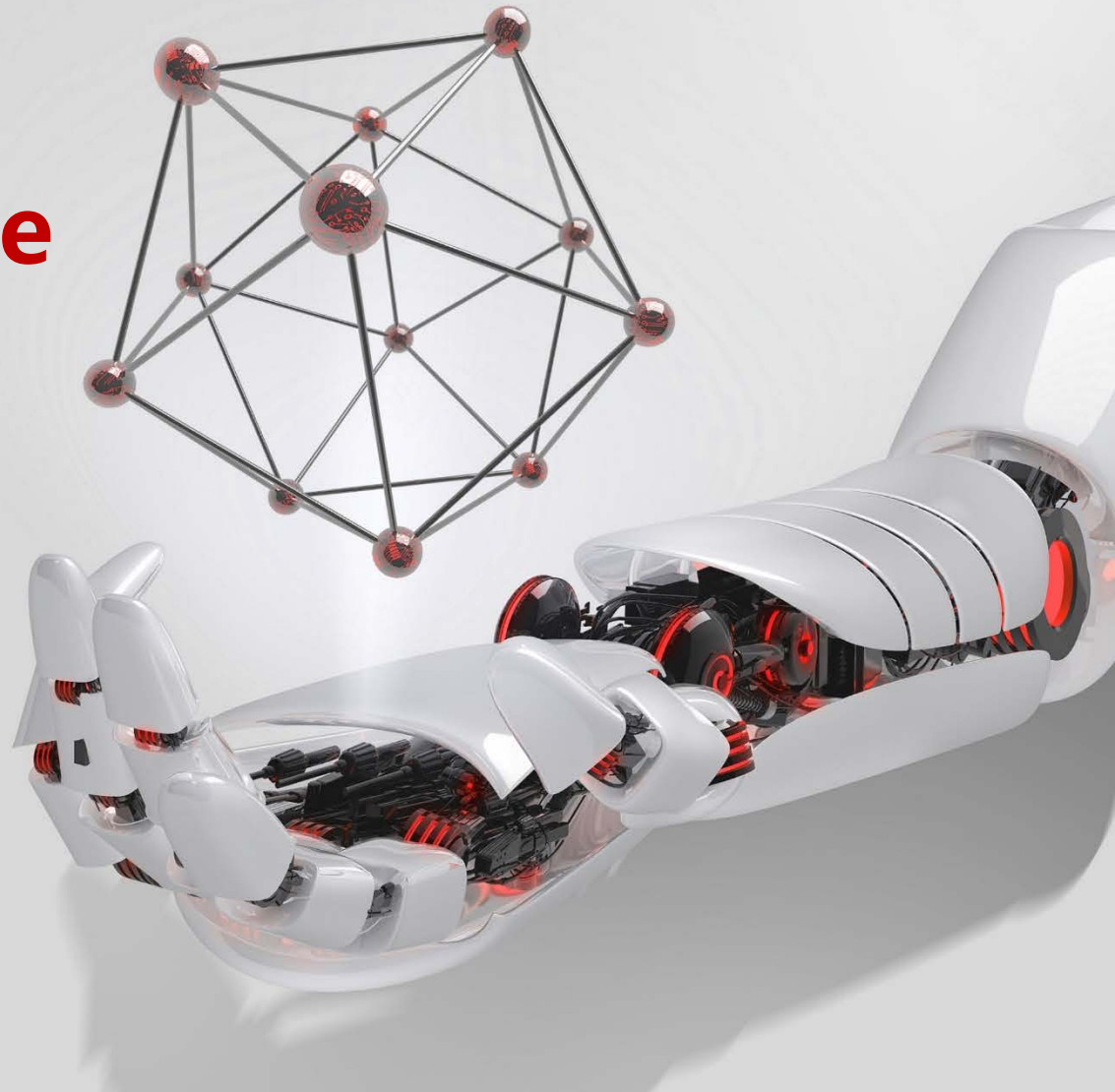


# Huawei Mobile Infrastructure Sharing Solutions for BEREC Workshop

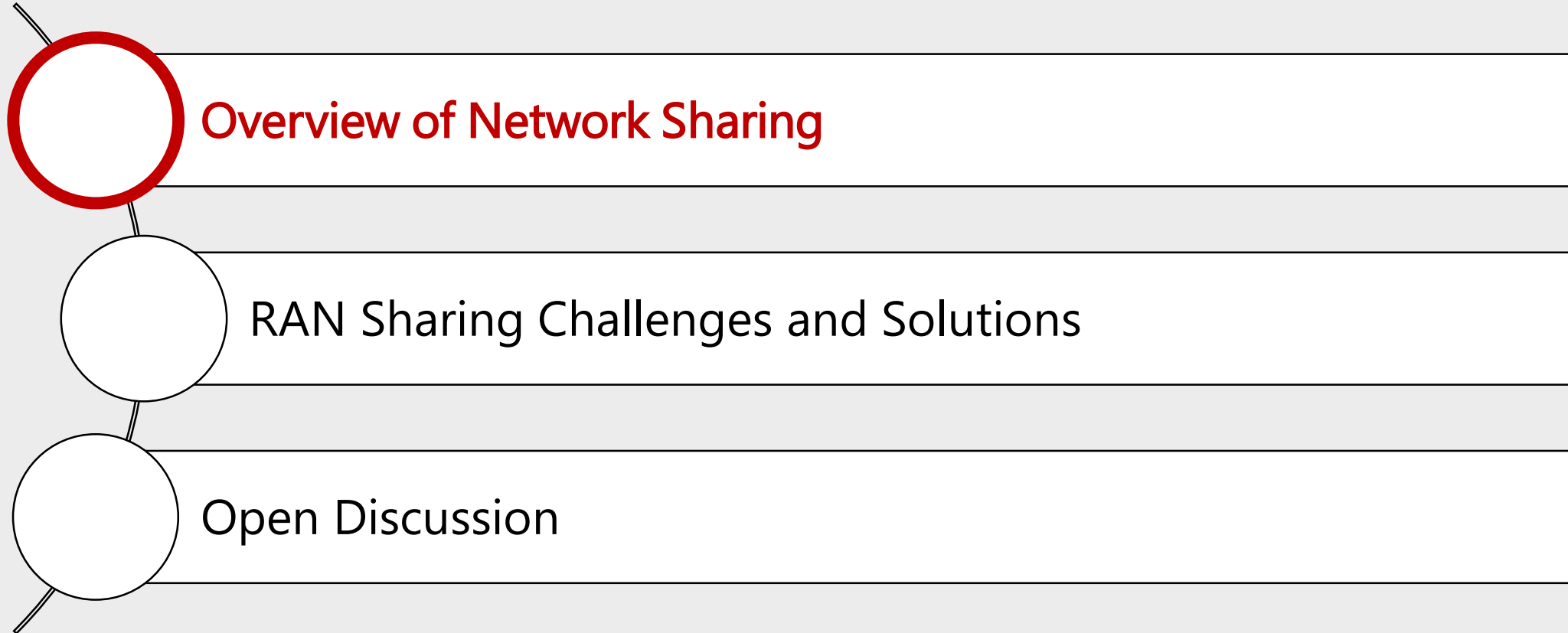
Dr. Hui Cao  
Head of Strategy and Policy  
Huawei EU



Security Level:

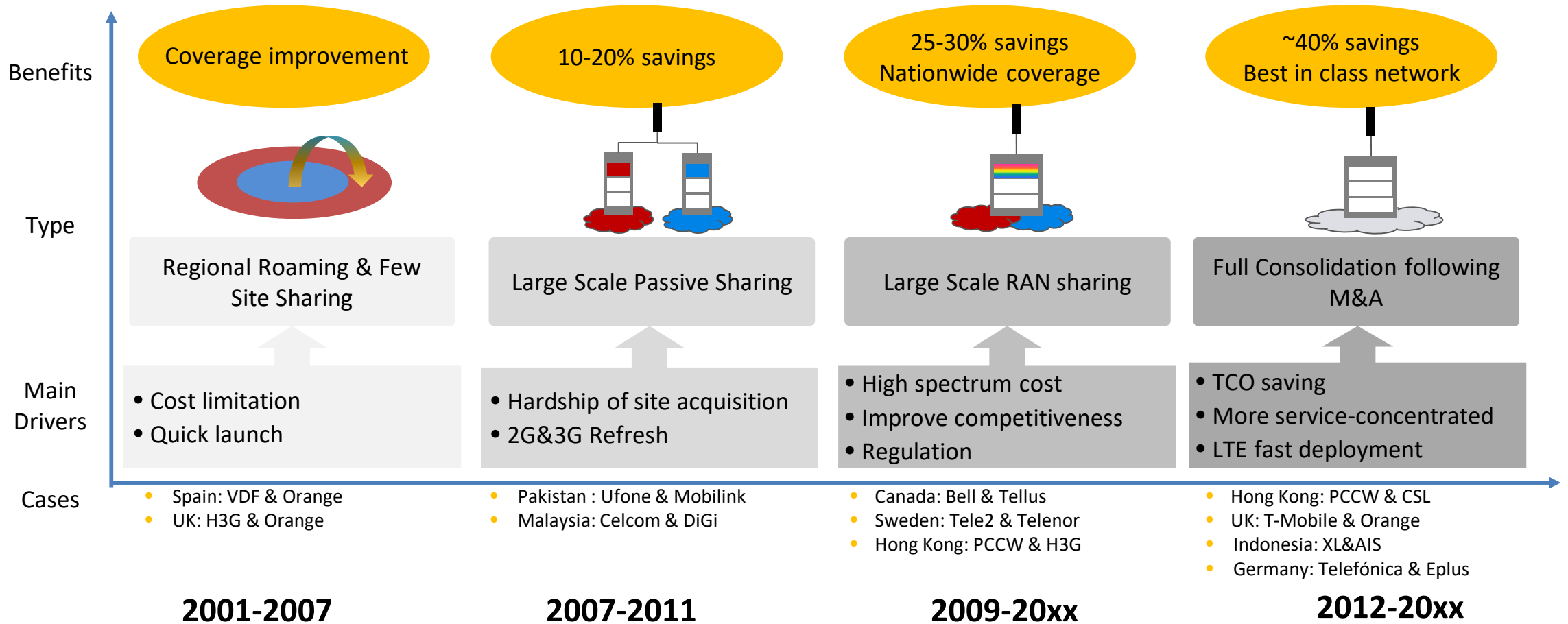


# Content

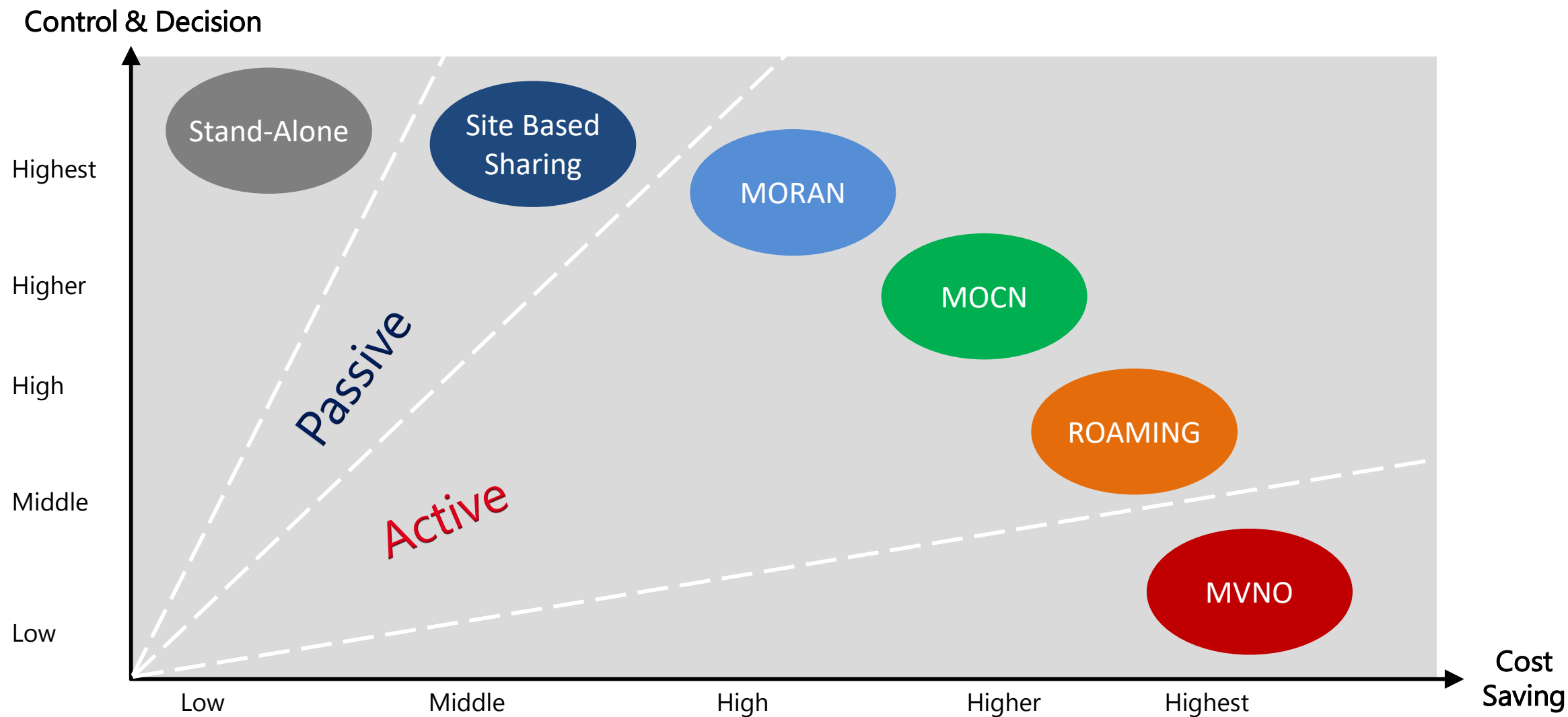


# Network Sharing – Operator Business Drivers

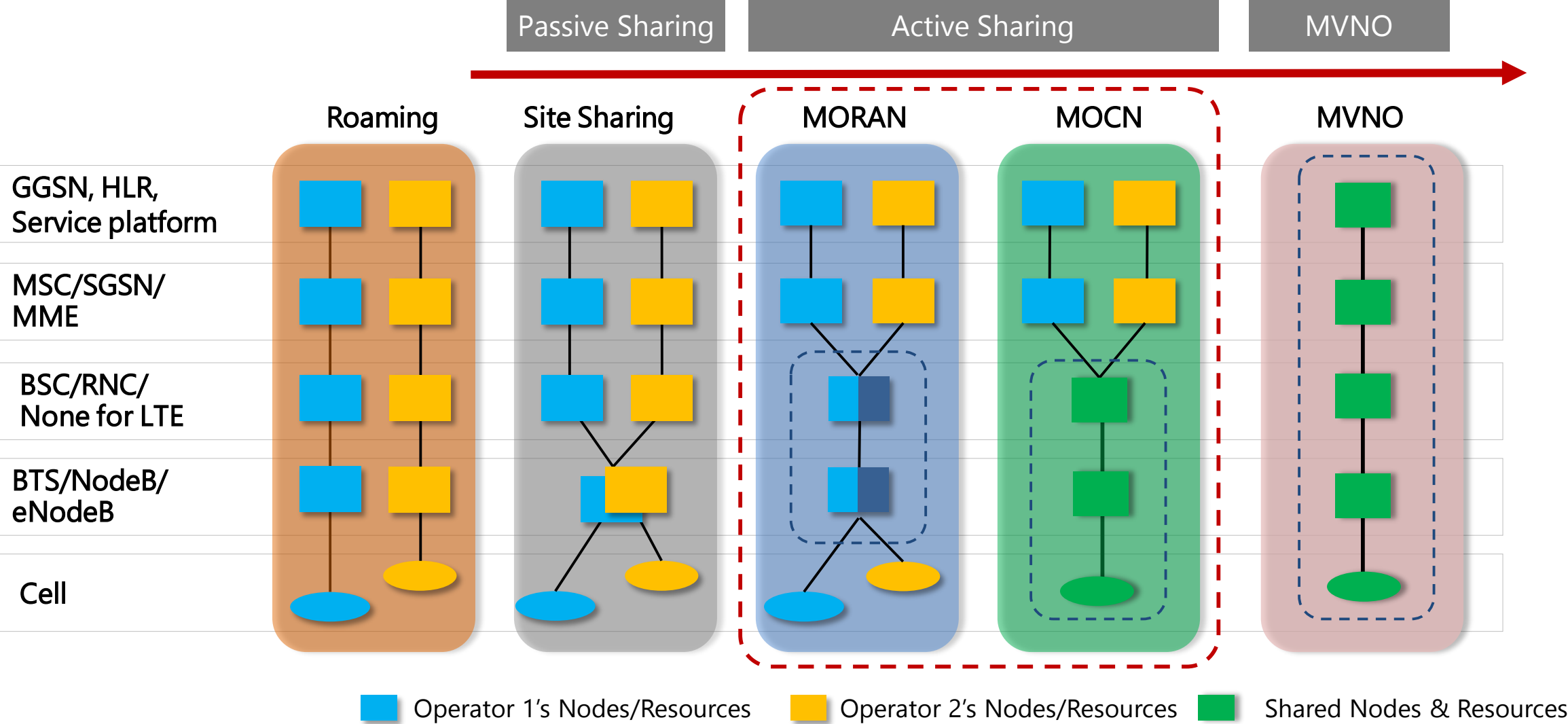
## Historical trends and examples



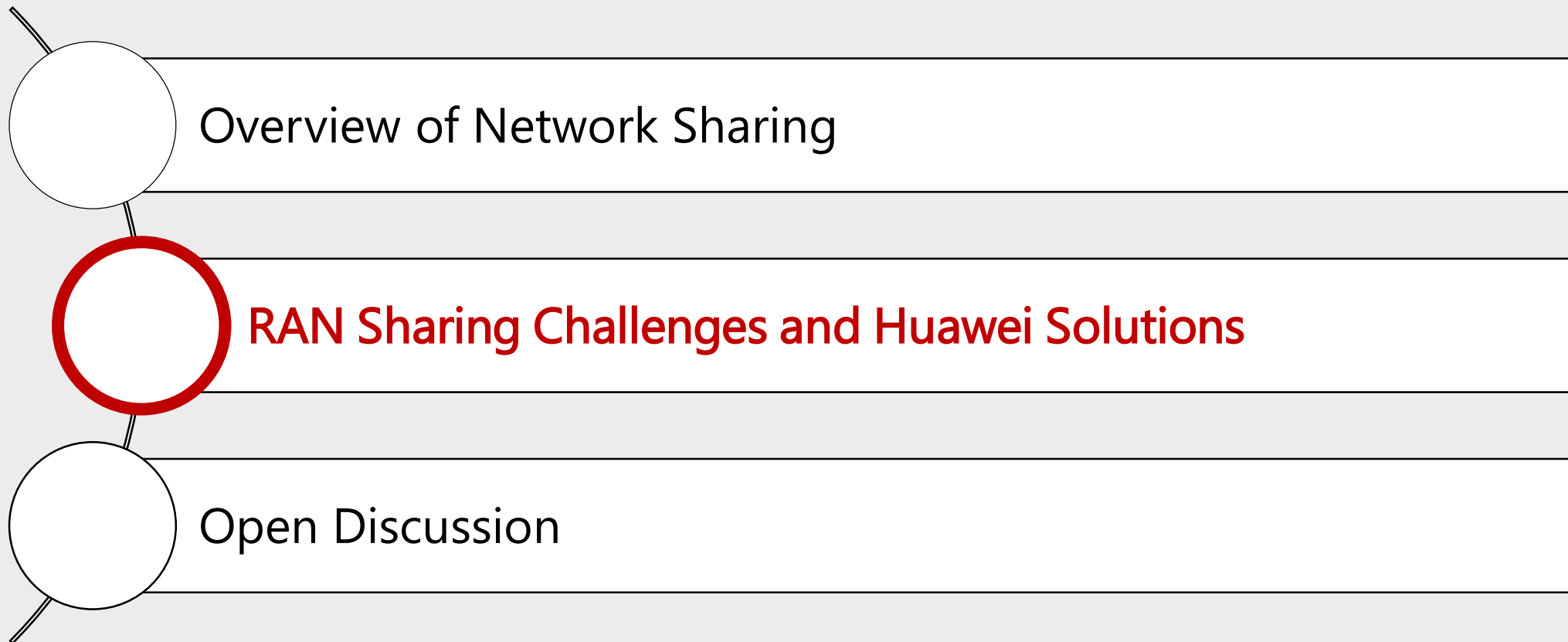
# Network Sharing Approaches



# Typical Network Models of Network Sharing



# Content



# Challenges for Network Sharing

## Scalable Capability

- Wide RF bandwidth
- High output power

## Resource Sharing Fairness

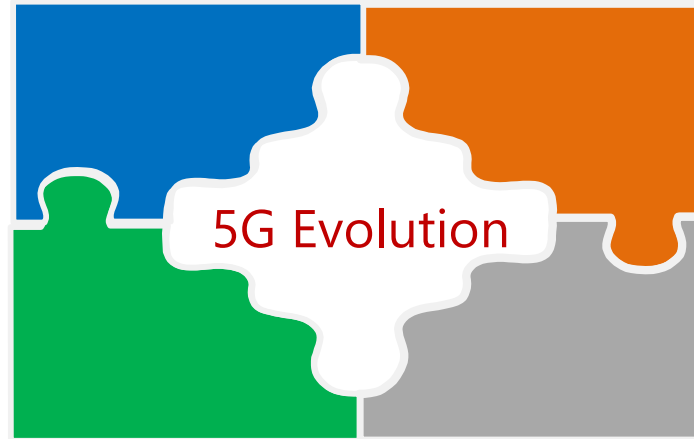
- Radio Resource fairness
- Capacity resources sharing
- Roaming user fairness

## Flexible independency

- Independent QoS Strategy
- Flexible transmission deployment scheme
- Independent O&M

## Expense split by usage

- Independent license control
- Independent PM guarantee the resource usage visualization



# Strong RAN Sharing Capability for Future Consolidation

Huawei

2× Wider Bandwidth

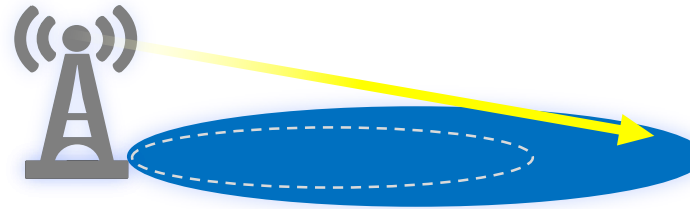
Operator1@100M

Operator2@100M

3.5GHz: Huawei support 200MHz in total

4\*80W

~15% Coverage  
Extension



600 ~ 1.000m (Urban)

One Box instead of 2



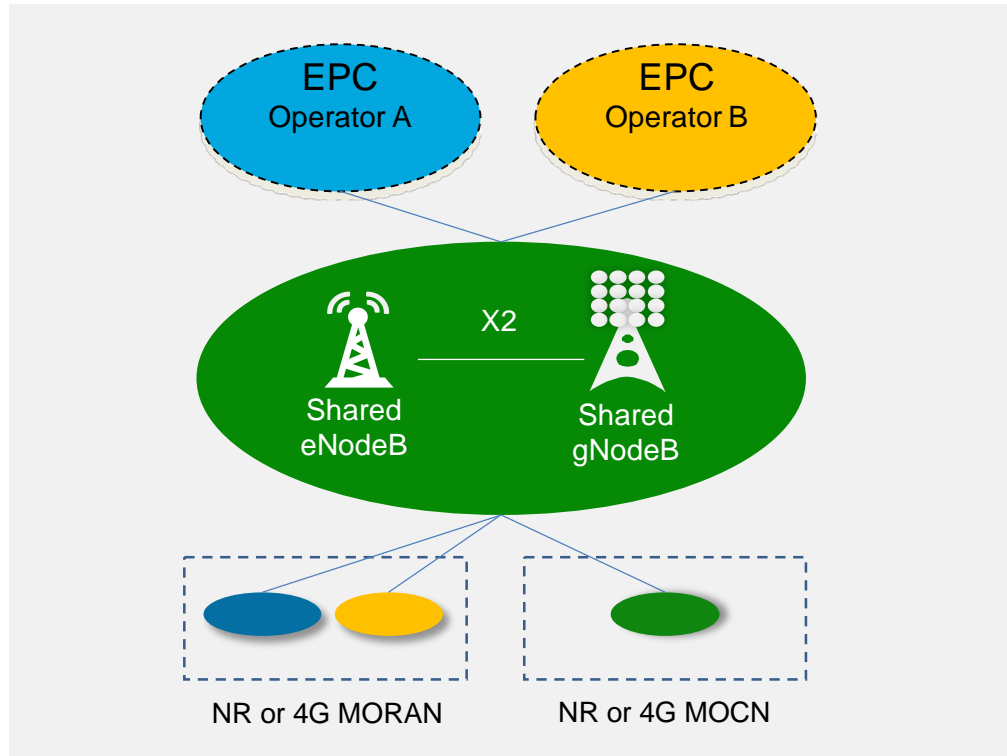
All-in-One Leading  
Multi-band

1800+2100M, 4T4R (5G ready)



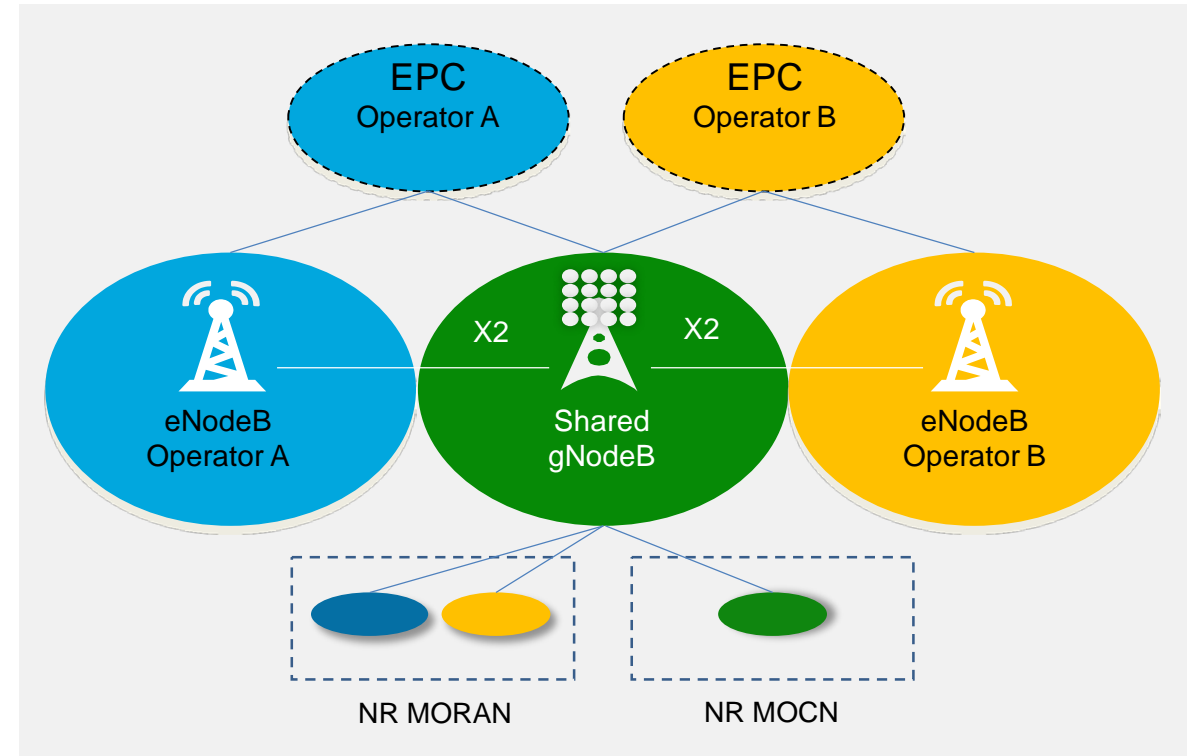
# 5G: RAN Sharing with NSA Mode

## NR & LTE Sharing Together



- NR&LTE Site belong to same Operator and Share to other Operators (Maximal 6 PLMNs)
- Support both MOCN and MORAN

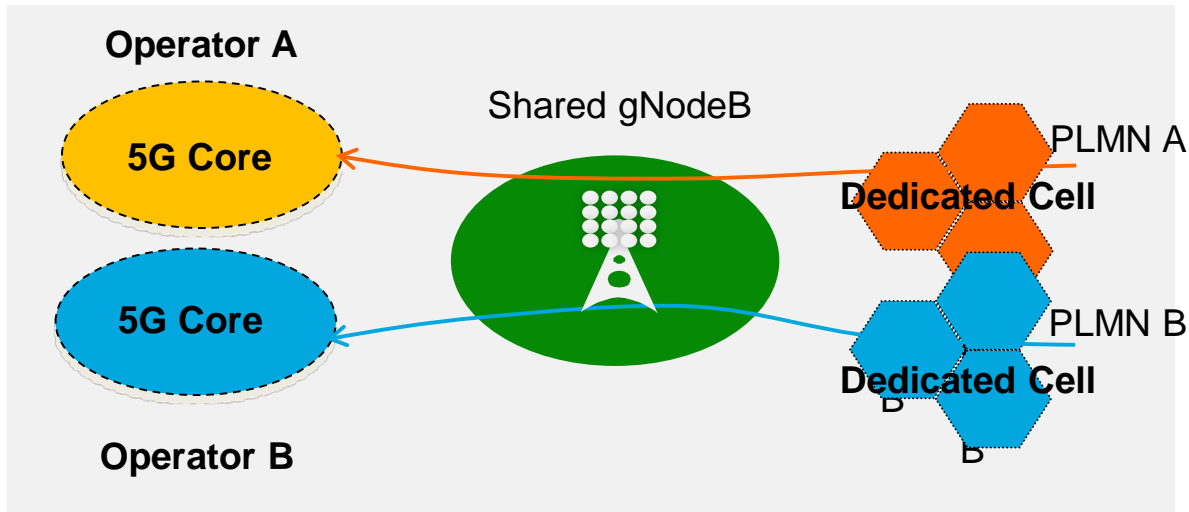
## NR Sharing Only



- Shared NR (Maximal 6 PLMNs) + independent LTE
- Same NSA option for Different Operators
- X2 interworking in Multi-Vendor Scenario
- Support both MOCN and MORAN

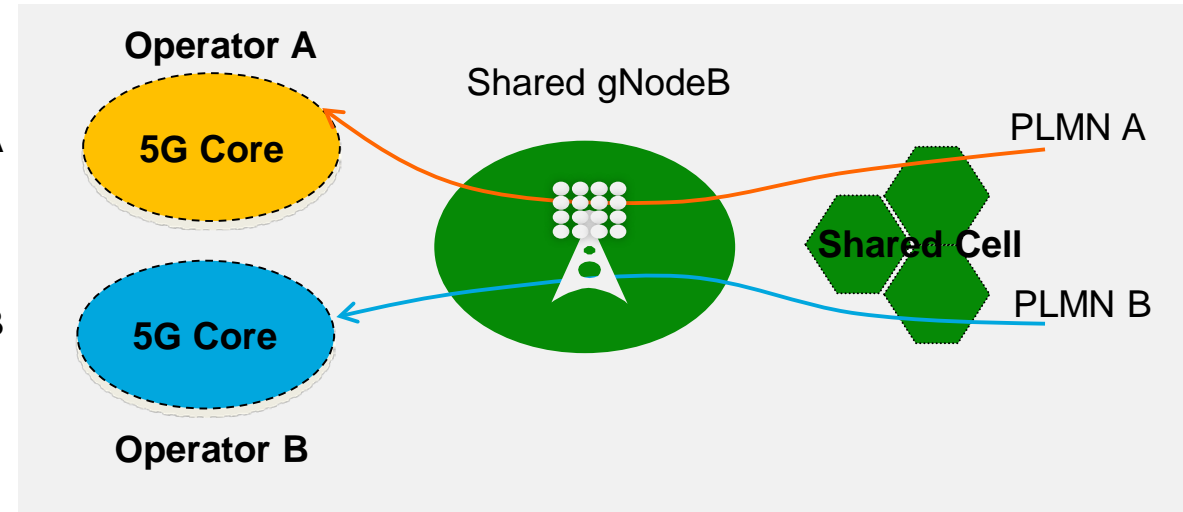
# 5G: RAN Sharing with SA Mode

MORAN



- Independent Spectrum for Dedicated Cells
- Low Spectrum Usage Ratio
- Independent Configuration and feature Policy for Operators
- Shared RAN Hardware

MOCN



- Shared Spectrum for each Cell
- High Spectrum Usage Ratio
- Coupled Configuration and feature Policy for Operators
- Shared RAN Hardware

# China Case: Implementation Guidelines on Promoting Telecom Infrastructure Co-construction and Sharing

Category	Scenario	Requirements
Tower and indoor DAS	<ul style="list-style-type: none"> <li>MNO towers (including lamp pole sites, etc.)</li> <li>base stations</li> <li>Public transportation (metro, railway, highway, airport, etc)</li> <li>Indoor distribution system for key buildings (large stadiums, commercial buildings and governmental facilities.)</li> </ul>	<ol style="list-style-type: none"> <li>In principle, MNOs are not allowed to build the said facilities except for base stations.</li> <li>The tower company integrates resources, preferentially reconstructs and uses existing facilities, and can be shared without new construction.</li> <li>After being coordinated by tower company, the indoor DAS that is needed by one MNO can be constructed by MNO.</li> </ol>
Broadband access network facilities	<ul style="list-style-type: none"> <li>New residential area and buildings</li> <li>New commercial and office buildings</li> <li>Legacy residential areas/buildings, commercial and office buildings</li> </ul>	<ol style="list-style-type: none"> <li>New residential buildings are implemented according to two national standards: Fiber to the home (FTTH).</li> <li>The new commercial building is implemented according to national standards such as the Engineering Design Specifications for the Integrated Cabling System.</li> <li>Optical fiber reconstruction of existing buildings, encouraging each construction entity to share resources such as cell pipes, drop fibers, and distribution facilities through resource swap and paid use.</li> </ol>
Transmission resources such as poles, ducts and pipes	<ul style="list-style-type: none"> <li>Poles, ducts and pipes</li> <li>Base station access transmission resources (including poles, pipes, and optical cables)</li> </ul>	<ol style="list-style-type: none"> <li>MNOs must strictly follow the existing co-construction and sharing procedures when constructing poles and pipes.</li> <li>MNOs who have transmission to base stations are mandatory to share resource.</li> <li>MNOs are encouraged to have cooperation with power/grid companies, and pilot the construction of shared power poles in some areas.</li> </ol>

Appraisal facilities	Sharing rate (not lower than)	Co-construction rate (not lower than)
Pole	70%	30%
Pipe	45%	40%
Indoor distributed system	45%	35%



# Open Discussion

# Thank you.

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每个组织，构建万物互联的智能世界。

Bring digital to every person, home, and  
organization for a fully connected,  
intelligent world.

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