

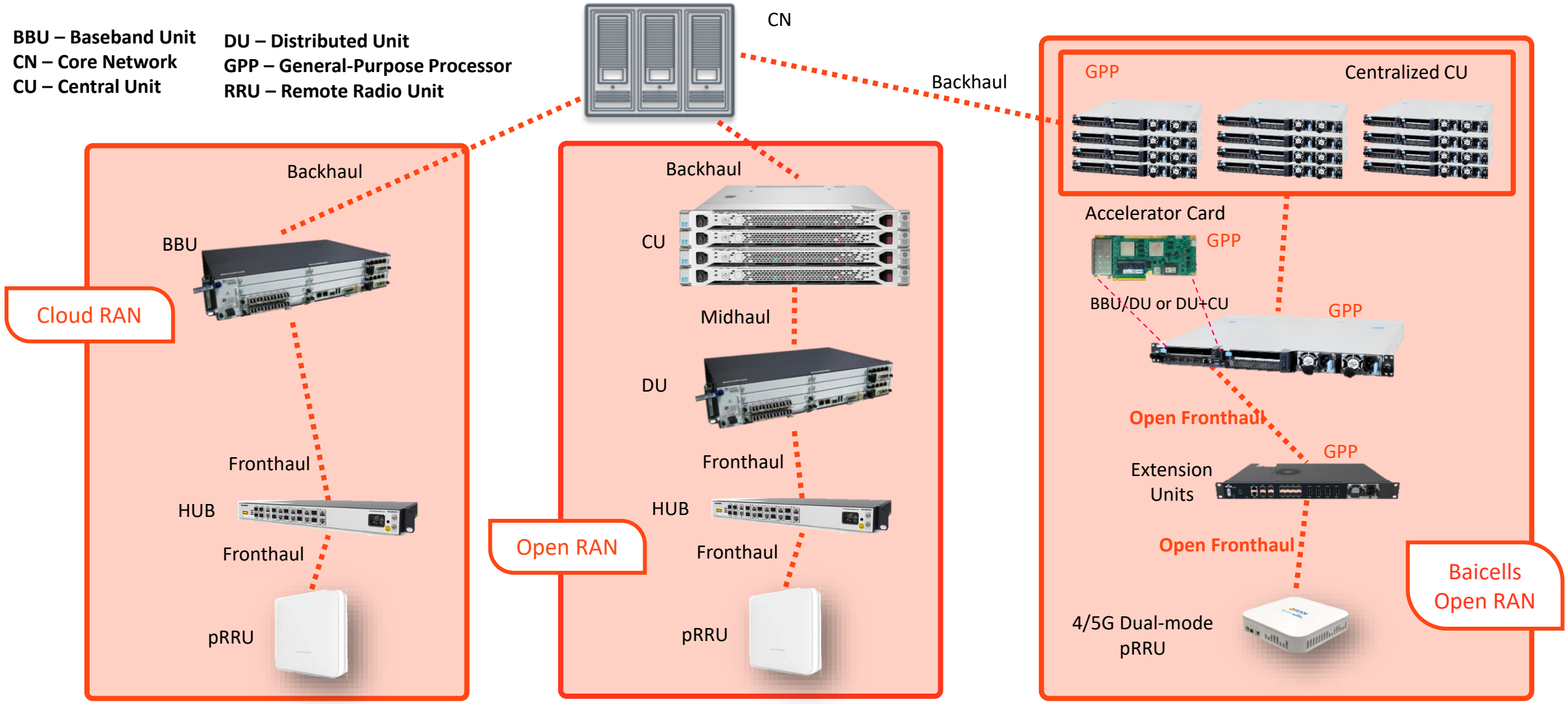
- Open
- Inteligent
- Virtualized
- Interoperable

O-RAN ALLIANCE

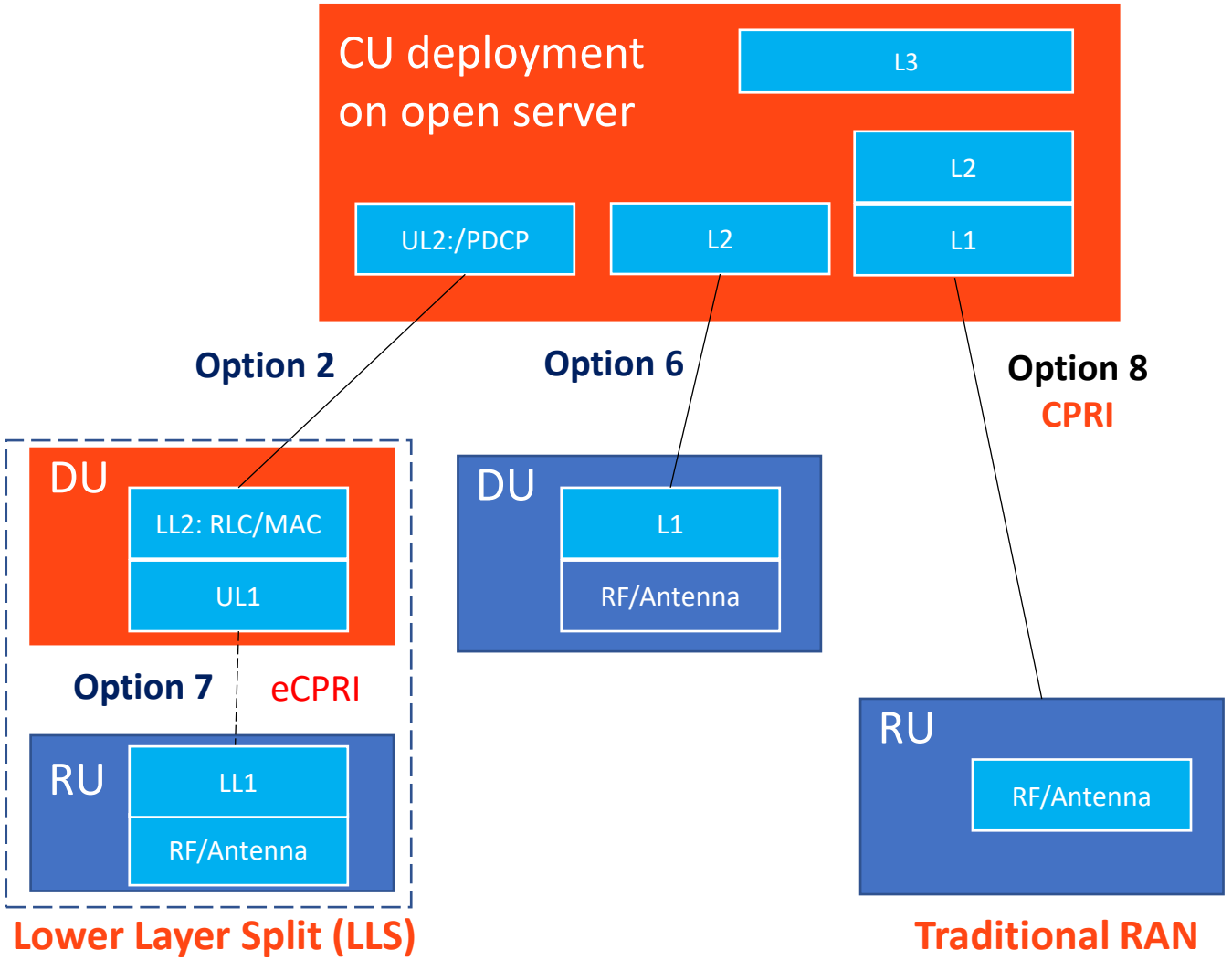
Traditional and innovative vendors complement each other to promote openness and cross-domain collaboration

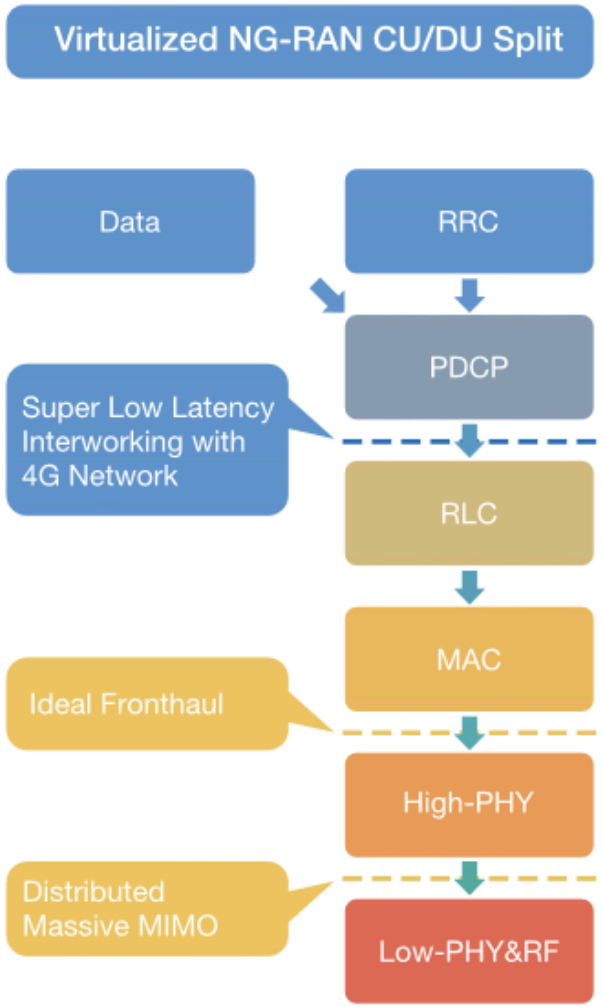
From Cloud RAN to Open RAN

BBU – Baseband Unit
CN – Core Network
CU – Central Unit
DU – Distributed Unit
GPP – General-Purpose Processor
RRU – Remote Radio Unit

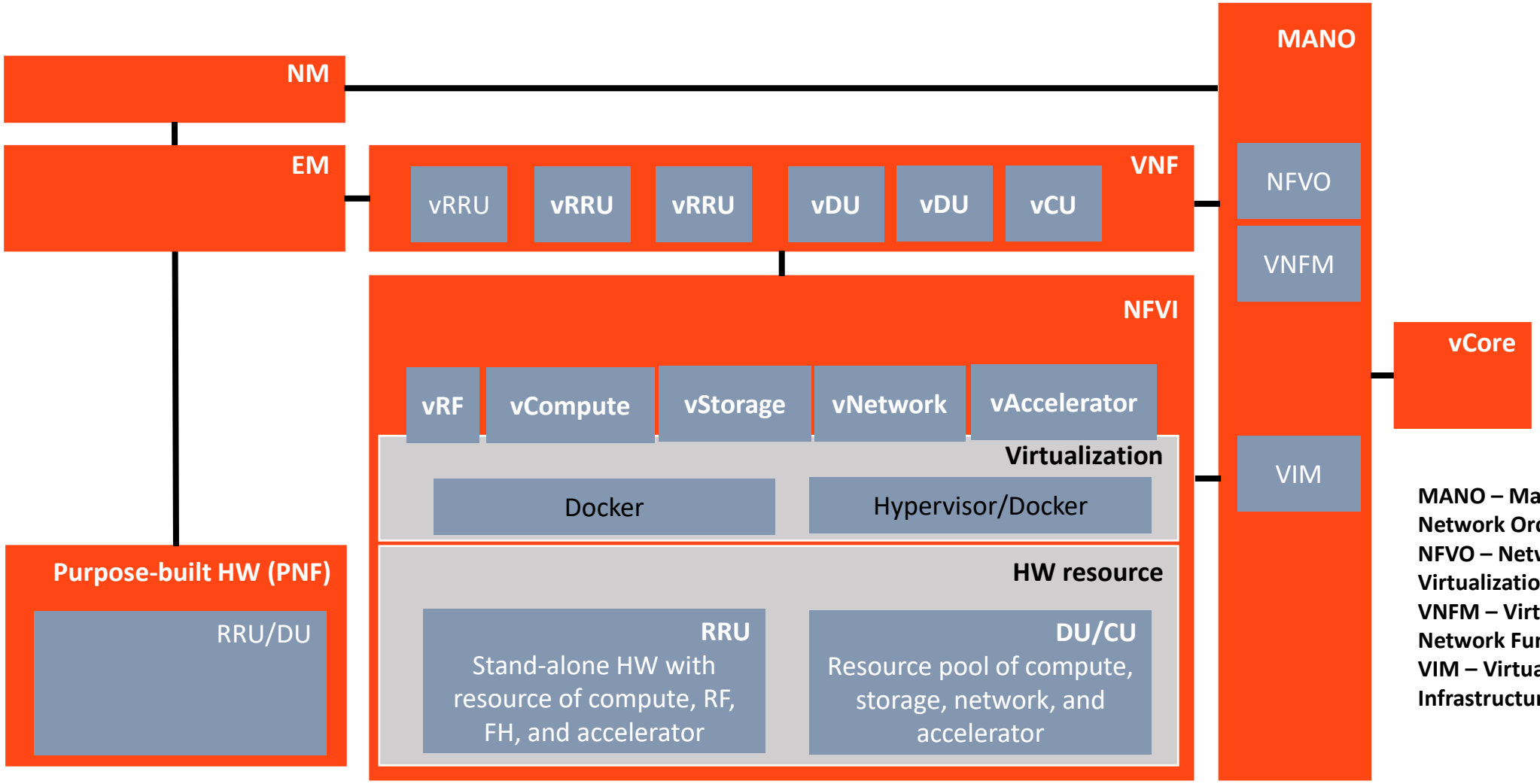


Typical Fronthaul Split Options in **Open RAN**





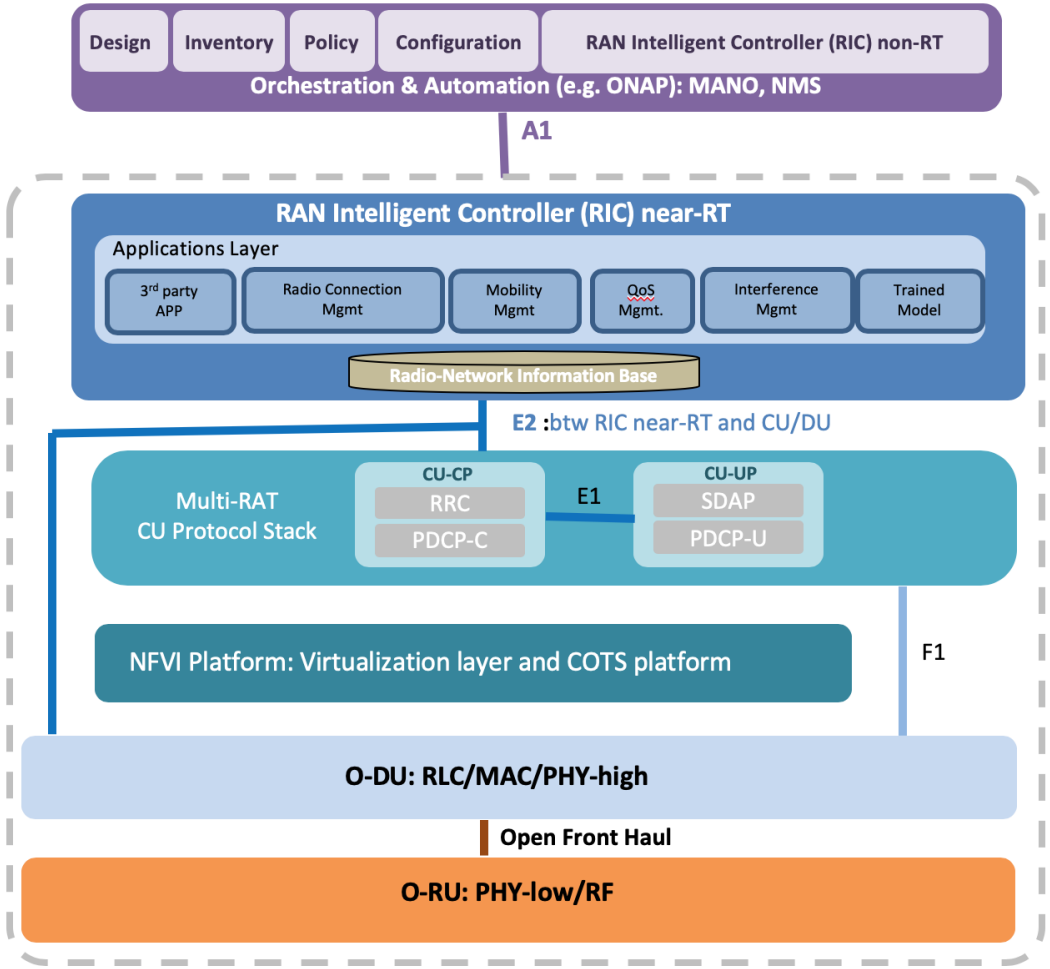
O-RAN Virtualized Network Function



MANO – Management and Network Orchestration
NFVO – Network Function Virtualization Orchestrator
VNFM – Virtualized Network Function Manager
VIM – Virtualized Infrastructure Manager

O-RAN Architecture and Specifications

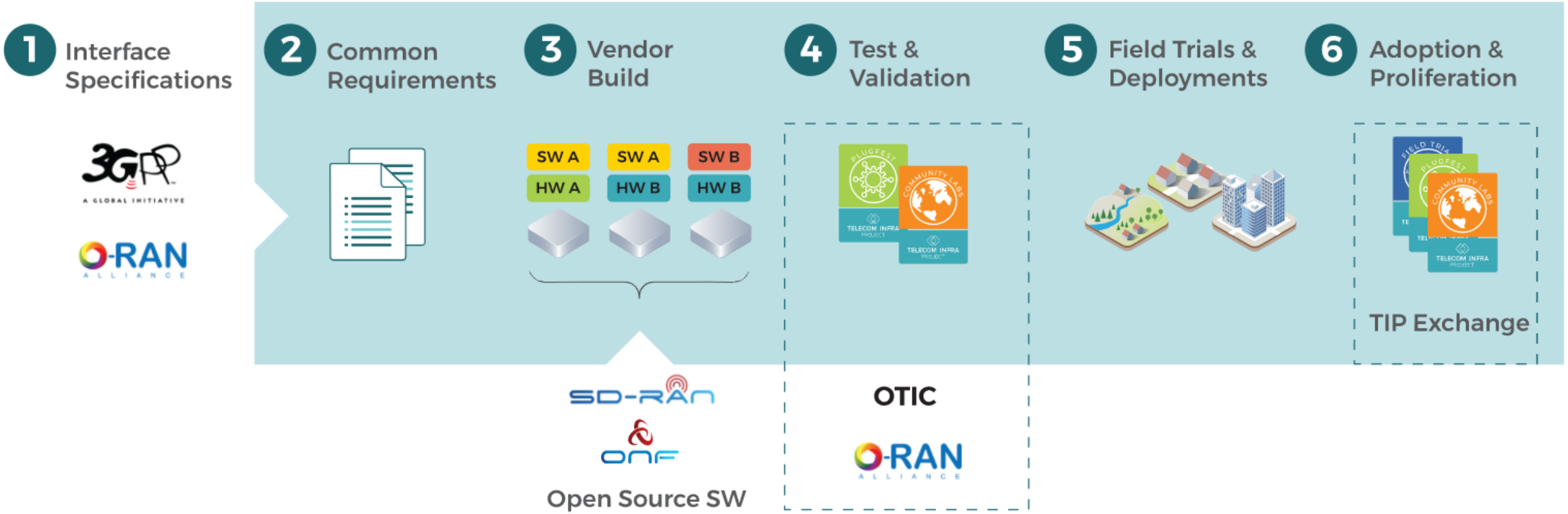
- Use Cases and Overall Architecture
- The Non-Real-Time RAN Intelligent Controller and A1 Interface
- The Neal-Real-Time RAN Intelligent Controller and E2 Interface
- The Open Fronthaul Interfaces



- The Open F1/W1/E1/X2/Xn Interface
- The Cloudification and Orchestration
- The White-box Hardware
- Stack Reference Design

Baicells chairs **The White-box Hardware Workgroup**

Managing **Open RAN Complexity** at Telecom Infra Project



TIP ensures compliance and interoperability

Vendors' Contribution to **Open RAN**

facebook	O-RAN ALLIANCE	中国移动 China Mobile	vodafone
TIP founder	Partners	• 4G/5G white box • 5G indoor small cells	Commercial OpenRAN product

Baicells partners with standard bodies, operators, OTT and SW/HW vendors as a key part of the ecosystem

Evenstar Program Accelerates **Open RAN Commercialization**

Baicells Joins Partners to Develop Evenstar Remote Radio Units

January 19, 2021

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RELATED TOPICS

PLANO, Texas, Jan. 19, 2021 /PRNewswire/ -- Baicells, a leading equipment manufacturer of 4G LTE and 5G NR E2E Solutions, today announced it will join Facebook Connectivity and other global partners in the Evenstar program to develop Remote Radio Units (RRU) and improve the adoption of OpenRAN technology.

The Evenstar program is a collaborative effort by global telecom partners to accelerate the adoption of OpenRAN technologies by focusing on building general-purpose RAN reference designs for 4G and 5G networks that are aligned with 3GPP and O-RAN specifications. In the development of the

Open RAN for Starters

Open RAN
Starter Kit

Open RAN
5G NR

Open RAN
4G LTE

You don’t have to wait for **5G**

Summary

- Open RAN is essential to 5G
- Open RAN is open, intelligent, agile, and interoperable
- Open RAN deployment is underway
- Baicells enables Open RAN in LTE and 5G

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(888) 502-5585

sales_na@baicells.com

baicells.com