

# 5G BROADCAST/MULTICAST – FUTURE OF CONTENT DISTRIBUTION

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COMPANY RESTRICTED

# AGENDA

- R&S future vision
- 5G BC/MC – New Business Verticals
- 5G BC/MC – Technical solutions with BSCC2.0
- Trials worldwide
- 5G BC/MC – MaaS

# CUSTOMER CHALLENGES MEET R&S FUTURE VISION

## BNO

- Change in customer behavior
- Linear TV is losing popularity against streaming services
- Smartphone/Tablets are gaining importance
- No possible access to portable devices



## MNO

- Exponential increase of Mobile video consumption
- Live events are very important
- Consumers desire premium content anytime-anywhere
- No Quality of Service guaranteed – Bad user experience

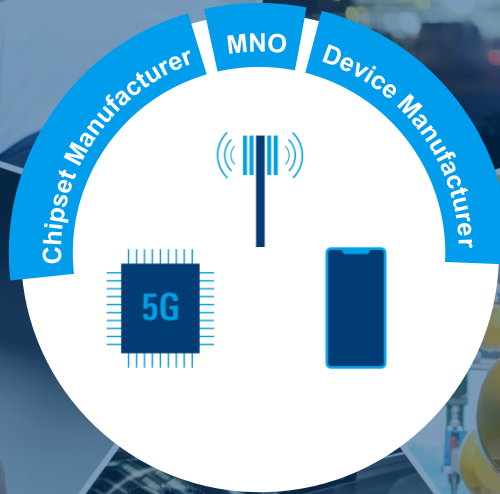


## R&S vision: Efficient Media Delivery – Anywhere, Anytime, to everybody

- Usage of Broadcast/Multicast approach together with Unicast → eMBB
- Deployment of overlay network with One-to-Many concept
- Deployment of SDL mixed mode and/or dedicated mode in existing Cellular sites
- Usage of frequency below 1GHz (i.e. UHF, SDL, etc.)
- Enable Multicast as a Service (MaaS) and profit from existing resources
- Making broadcasting infrastructure more dynamic
- Avoid infrastructure over-provisioning while reducing CAPEX & OPEX

Medical & Health

Internet of Things



Media & Entertainment

Automotive

Industrial Applications

# 5G BROADCAST/MULTICAST – NEW BUSINESS VERTICALS



Live Casting – Live big/popular events and linear content



OTA Multicast – SW/FM Updates, Centralized Configuration and Control



Vehicle Casting – M&E inside the vehicle, OTA updates, OTA real-time traffic



Venue Casting - Enhance in-venue atmosphere with Live Home Experience



Public Safety Multicast – Emergency alerts, and Weather warning systems



E-Sports – Group gaming Multicasting, All you can Broadcast



Live Commerce, Rural/Remote E-Learning

E-Agriculture, VoD with preloaded content on TV and mobile

# 5G BROADCAST/MULTICAST – TECHNICAL SOLUTIONS

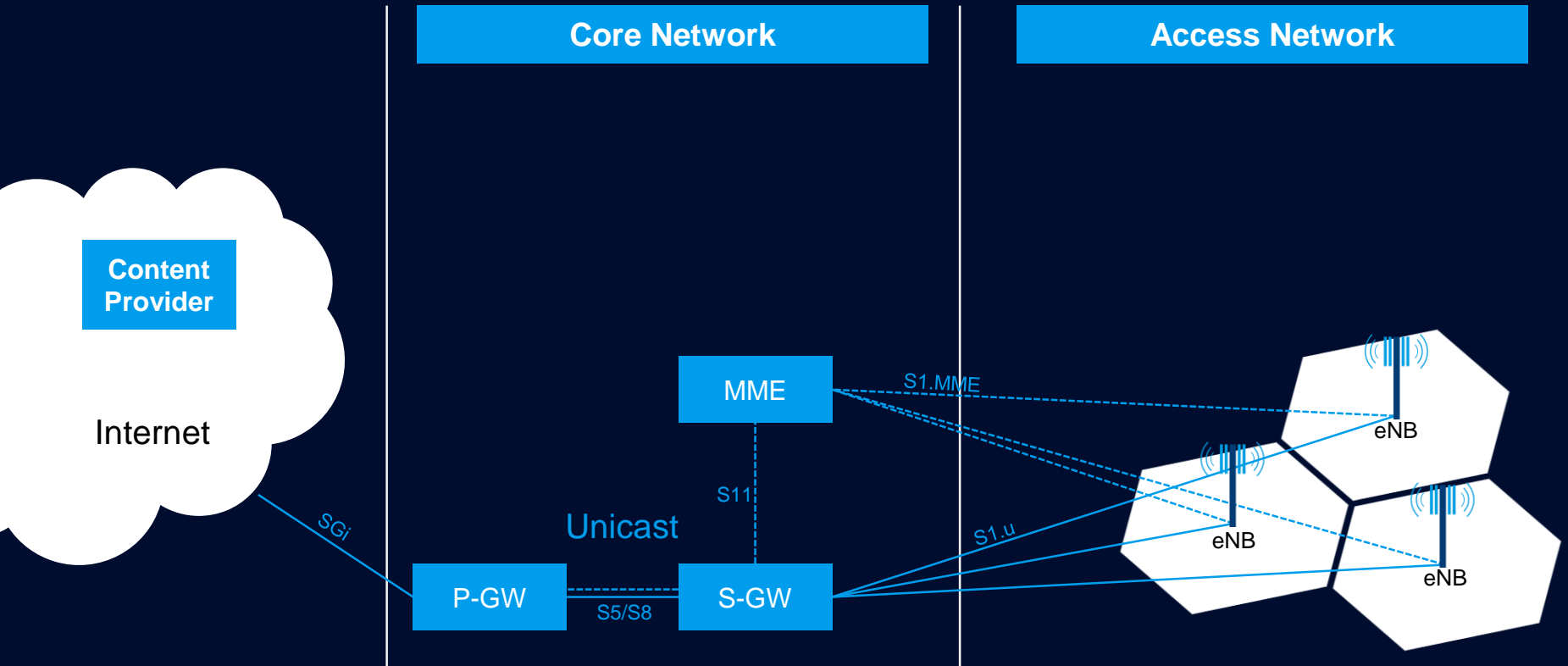


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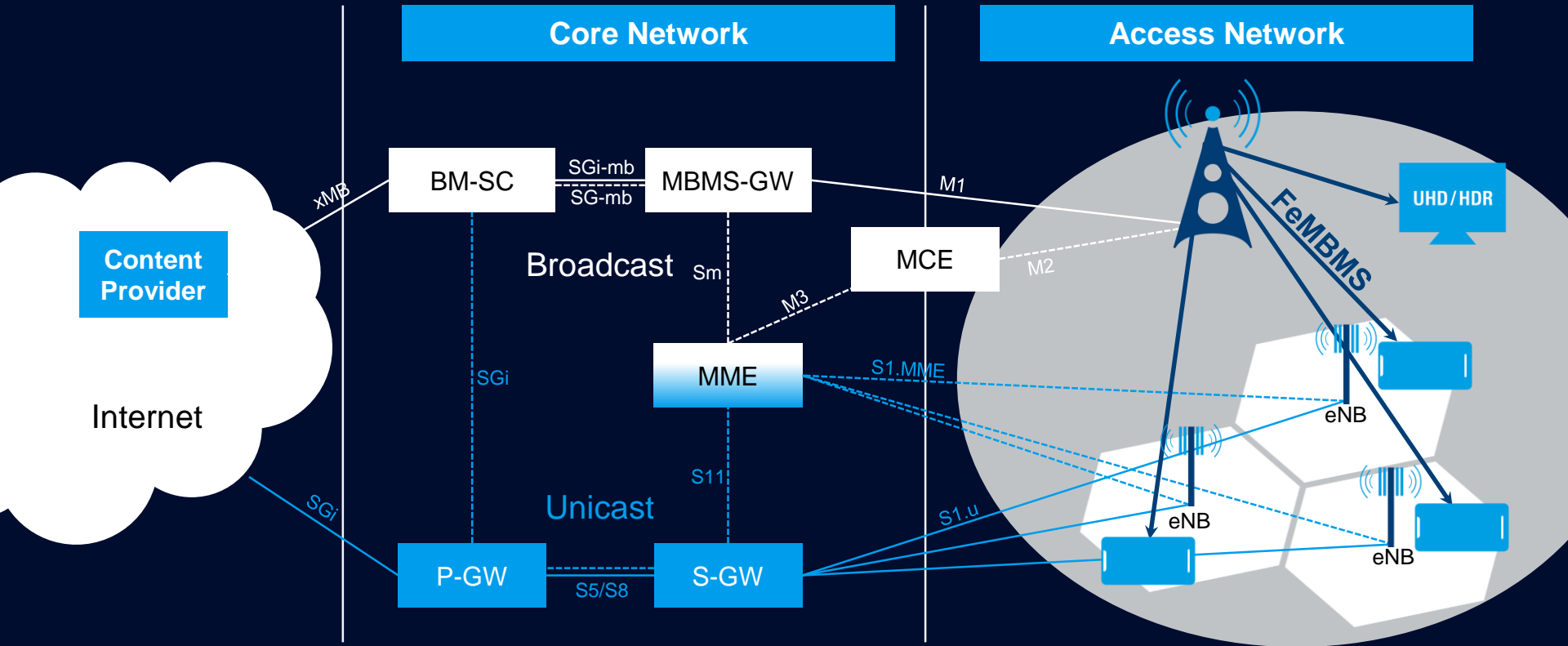
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# FEMBMS : LTE/EPC - NSA ARCHITECTURE

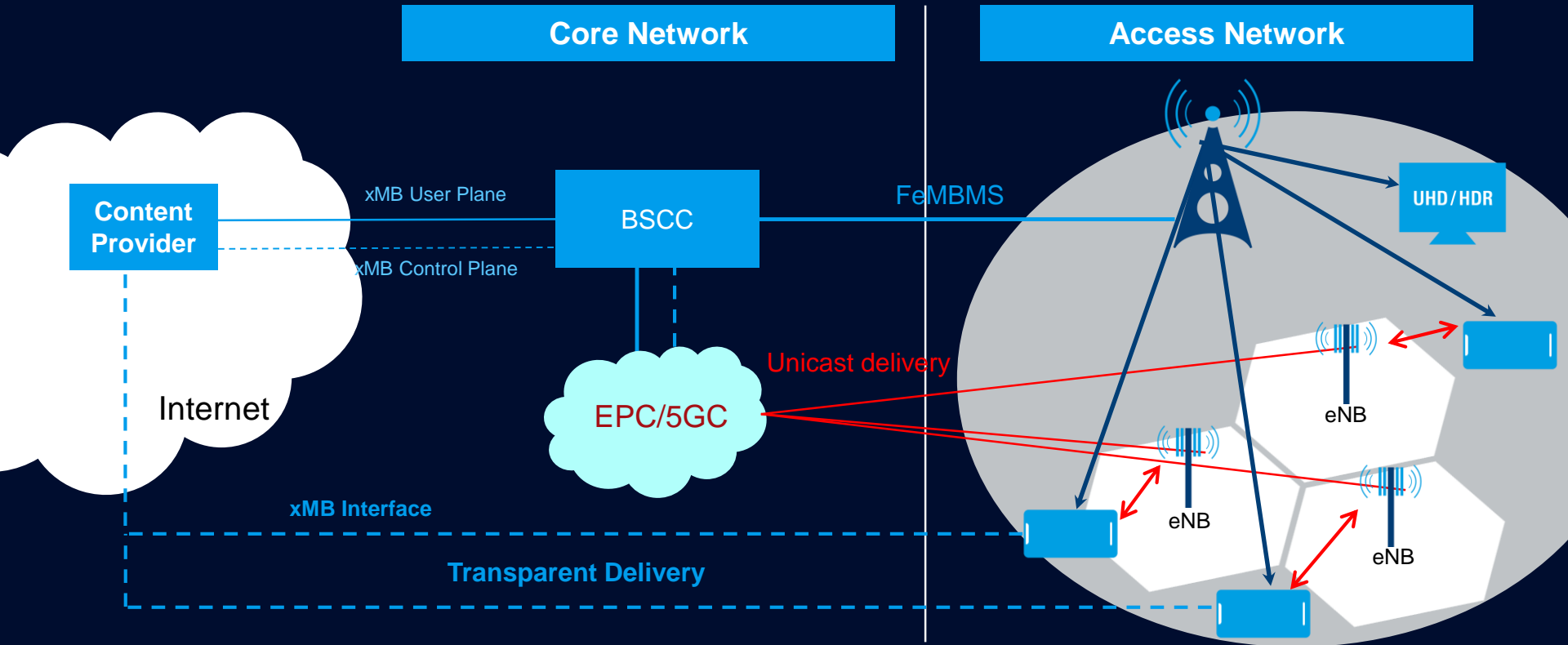


# FEMBMS : LTE/EPC - NSA WITH OVERLAY ARCHITECTURE

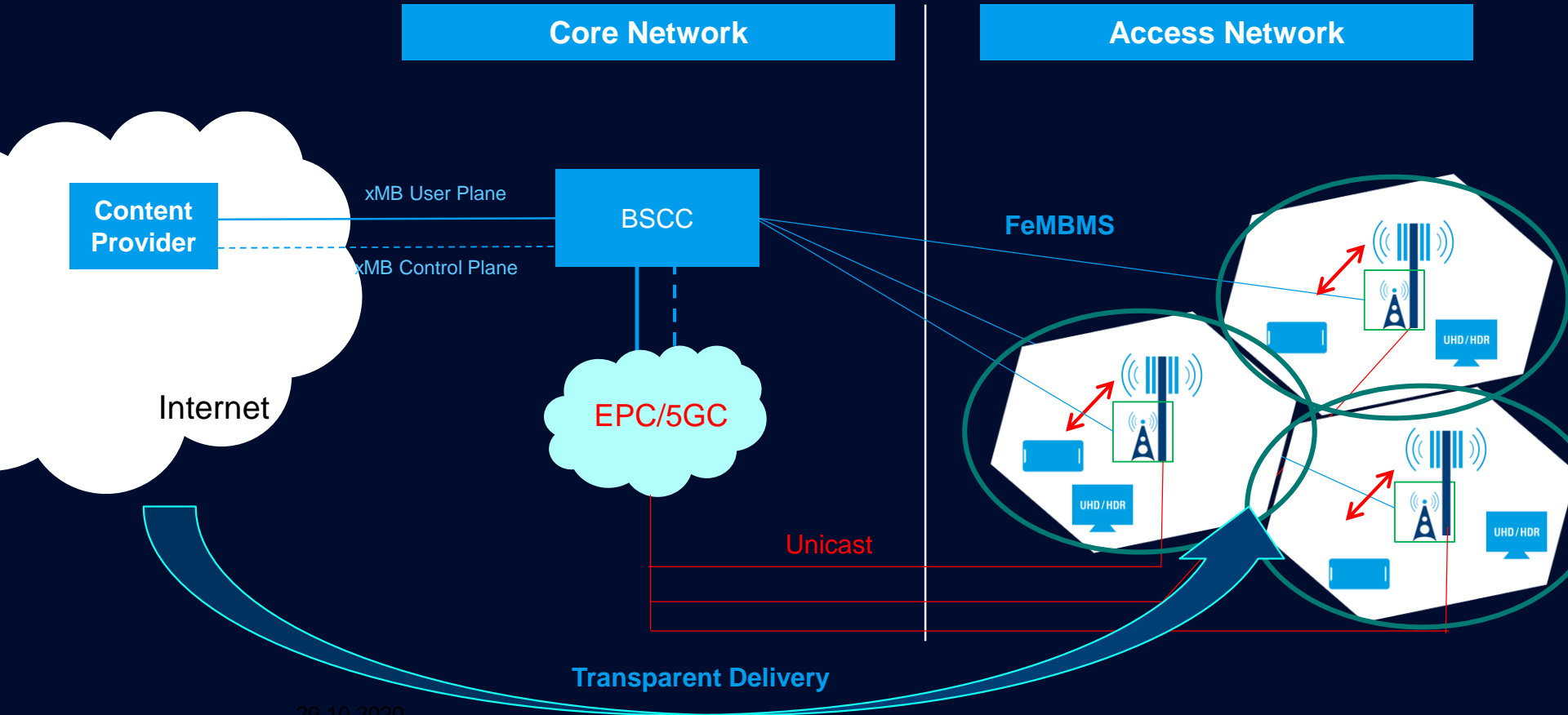




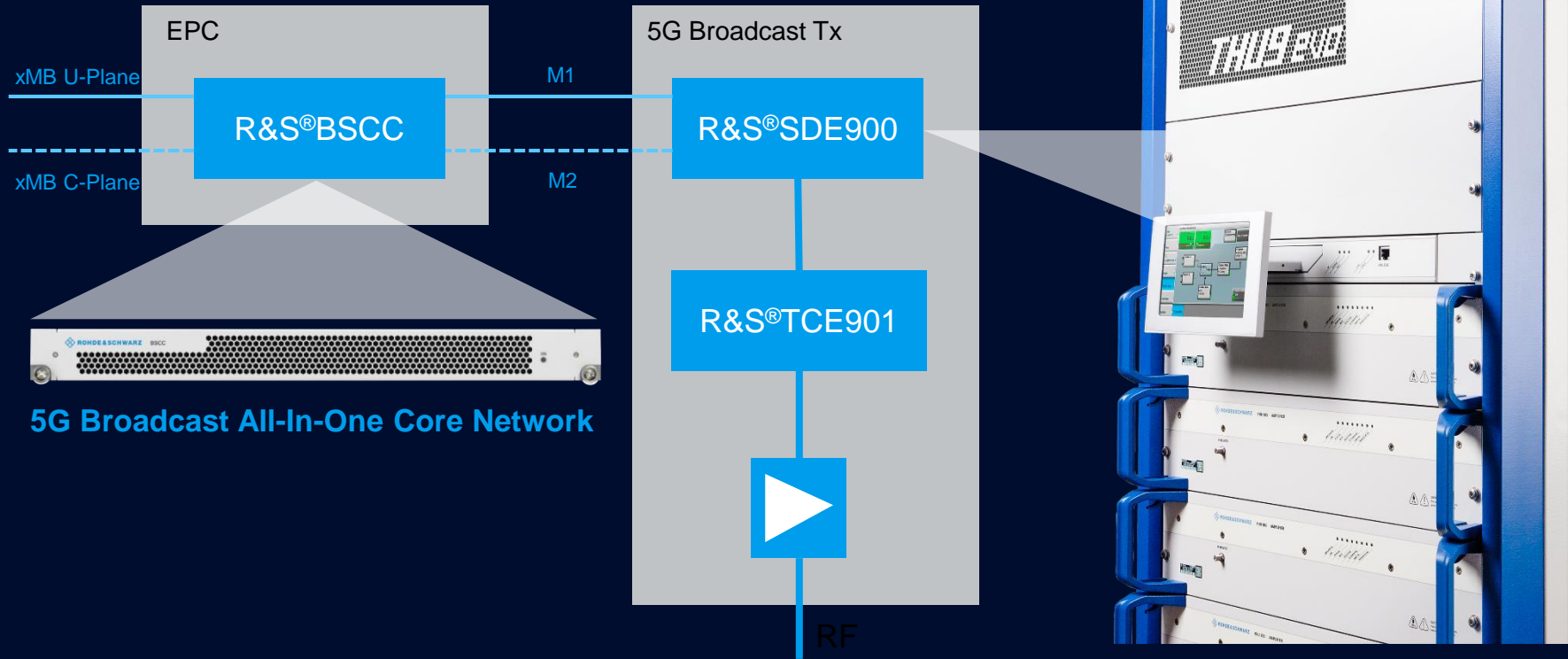
# SOLUTION 1 : OVERLAY NSA/SA SIMPLIFIED ARCHITECTURE



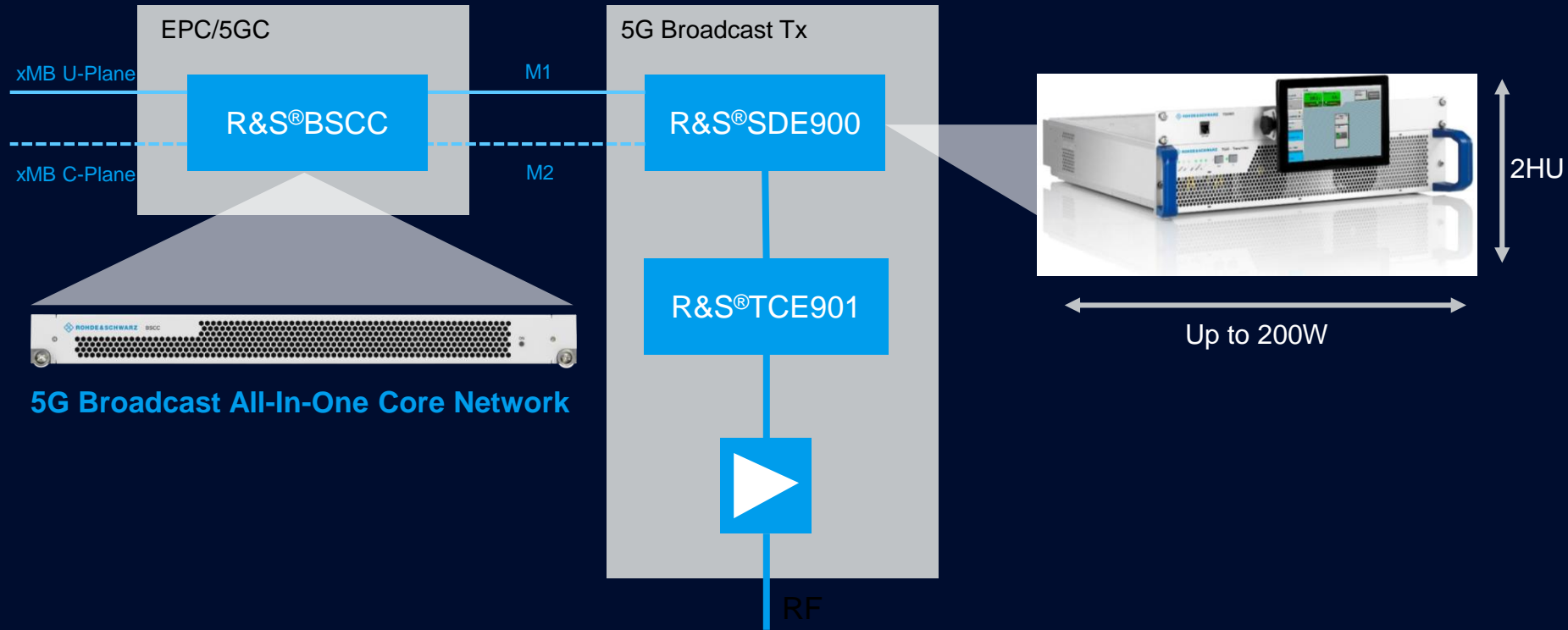
# SOLUTION 2 : SDL NSA/SA SIMPLIFIED ARCHITECTURE



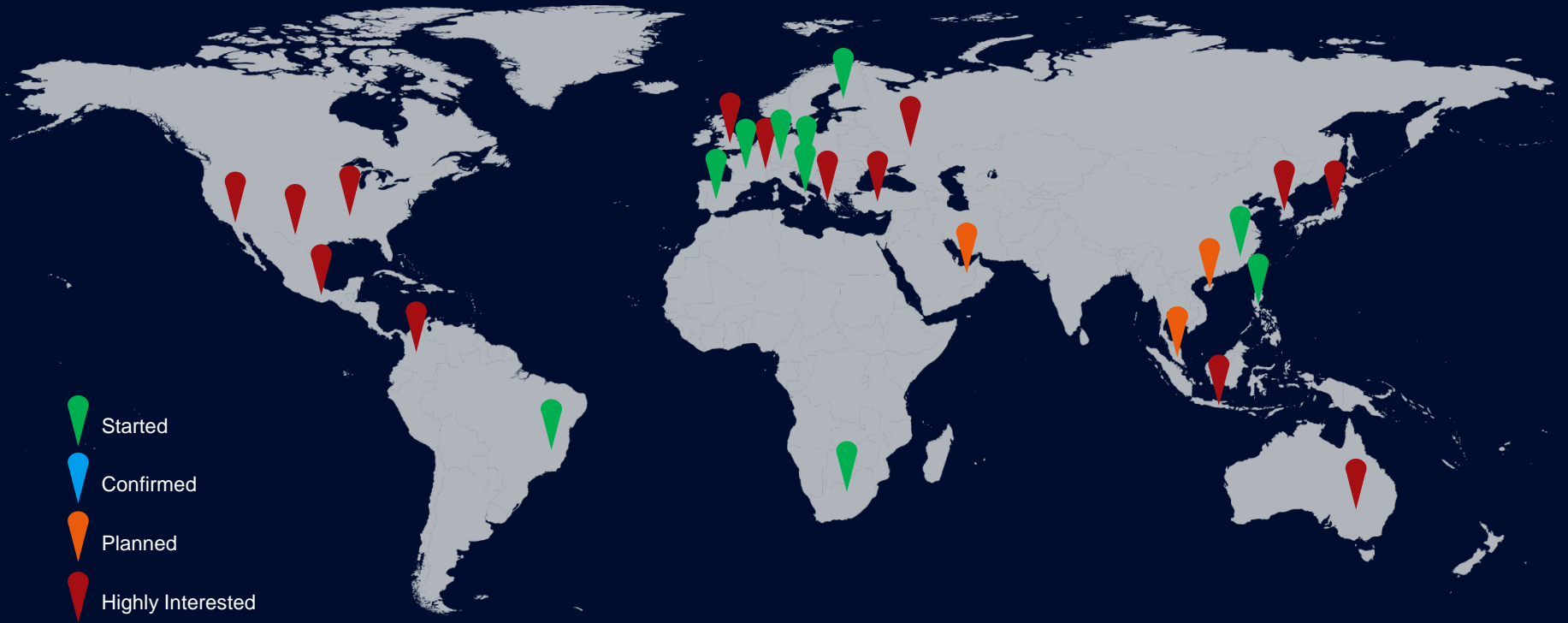
# 5G BC/MC SOLUTION 1 - R&S®OVERLAY SOLUTION



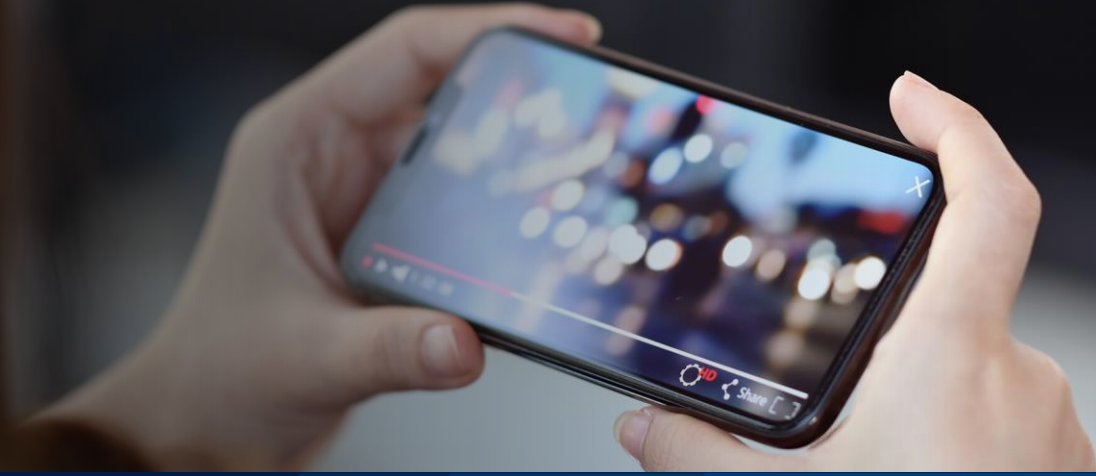
# 5G BC/MC SOLUTION 2 – R&S®SDL SOLUTION



# TRIALS WORLDWIDE



# 5G BROADCAST/MULTICAST – MAAS

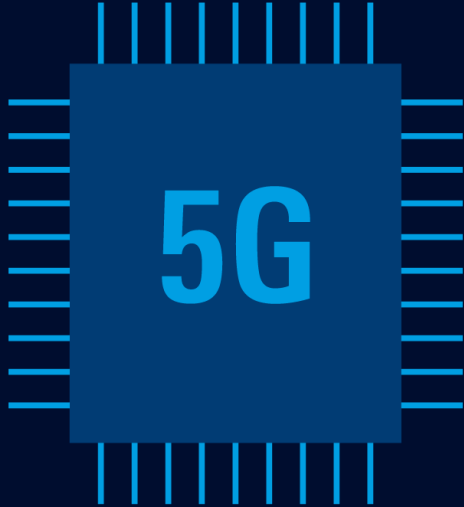


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# MULTICAST AS A SERVICE

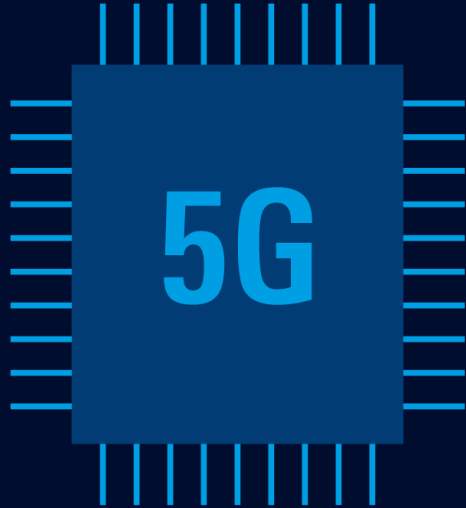


Voice over NR  
IoT  
Industry 4.0  
Remote Medical Operations...  
Remote Building...  
High quality VoD  
C-V2X  
E-Sports  
Live/Linear Casting  
OTA Multicast  
Public Safety Multicast  
Venue Casting  
Live Commerce  
Rural/Remote E-Learning  
E-Agriculture



**OPTION 1**  
=  
**5G UNICAST ONLY**

# MULTICAST AS A SERVICE



Voice over NR  
IoT  
Industry 4.0  
Remote Medical Operations...  
Remote Building...  
High quality VoD  
C-V2X  
E-Sports  
Live/Linear Casting  
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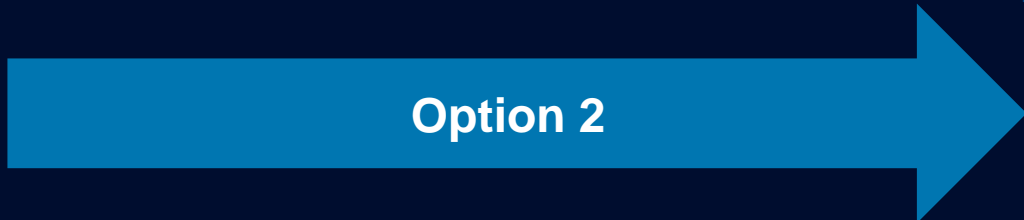


**OPTION 2**  
=  
**5G UNICAST + MULTICAST**



# MULTICAST AS A SERVICE

Saving up to 19.5% with less  
OPEX and better QoS/QoE



RAN CAPEX in  
5 Years

# BENEFITS FOR ECOSYSTEM PLAYERS

## Content Providers

1. Lower CAPEX
2. Better Coverage
3. Lower Latency
4. Higher Reliability
5. More Flexibility
6. Higher Efficiency
7. More Business

## MNOs

1. No OPEX
2. Better QoS
3. Higher QoE
4. Higher Reliability
5. Lower CAPEX
6. Higher Efficiency
7. More Business

## BNOs

1. More Dynamic
2. Lower CAPEX
3. Higher ROI
4. More Flexibility
5. Higher Efficiency
6. New B2B Model
7. New B2C Model

## End User

1. No data volume
2. Better Coverage
3. Lower Latency
4. One contract only
5. Better Service
6. Higher Experience
7. More Real-Time Apps