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#CiscoLiveAPJC BRKCOL-2023

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Building a Programmable Open Platform for a Dynamic 5G Future

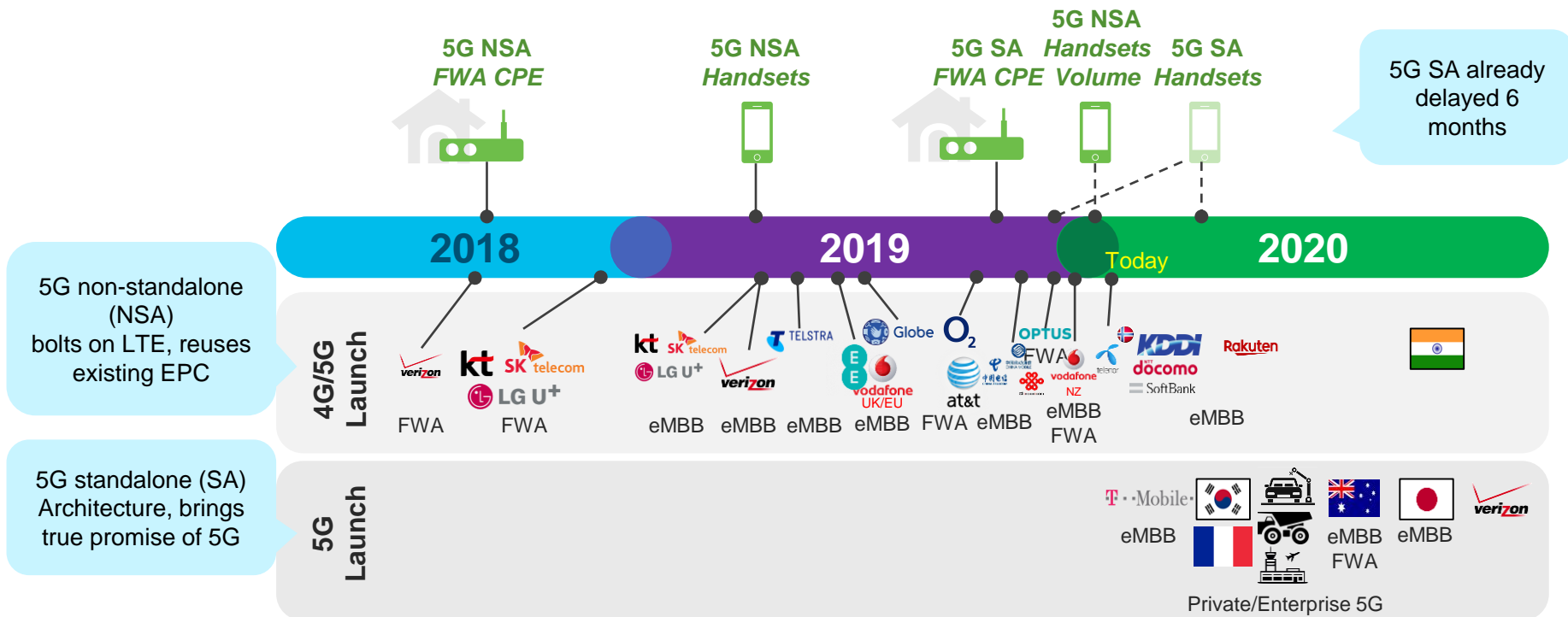
Andrew Mackay, Mobile Solutions, APAC
BRKCOL-2023



Agenda

- Status of 5G Adoption
- 5G Network Foundations
- Bring it all together in a 5G Blueprint
- Open Virtualised Radio Access Network (OvRAN)
- Distributed Network Cloud
- Summary

5G has begun – “Kind of”



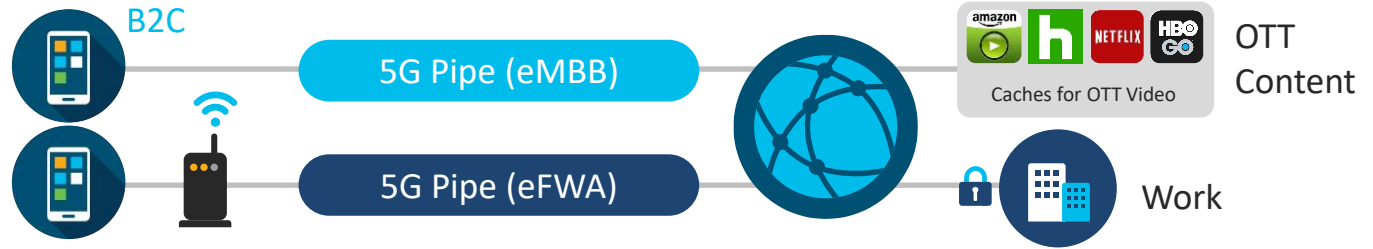
Glossary

NSA = None Stand-Alone
SA = Stand-Alone 5G Core

eMBB = enhanced Mobile Broadband
FWA = Fixed Wireless Access

5G Enhanced Business Enablement

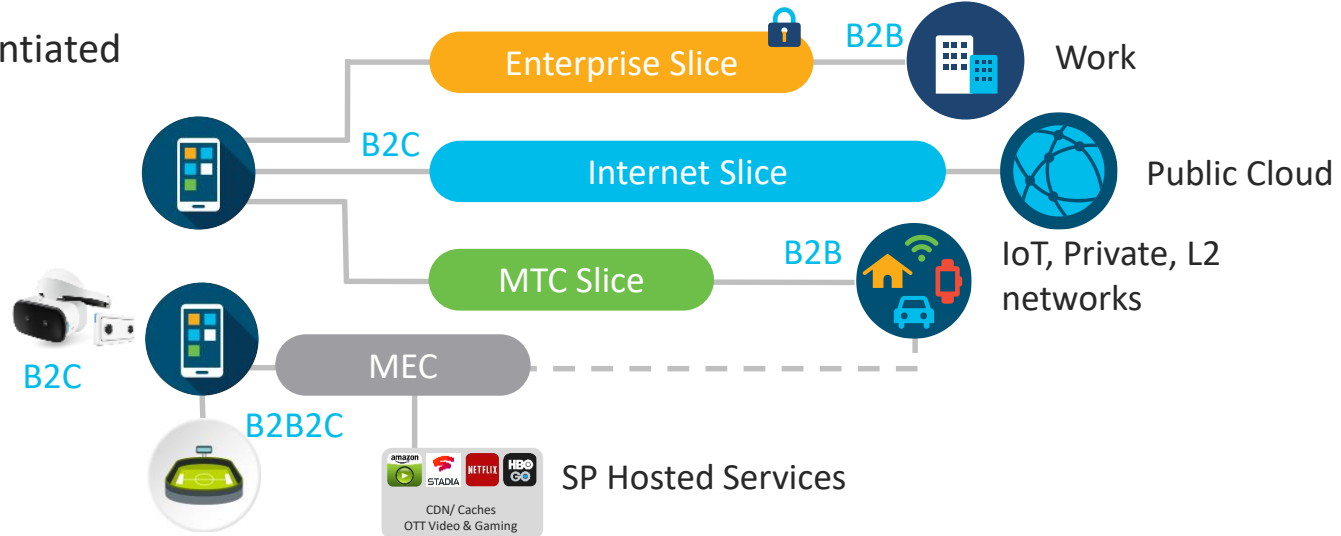
1. Enhanced Broadband Access (fatter pipe)



2. Diverse Differentiated Services

Custom Attribute

1. Bandwidth
2. Latency
3. Resiliency
4. Security



3. Edge Services

5G Foundations



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5 Architecture Pillars of 5G



New Radio

Higher Flexibility
High BW, low latency
Multiband Connectivity
Massive MIMO



Decomposition

Radio Access
Mobile Core
Converged Core
Disaggregation



SW-Centric

Virtualization
Cloud Native
Edge Computing
Programmable



Convergence

Any Access
Common Sub Mgmt.
Converged Transport
Common Policy



Automation

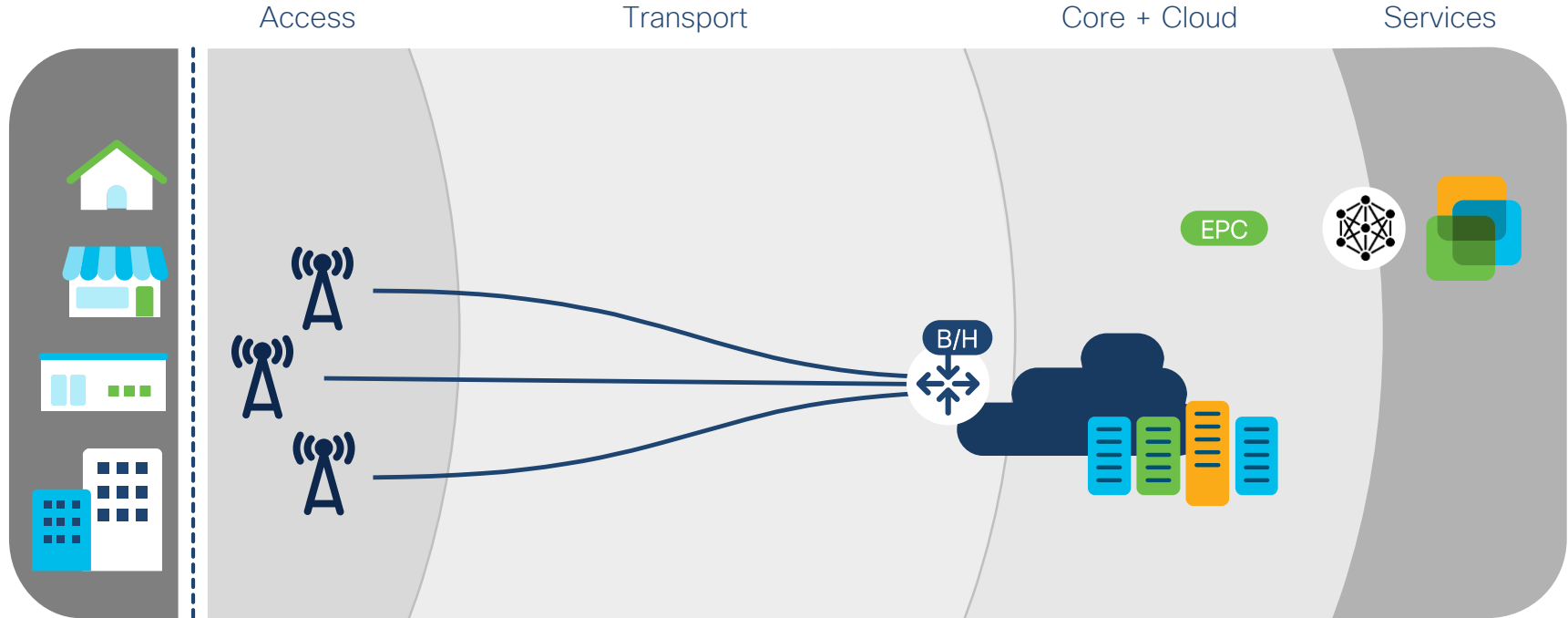
Closed Loop
Multi Domain
Network Slicing
Service Assurance

5G NR

5G Systems Architecture

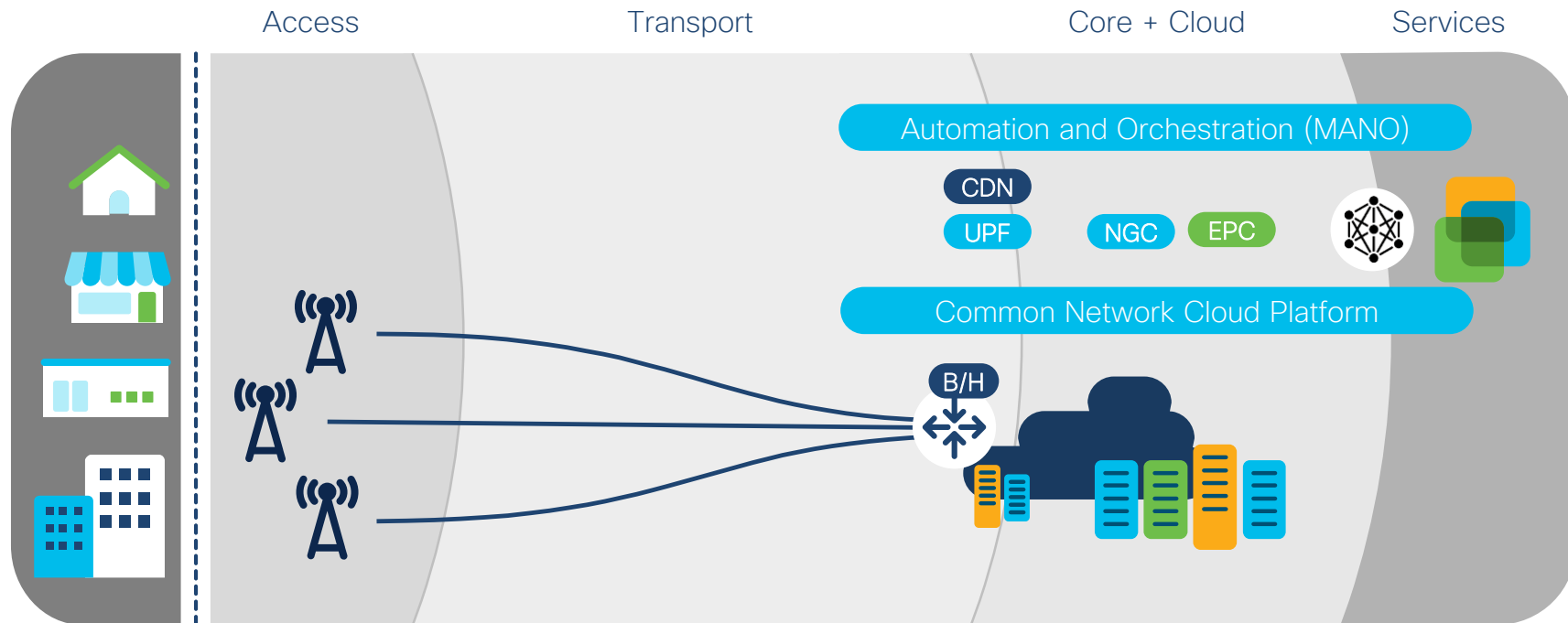
Transforming the Mobile Network

3G/4G Centralised Architecture



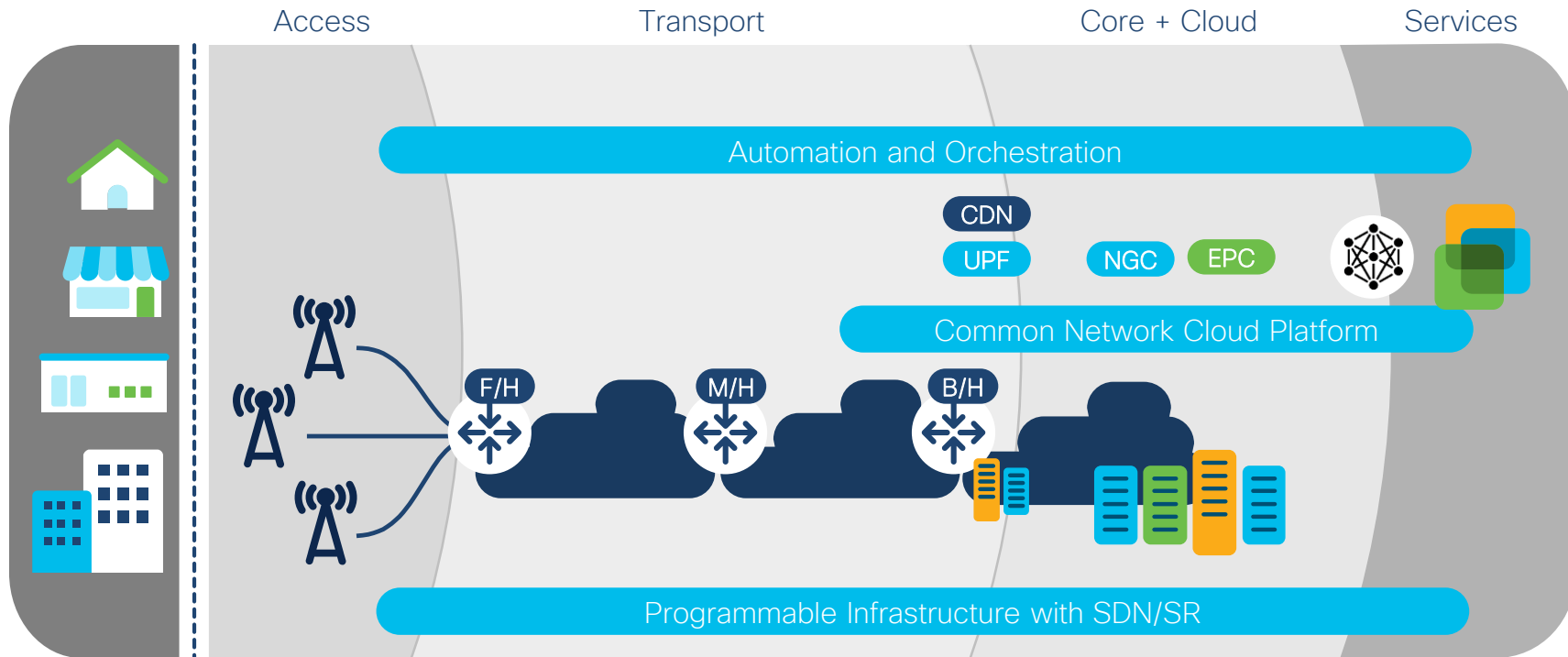
Transforming the Mobile Network

Scale core and optimise services with NFV & MANO



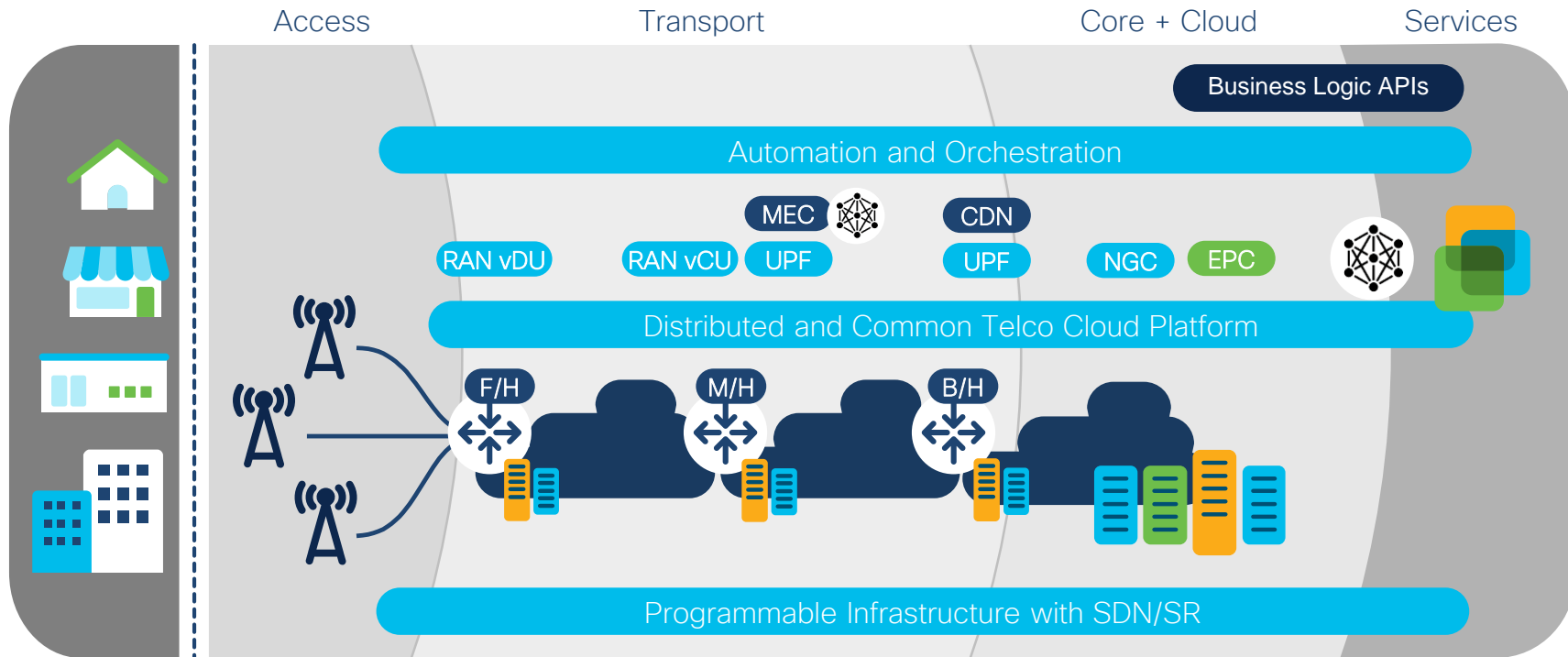
Transforming the Mobile Network

Create end to end network fabric with SDN Transport



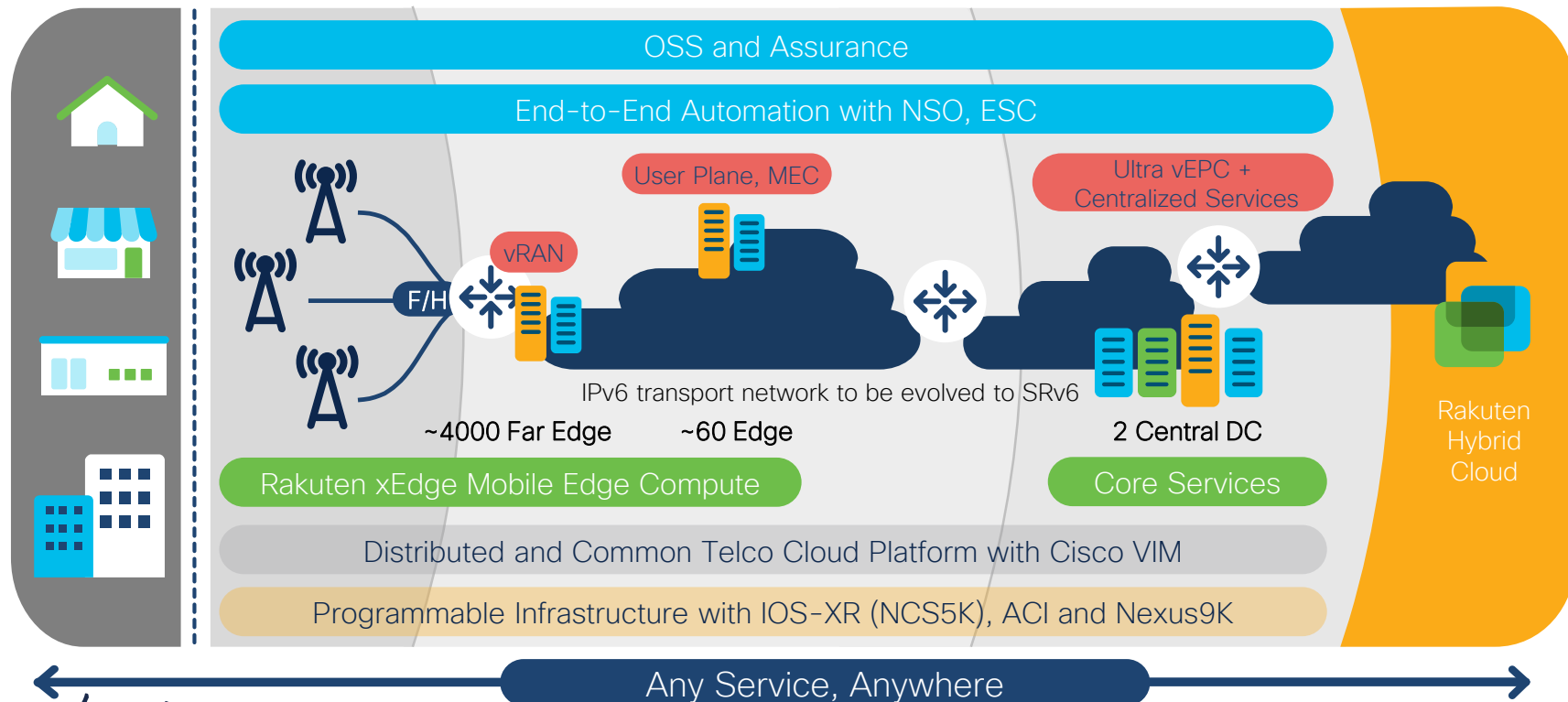
Transforming the Mobile Network

Open up the “Edge” with vRAN and MEC

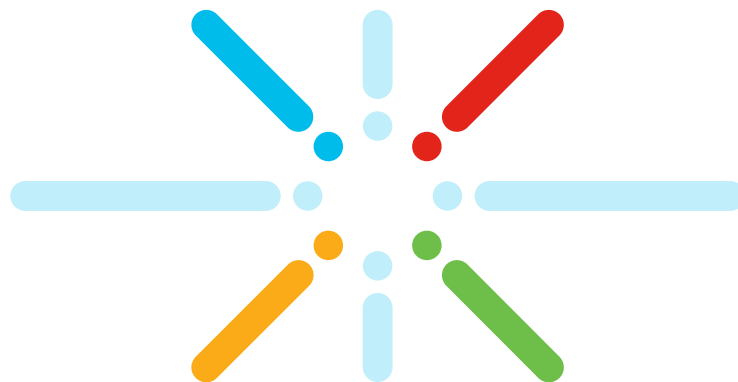


Customer Example – Greenfield Deployment

Rakuten Mobile Network, Japan



Open vRAN



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Radio Access Network (RAN) Evolution and Definitions

Glossary

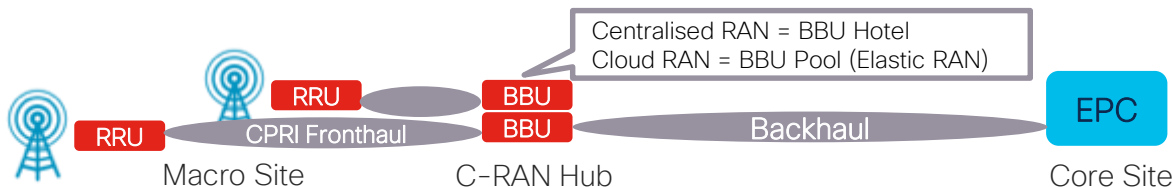
RRU = Remote Radio Unit
RU = Radio Unit
BBU = Baseband Unit

DU = Distributed Unit
CU = Centralised Unit
EPC = Evolved Packet Core
MEC = Multi-access Edge Compute

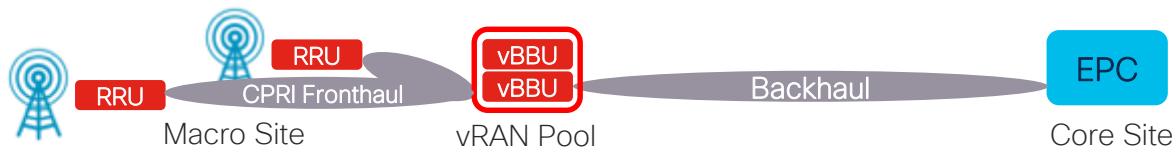
DRAN – Distributed RAN



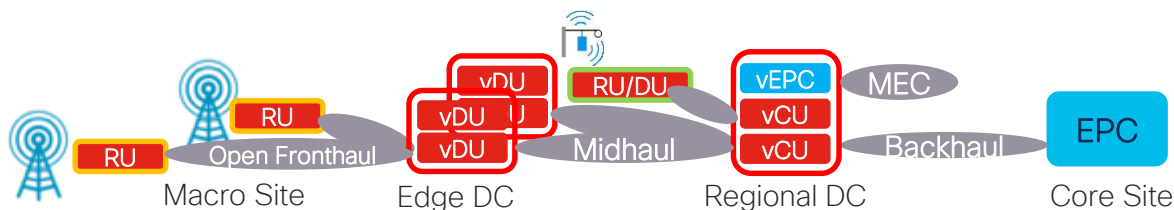
CRAN – Centralised RAN



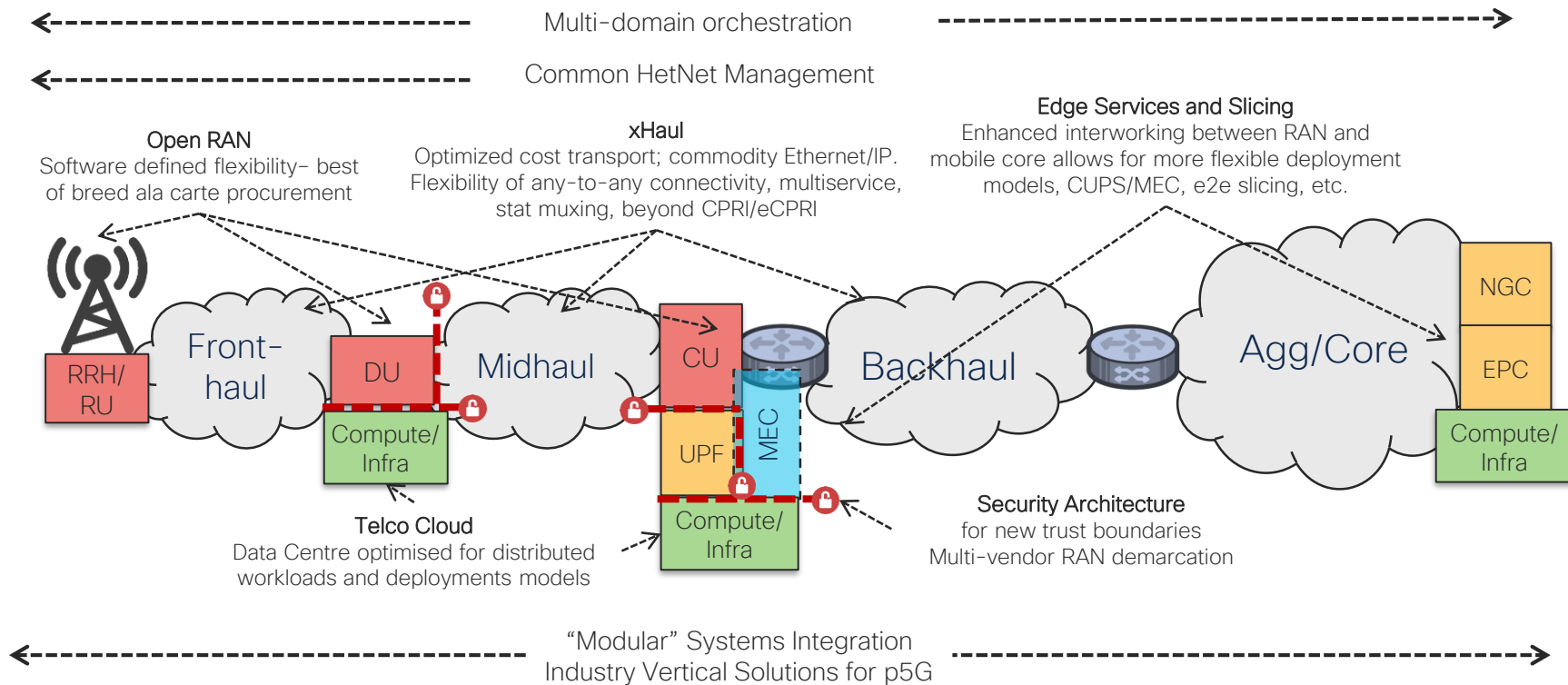
VRAN – Virtualised RAN



ORAN – Open vRAN



Value of an Open Virtualized RAN Ecosystem

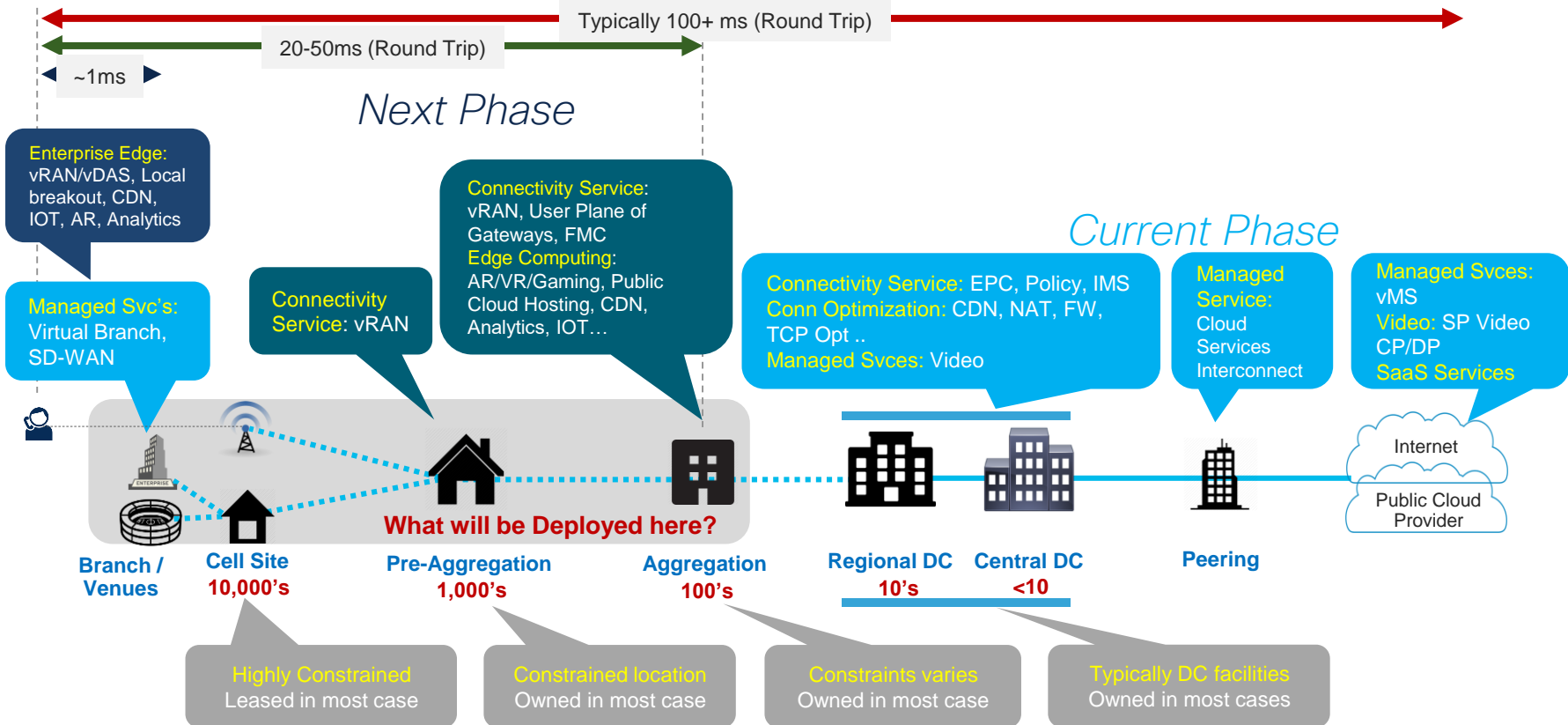


Distributed Network Cloud



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Network Cloud – The Journey to the Edge



Summary

- Real 5G is coming this year, for Service Providers and Enterprises
- 5G foundations bring together technologies; 5G New Radio, NFV, SDN, Automation, MEC
- Network Architecture convergence for Service Providers and Enterprises
- Open vRAN opens up diverse access requirements
- Distributed Network Cloud journey to Edge services



Thank you





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