진화하는 코어 네트워크 기술

조인숙 실장

Networked Society Day 2017

AGENDA

1

5G 비전 & 아키텍쳐

2

네트워크슬라이싱

3

분산형클라우드

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5G AND THE NETWORKED SOCIETY

People | Society

- Improved MBB experience everywhere
- Increased safety
- Increased efficiency

Telecom Industry

- New opportunities
- New strategic roles
- Flexible, scalable, future-proof network

Industry

- Industry transformation
- Increased safety
- Increased flexibility
- Reduced cost

4G mobile broadband today

MBB

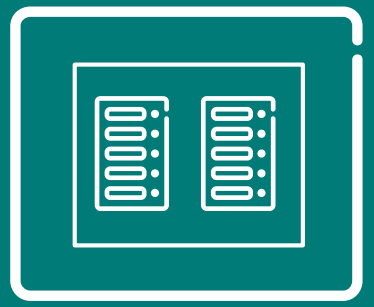
5G systems tomorrow

CORE EVOLUTION TO 5G

Integrated nodes

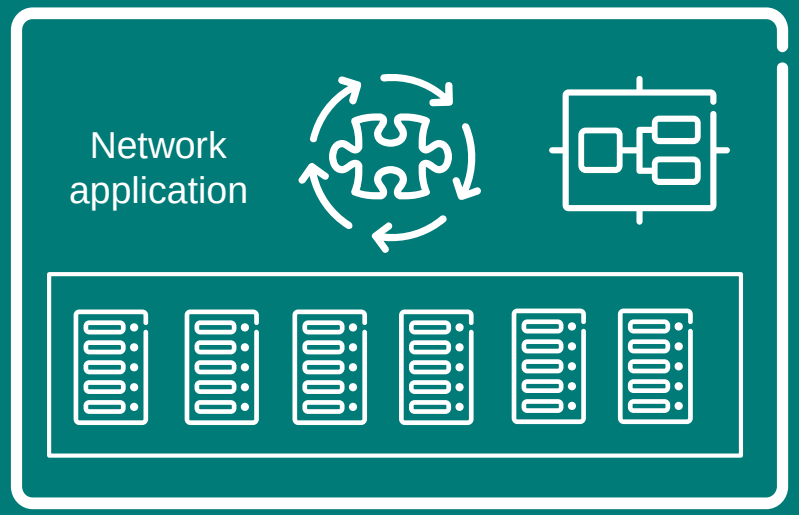
- Dedicated HW/SW
- Static capacity
- Element management

Virtualized deployment



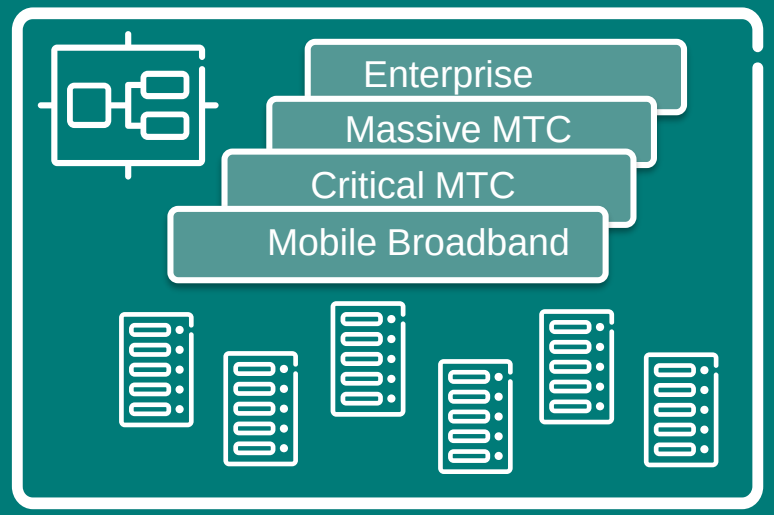
- COTS server hardware
- Manual life-cycle management
- VNF management

Cloud deployment



- Software defined infrastructure
- Orchestrated applications and network services
- Automated life-cycle management
- Cloud optimized performance

5G Core



- Distributed cloud infrastructure
- Network slice orchestration
- Cloud optimized applications
- 5G core architecture

5G CONCEPTS AND PRINCIPLES

5G

Common 5G management

- Orchestration
- Network management
- Analytics

Common 5G core functionality

Flexible deployment of network functions

Service enablers and optimizations

Common functional toolbox

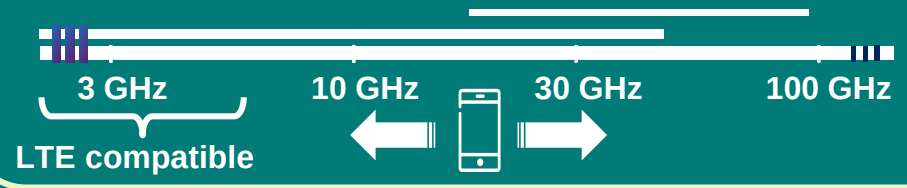
Utilize NFV and SDN, network programmability

Common 5G transport

- Fronthaul
- Backhaul
- Aggregation

5G radio access

Evolved EUTRA + NR



Wi-Fi access

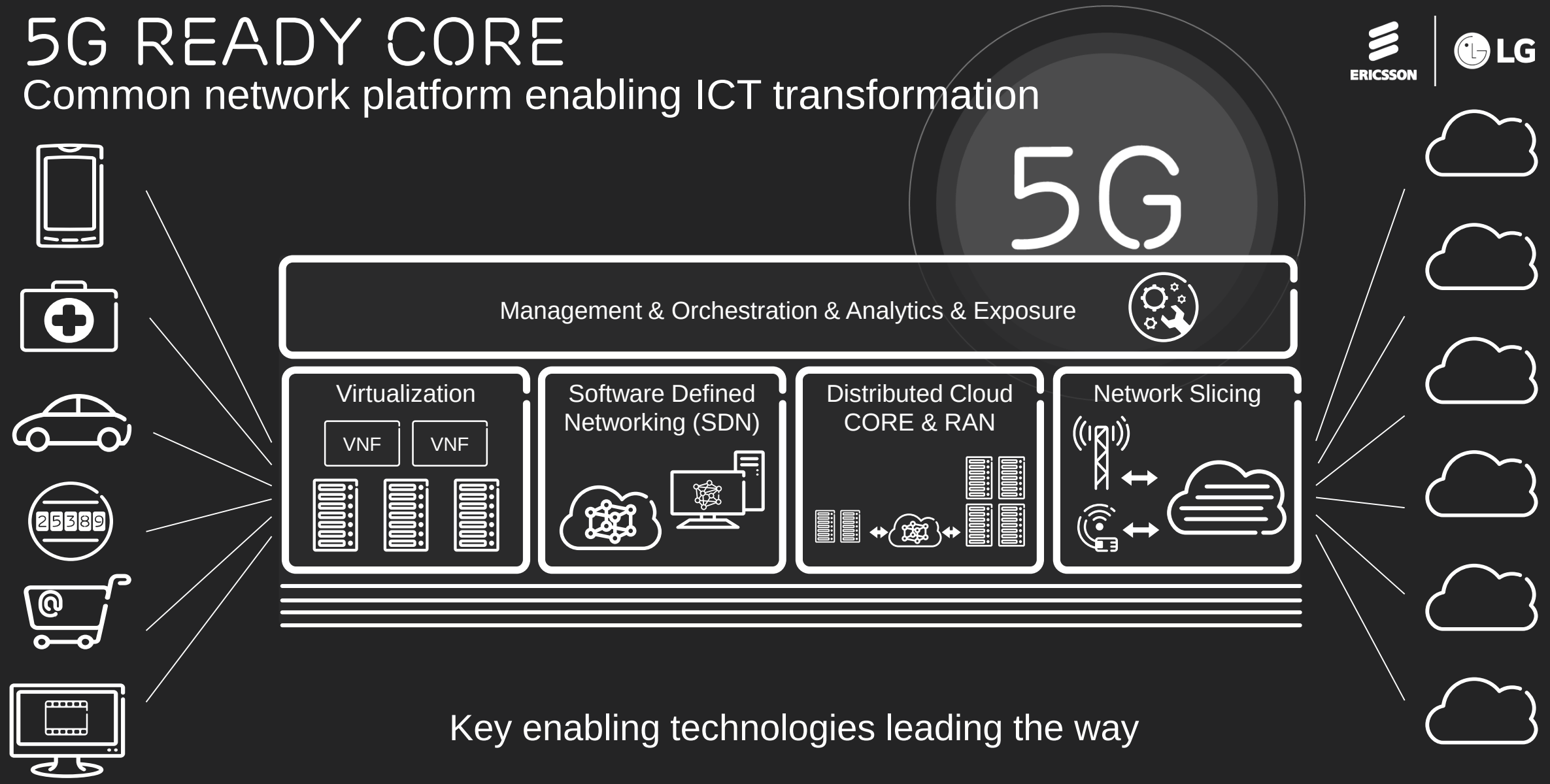
Fixed access

4G

2G/3G

5G READY CORE

Common network platform enabling ICT transformation

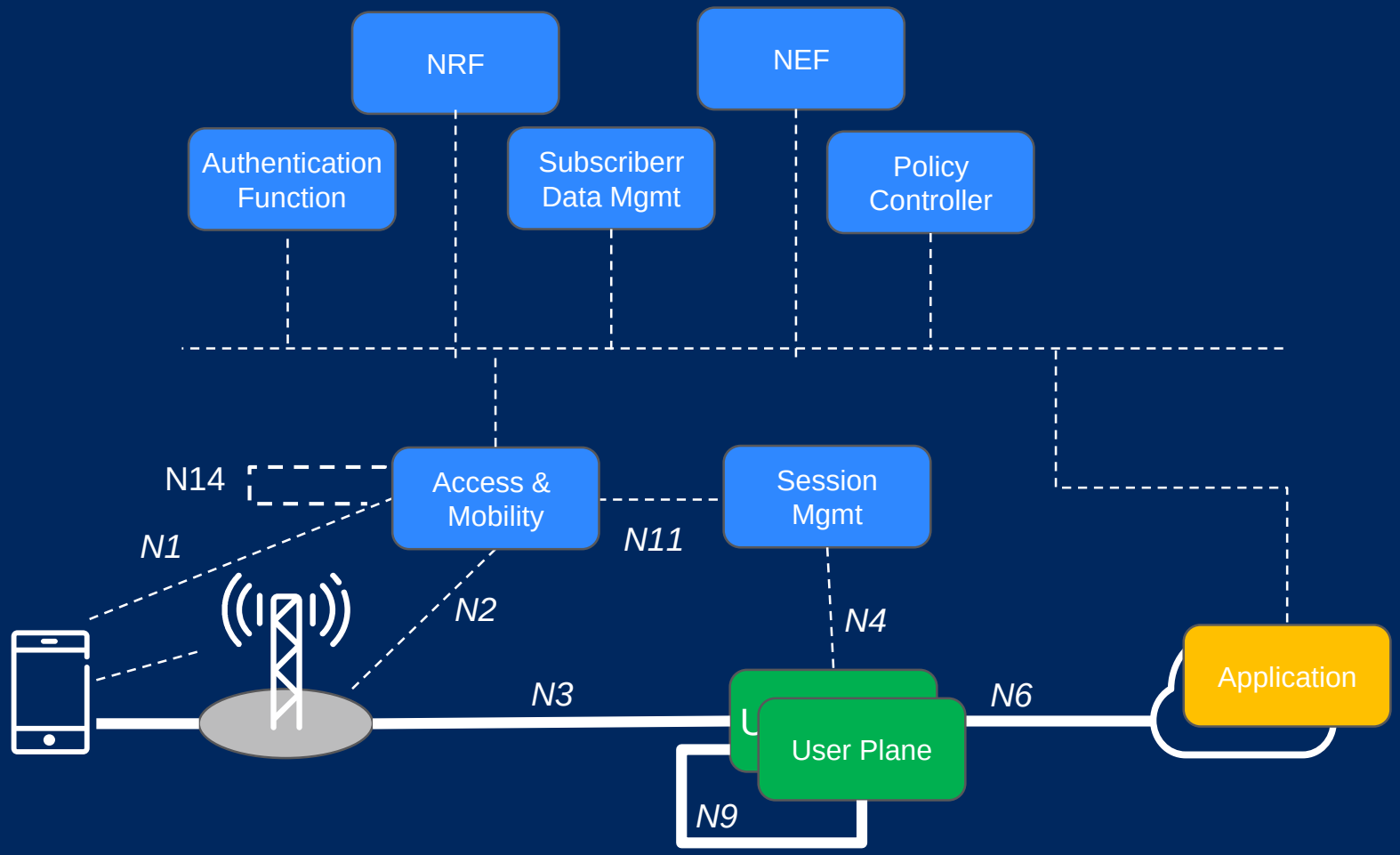


Key enabling technologies leading the way

5G NG CORE ARCHITECTURE

Potential benefits:

- Multiple services over multiple slices through service based architecture(SBA)
- Improved QoS concept
- Mobility on Demand concept
- Preparing for non-3GPP access integration



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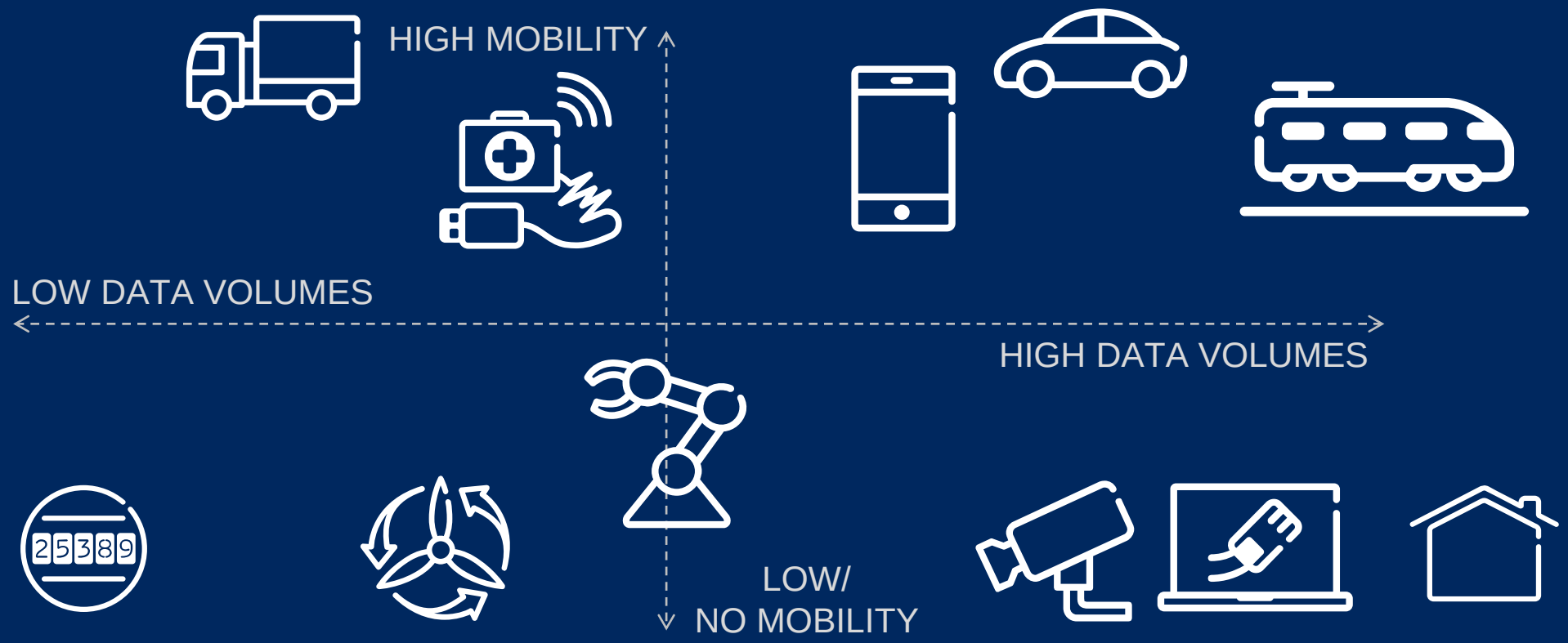
NETWORK SLICING THE BASIS
LARGE SPAN OF REQUIREMENTS AND CUSTOMER SEGMENTS

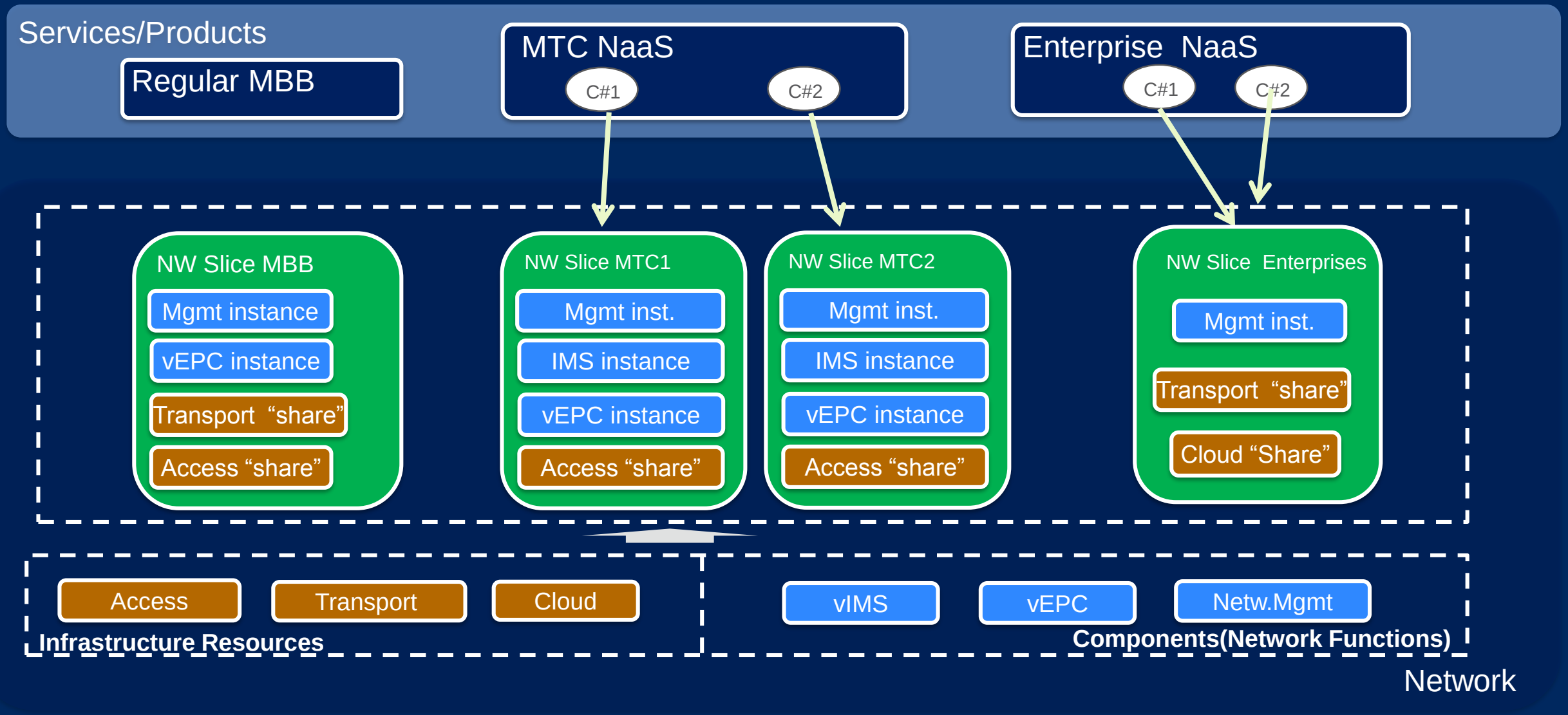
Operational Drivers:

- Improved TTM/TTC
- Reduced risk
- Flexibility/Agility
- Separation of concerns
- Per service/customer optimization



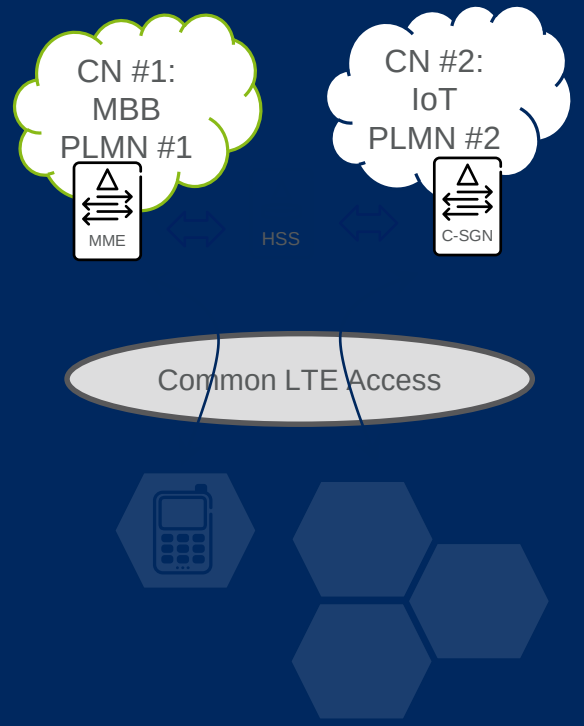
10-100X	10 years	5X	10-100X	1000X
Connected Devices	Battery Life	Lower Latency	End-user Data Rates	Mobile Data Volumes

NETWORK SLICES
FLEXIBILITY IN SEVERAL DIMENSIONS



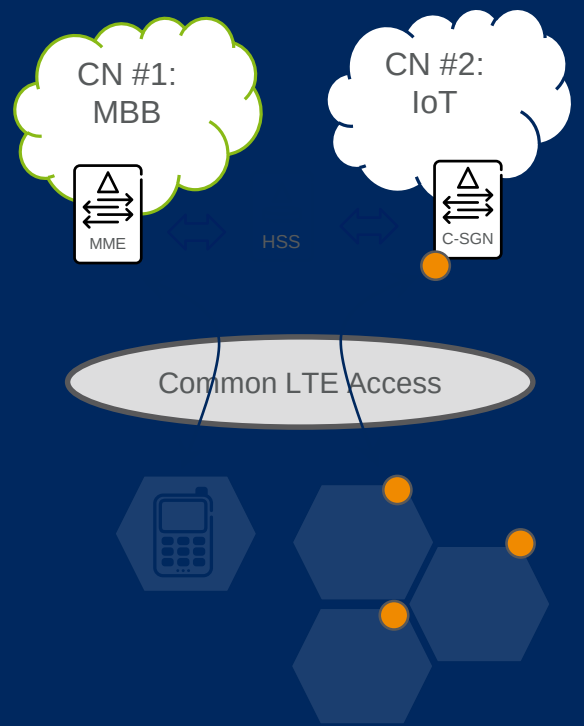
CORE NETWORK SELECTION OPTIONS

MOCN



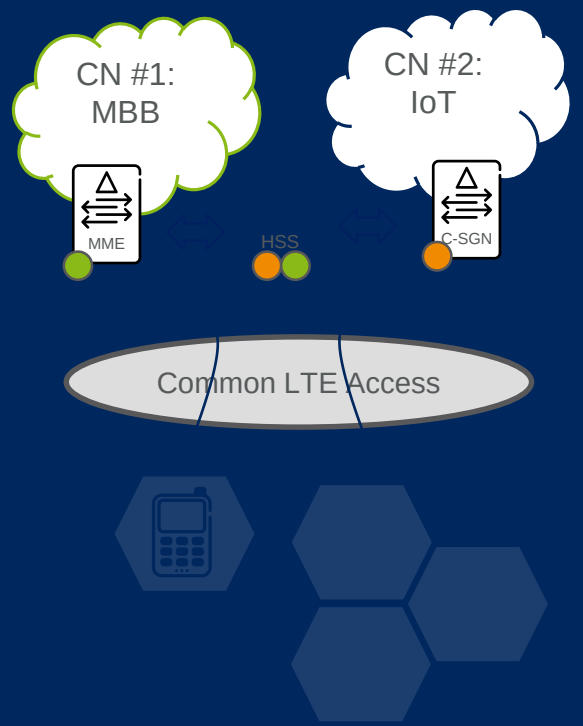
- CN selection by RAN using PLMN ID's
- Requires UE, RAN and Core support
- All device types supported

RAN based CN selection



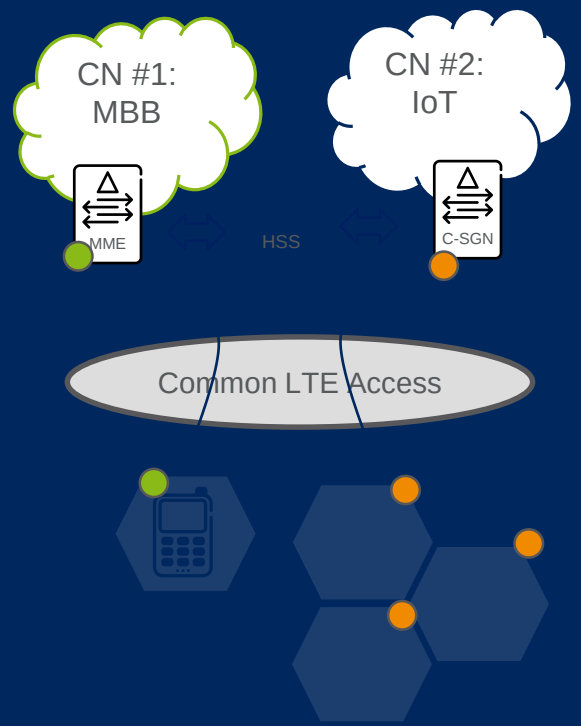
- CN selection by RAN using device info
- Simple - requires RAN support only
- Cat-NB and -M1 supported
- Ericsson-unique solution

DECOR



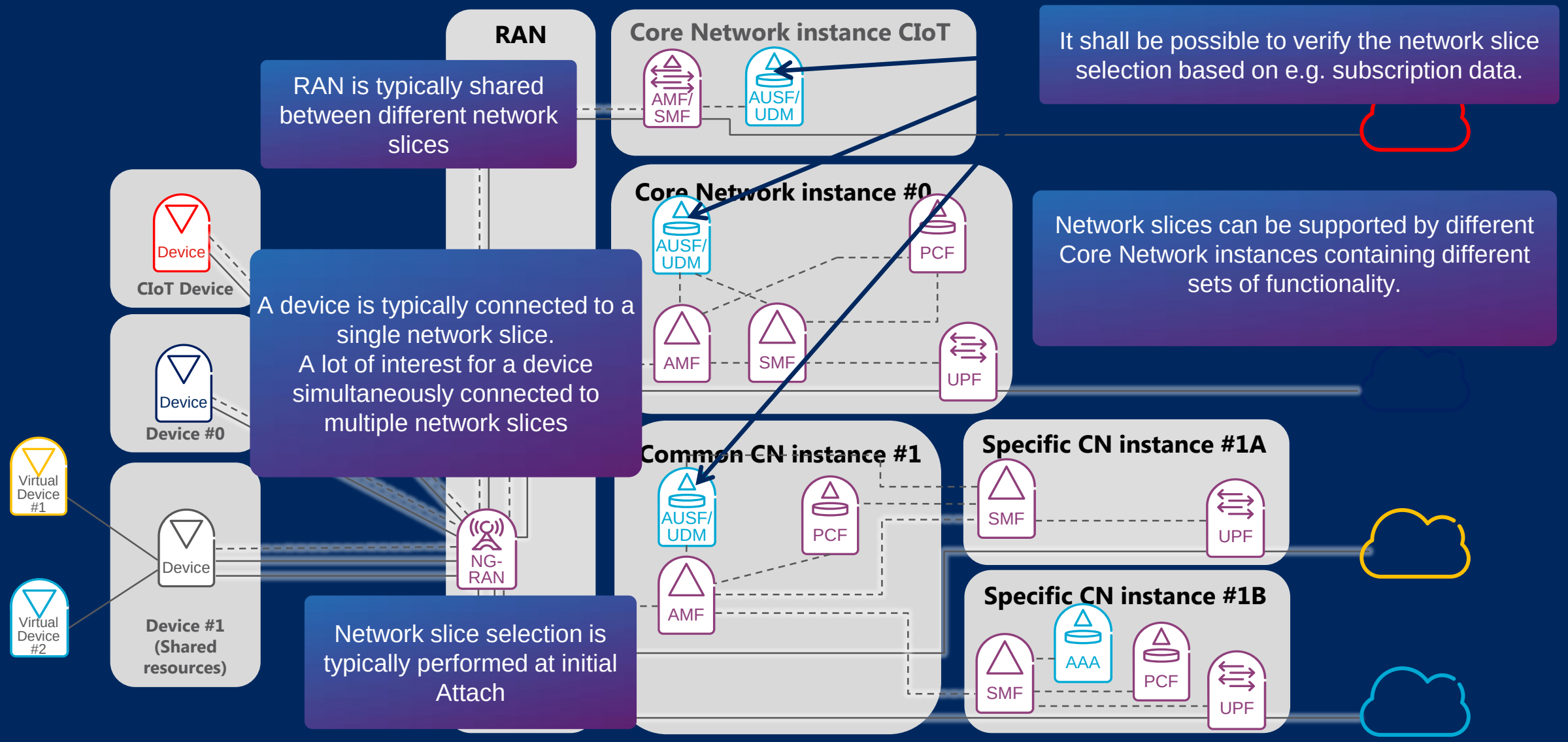
- CN selection using HSS
- Requires CN and RAN support
- All device types supported

eDECOR



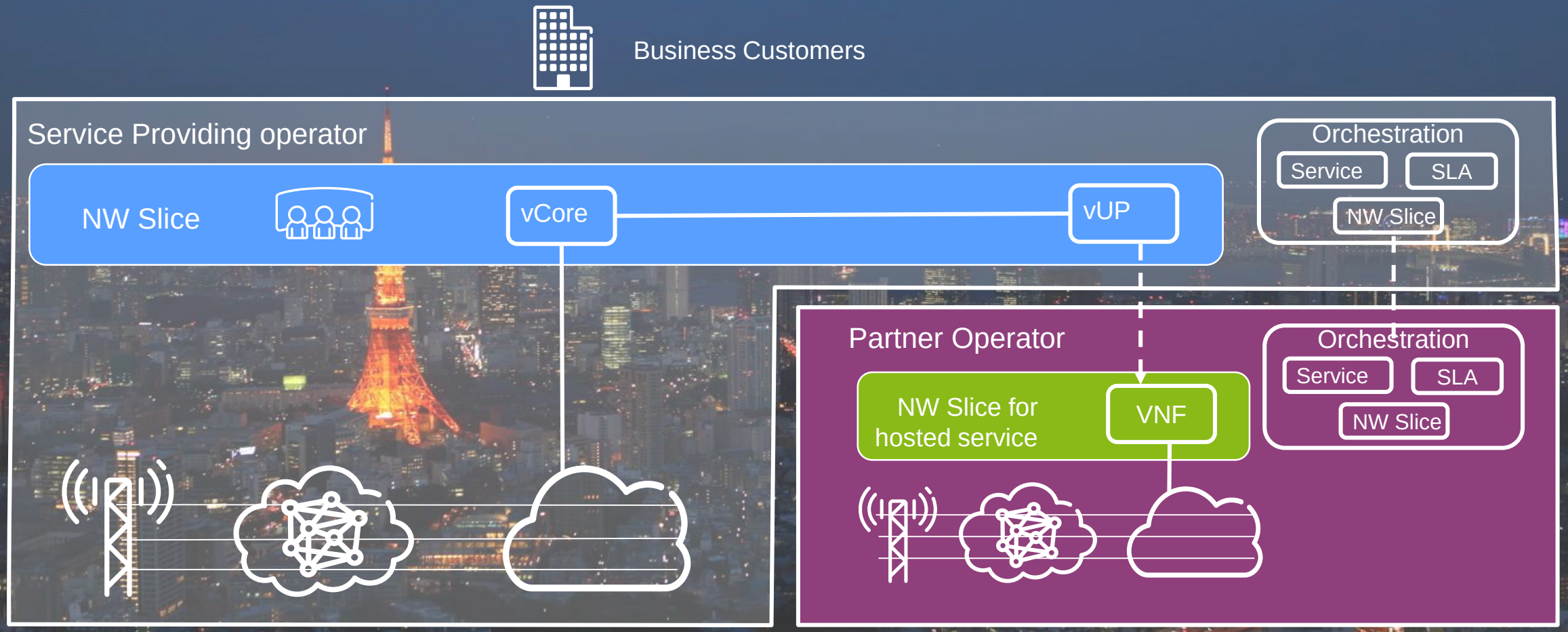
- CN selection by RAN using:
  - Configured CN in UE
- Requires UE and RAN support
- Enhancement of DECOR - backward compatible

NETWORK SLICING
CORE NETWORK PERSPECTIVE



FEDERATED NETWORK SLICING
GLOBAL ROAMING USE CASE

Enable seamless service experience and service control



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5G TO ADDRESS GROWTH, LATENCY AND SECURITY

Insights from interviews with 29 operators globally

What's driving your choice of use cases for 5G?

98%
answered
Growth & Revenue

Creating value in new use cases

Which key technical areas of 5G are you focusing on?

92%
answered
Latency

Key for many mission critical use cases

What are your top challenges for 5G readiness?

78%
answered
Data Security & Privacy

5G for privacy – keep data onsite

Source: Ericsson 5G readiness study, 2016

DISTRIBUTED WORKLOADS – CRITICAL FOR NEW USE CASES

4G

5G

Stop a self-driving car faster

Drone Control & Communication

Augmented/ Virtual Reality

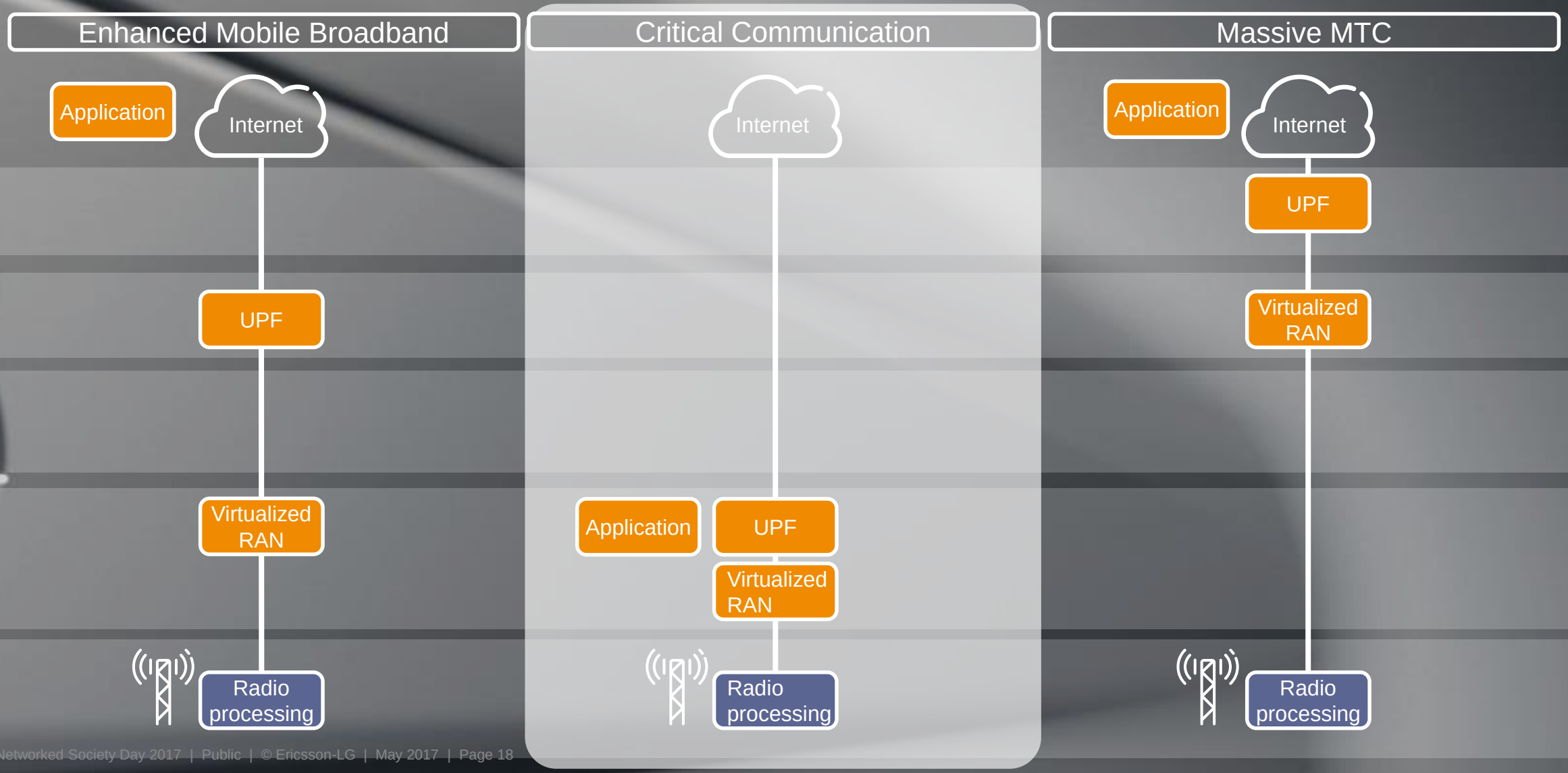
Self-Driving Bus in Stockholm

Full-length HD movie in seconds

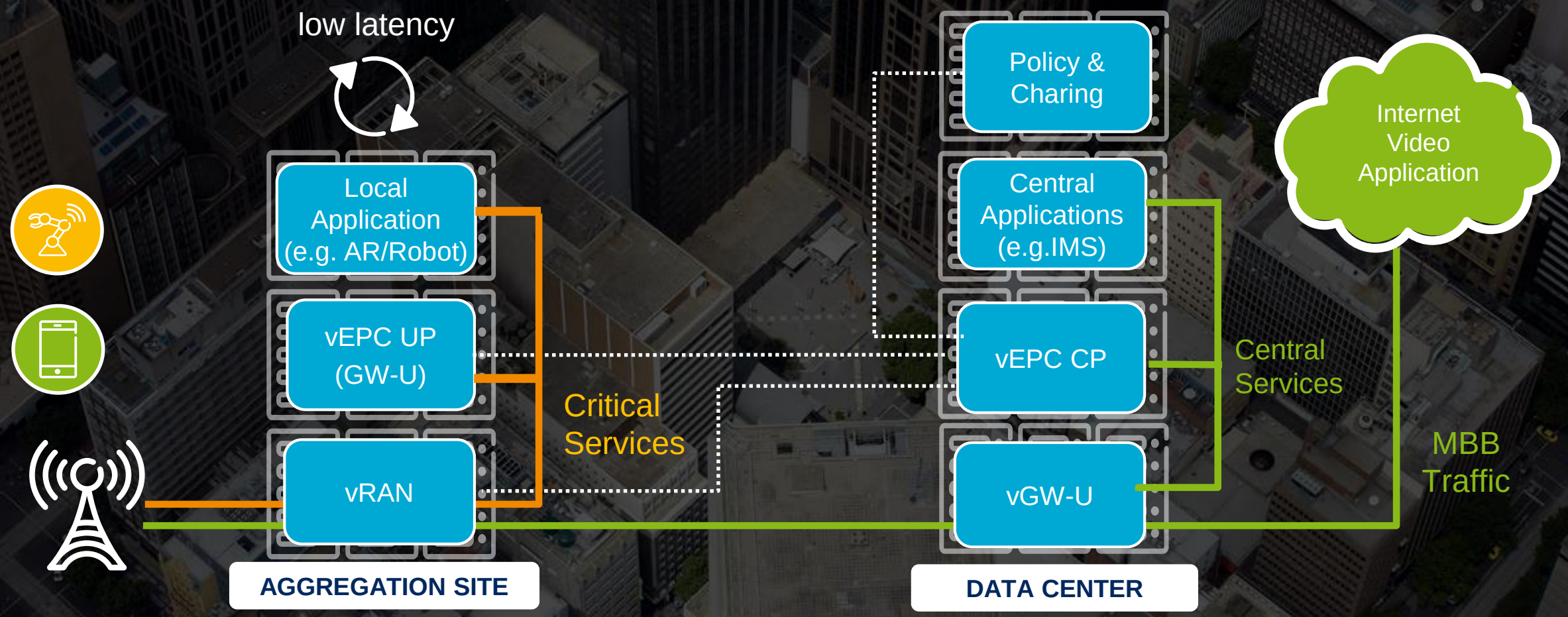
Remotely Operate Robots

MOVE WORKLOAD CLOSER TO THE USER

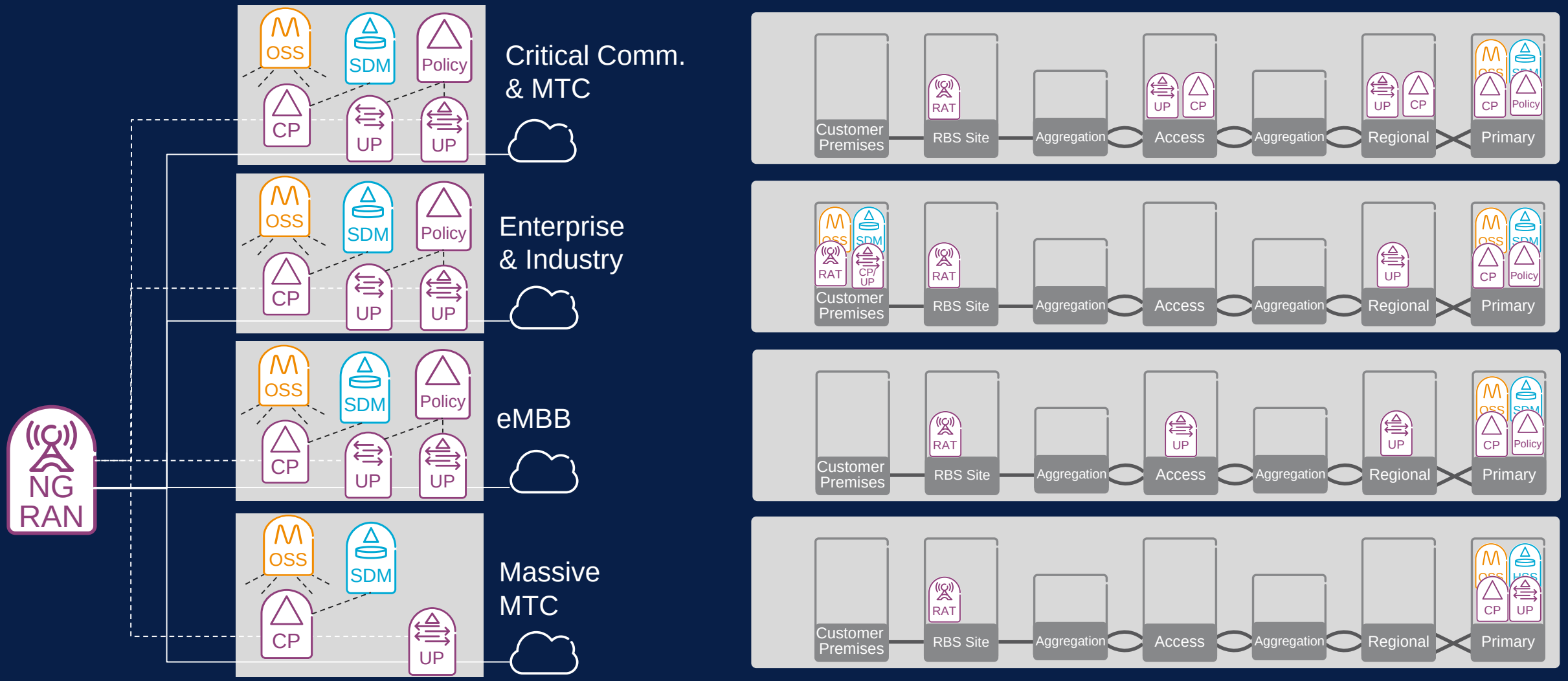
Supporting Critical Communication



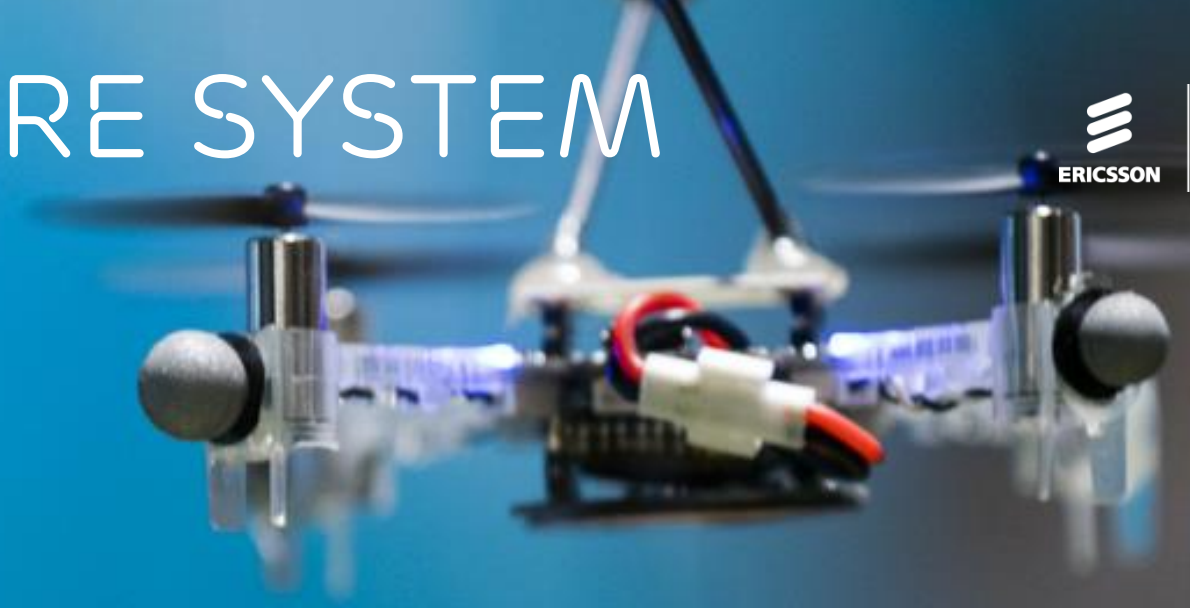
5G SERVICE ENABLERS
DISTRIBUTED CLOUD



NETWORK SLICING W/ DISTRIBUTED CLOUD



ERICSSON 5G CORE SYSTEM
KEY MESSAGES



- We are ready for the first 5G services today in Massive IoT
- The 5G is complete E2E with NFV – SDN – Orchestration – Services
- We are working with leading operators with E2E Core and NR radio trials
- Ericsson is the best option for The first movers to 5G

ERICSSON
LG