Open RAN Architectures for Next Gen Mobile Networks

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Agenda

> About on Mavenir

> Open RAN Evolution & HW Eco System

> Open RAN Architecture Options

Open RAN Global Acceptance & Mavenir's Footprint

5000+ Skilled resources and R&D Engineers researching on advanced telecom gears for over **250 customers** in **140 countries**

Mavenir **OpenBeam Radio Portfolio**

Remote Radio Unit

Massive MIMO <6GHz

Millimeter Wave

Com

Fully Compliant to ORAN Spec & can work with any vendor's DU and SMO

Open RAN Platform

Macro & Micro Radios

Multiband & Beamforming Radios

...sign

Low...wer...onsumption

Built-In Intelligence & Automation
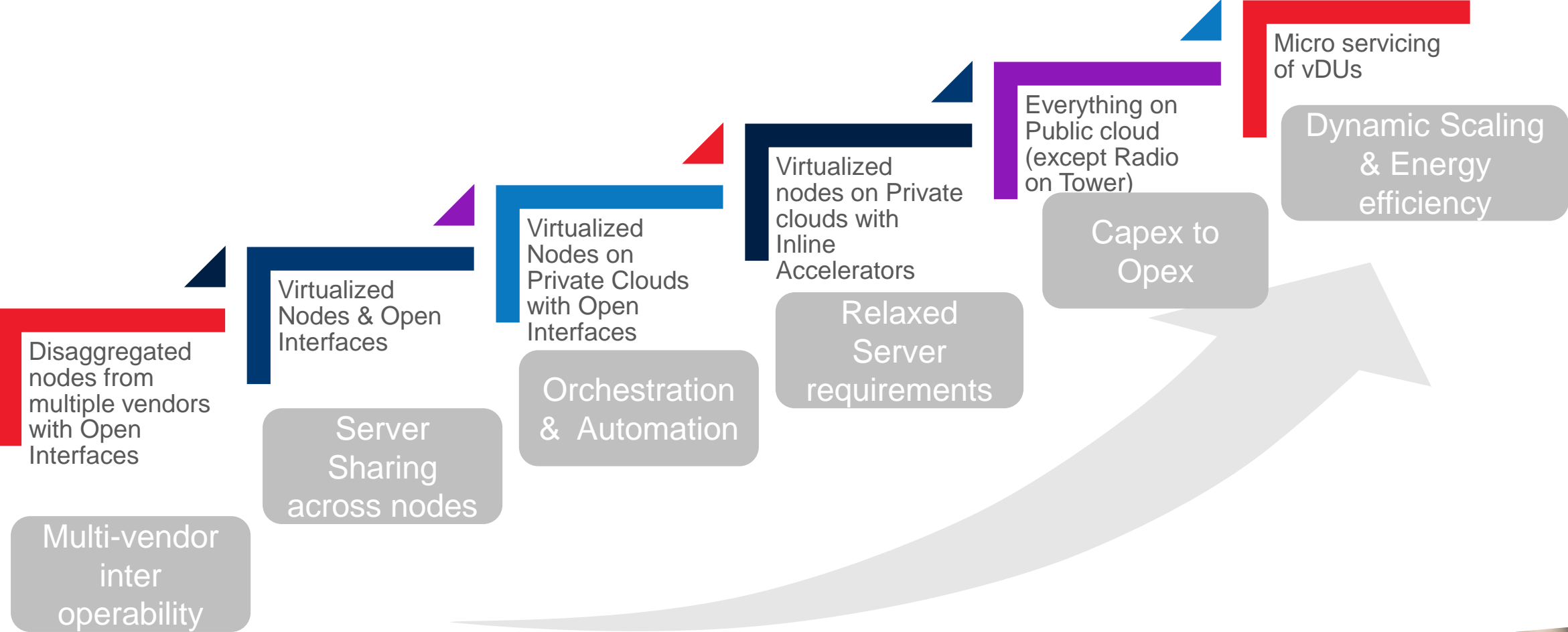
Mavenir R&D

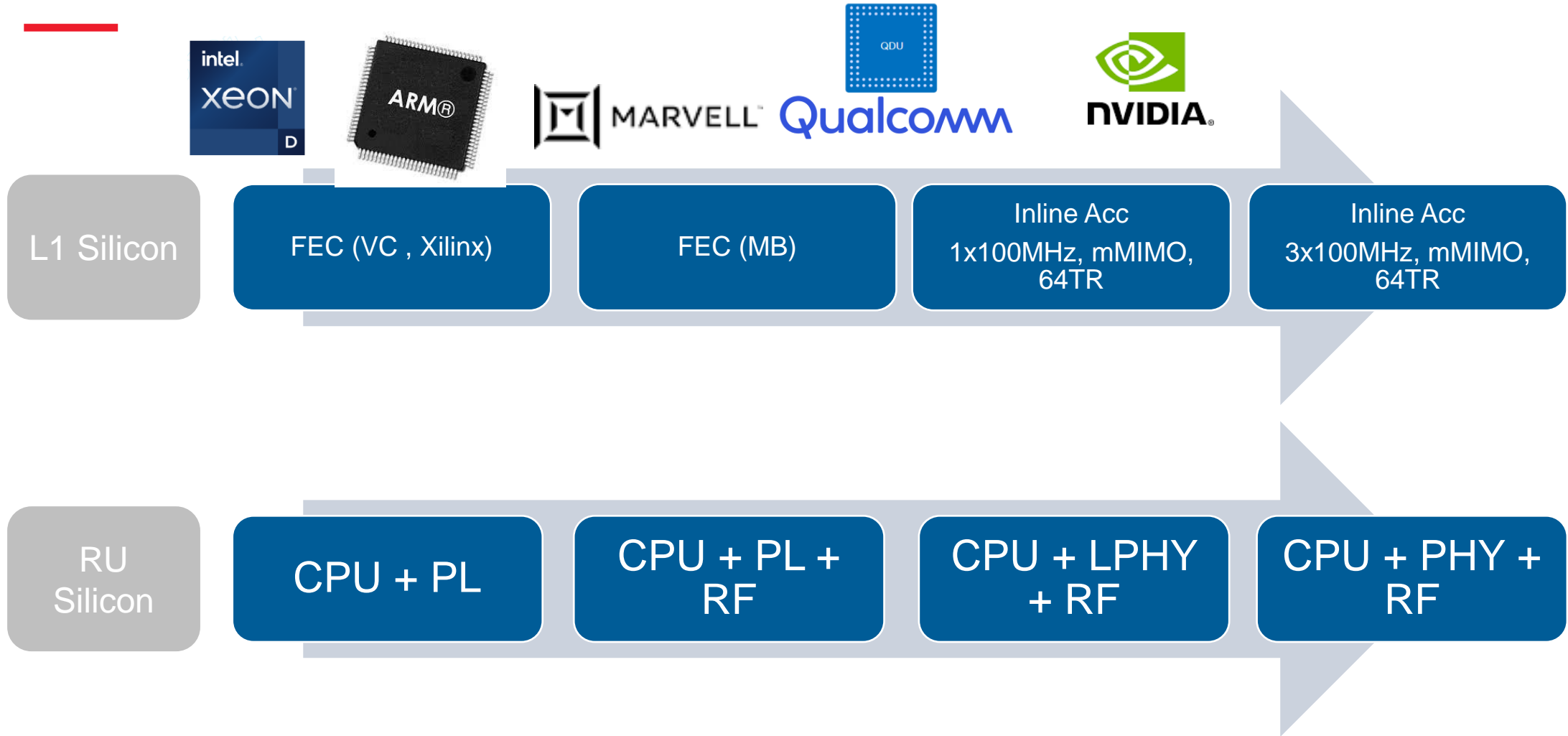In house development teams

Manufactured in India

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Trust the Future

Open RAN Evolution & HW Eco System

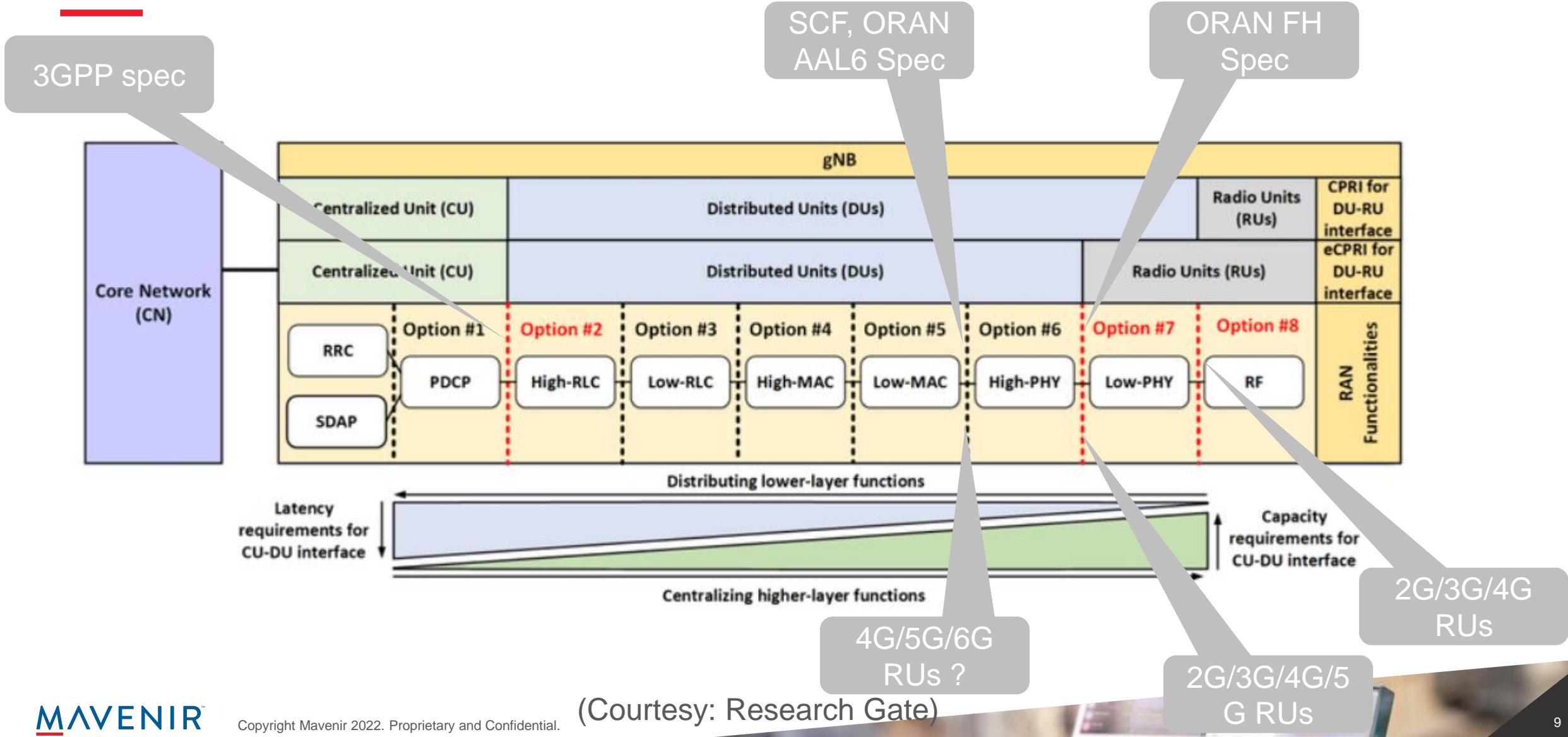# Evolution from custom equipment to Cloud based RAN

Disaggregated nodes from multiple vendors with Open Interfaces

Multi-vendor inter operability

Virtualized Nodes & Open Interfaces

Server Sharing across nodes

Virtualized Nodes on Private Clouds with Open Interfaces

Orchestration & Automation

Virtualized nodes on Private clouds with Inline Accelerators

Relaxed Server requirements

Everything on Public cloud (except Radio on Tower)

Capex to Opex

Micro servicing of vDUs

Dynamic Scaling & Energy efficiency

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Growth Drivers for RAN Arch Evolutions

L1 Silicon	FEC (VC , Xilinx)	FEC (MB)	Inline Acc 1x100MHz, mMIMO, 64TR	Inline Acc 3x100MHz, mMIMO, 64TR

RU Silicon	CPU + PL	CPU + PL + RF	CPU + LPHY + RF	CPU + PHY + RF

Open RAN Architectures

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3GPP Spit Options

(Courtesy: Research Gate)
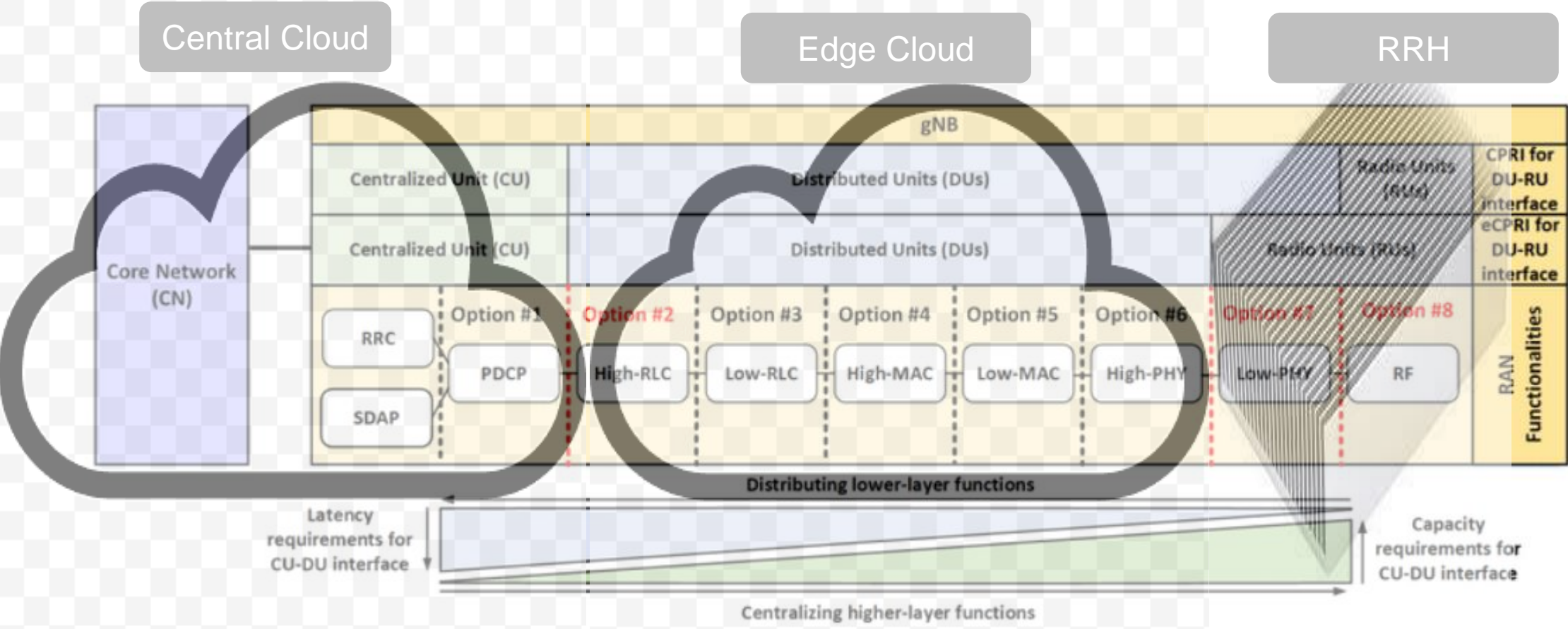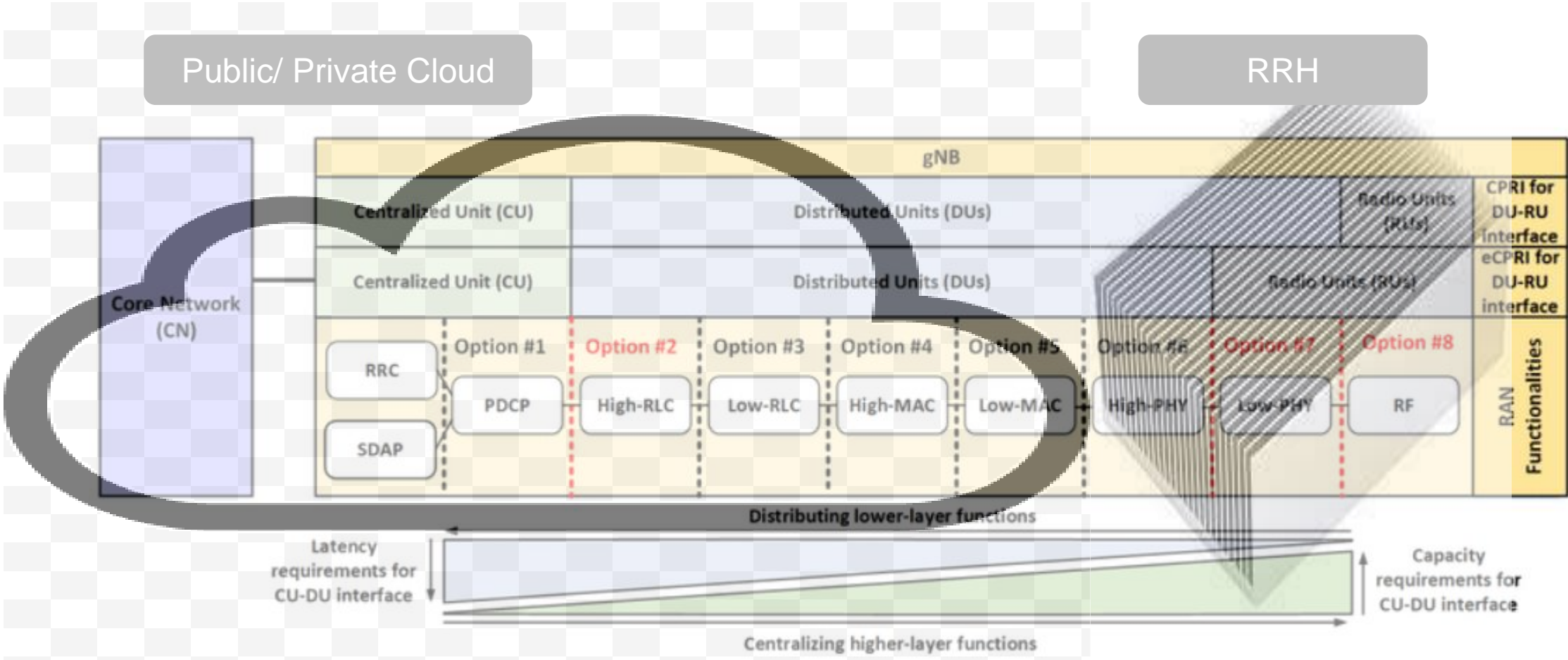
Open RAN Splits -1

Open RAN Splits - 2

Potential Open RAN Split in Next Gen

Enterprise Solution with Intelligence at the Edge

5G Connected Devices

NVIDIA AI-on-5G Platform Solution

5G Radio (Private Network)

Fronthaul

AI Frameworks
Mavenir Edge AI IVA
NVIDIA Metropolis AI Framework

5G Stack
NVIDIA Aerial SDK
Mavenir 5G L2+
Mavenir 5G Core

CUDA Software

NVIDIA-Certified Systems

Fleet Command

https://www.youtube.com/watch?v=PWe8-hZ2x9E

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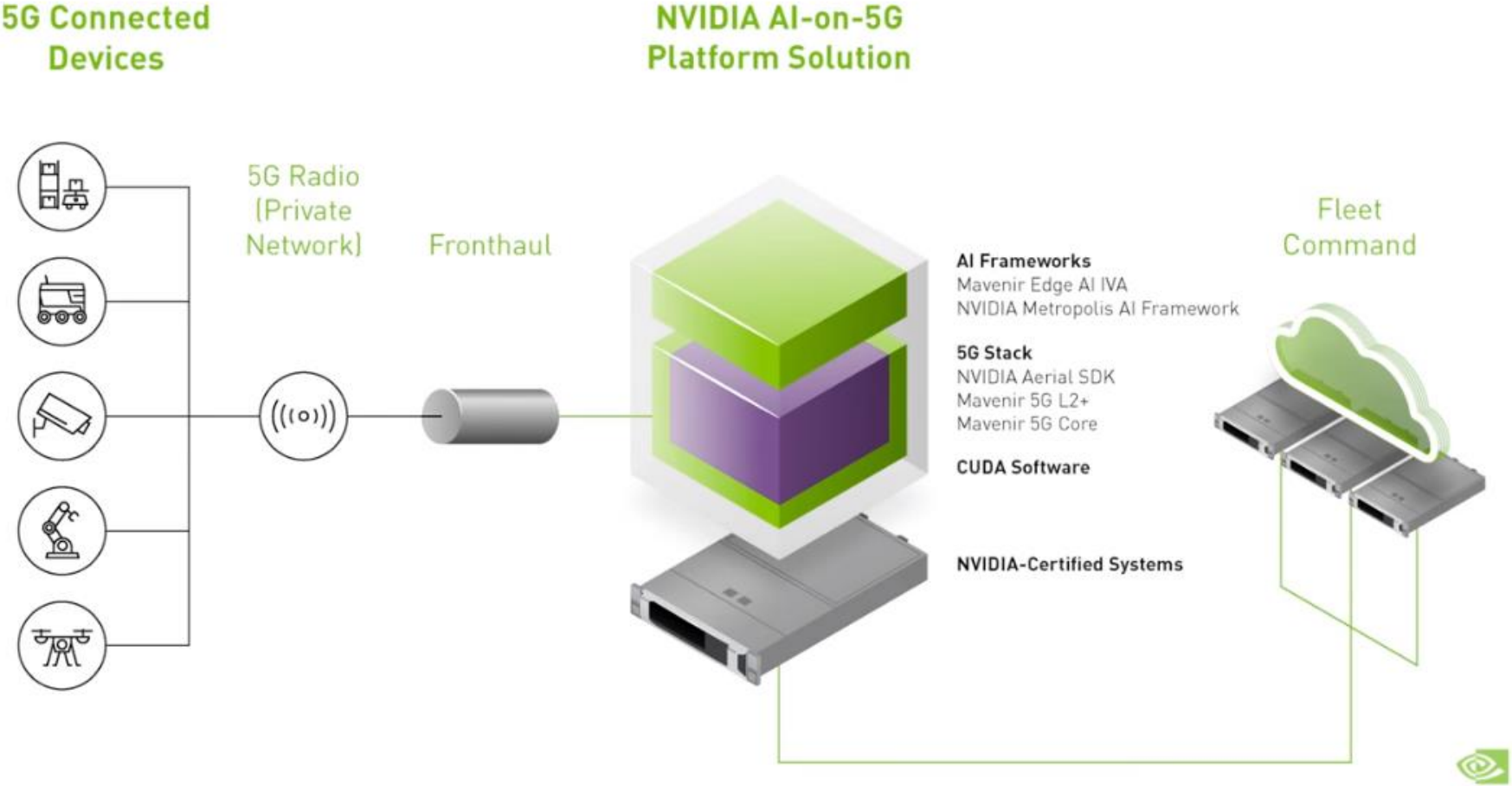
Open RAN **Industry Evolution**

Next-gen SoCs & Transport integration
- In-line acceleration options
- vCSR
- Increase Capacity per server
- Lower Power consumption
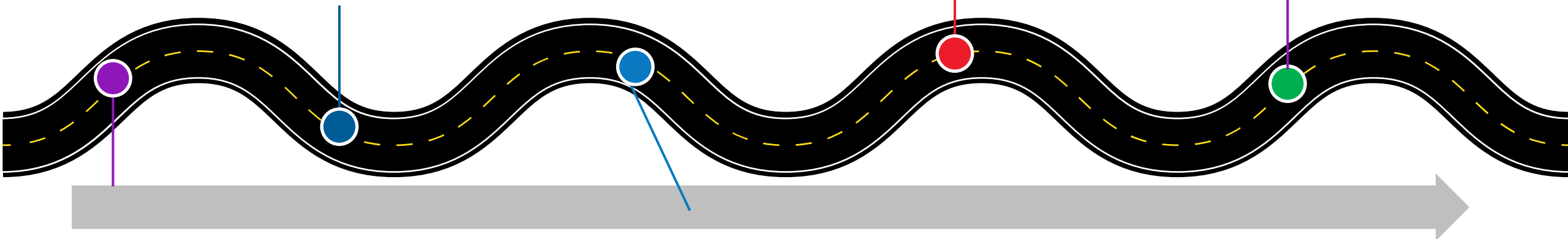
Qualcomm NVIDIA MARVELL

5G

Advanced 5G
- Microservices based vDU
- Satellite communications over 5G (co-existence with terrestrial networks)

6G
- THz communications
- Services Based Architecture for RAN
- Digital twinning
- E2E AI w/ deep learning

Public & Hybrid cloud
- Hybrid gNB deployment: CU and/or DU deployment in public cloud
- Private networks, URLLC

Optimizations and New Use Cases
- AI/ML based scheduler
- AI driven beamforming and UE behavior learning
- Centralization of DU for low-capacity sites
  - Minimize Active device count/real estate on cell site