

5G for Media Distribution, Production and Contribution

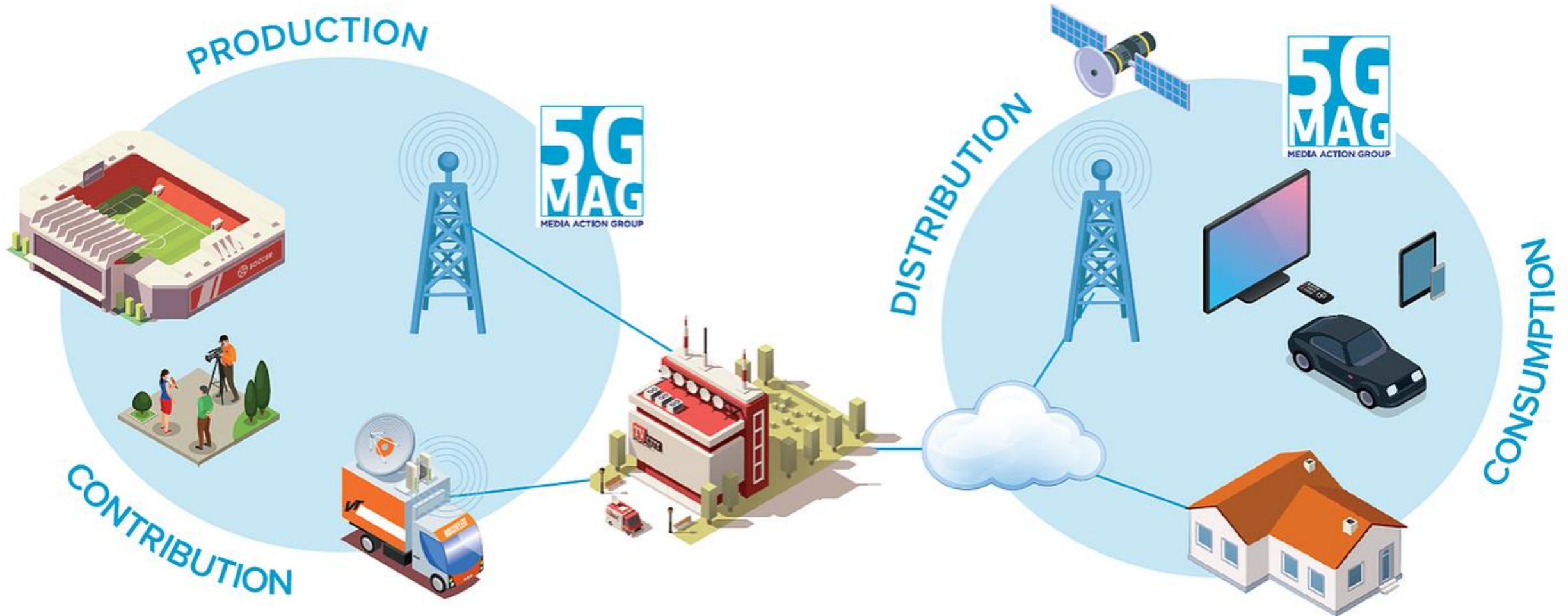
Dr. Jordi J. Gimenez - Head of Technology 5G-MAG

InterSDO meeting - 13.10.2021



www.5g-mag.com

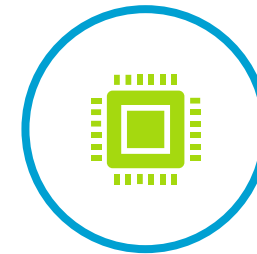
What's in 5G for the media industry?



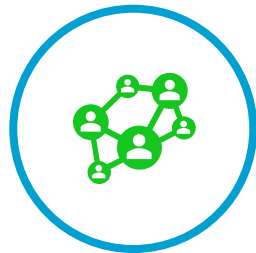
The Media Action Group is an association bridging the media and ICT industries



Understanding what 5G and related technologies can do for Media



Developing Use cases, Requirements, Commercial propositions



Influencing standards and making them understandable by the Media community



Steps towards implementing standards, trials and deployments

Commercial Aspects

Technology

Regulation

Trials

Implementation



The Mobile
Broadband
Standard



A Global
Partnership



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Partners News



5G-MAG brings audio-visual media into focus for 3GPP

February 3, 2021

The Organizational Partners (OPs) of 3GPP have approved 5G Media Action Group (5G-MAG) as a Market Representation Partner (MRP) in the project.

5G-MAG represents major stakeholders in the production and distribution of audio-visual media content and services, driving their collaboration on the implementation of 5G solutions, aligned to 3GPP standards.

[READ MORE ...](#)

Search

3GPP Website:

Search and download specs, docs, CRs and more from the 3GPP FTP Server:

[ADVANCED FTP SEARCH](#)

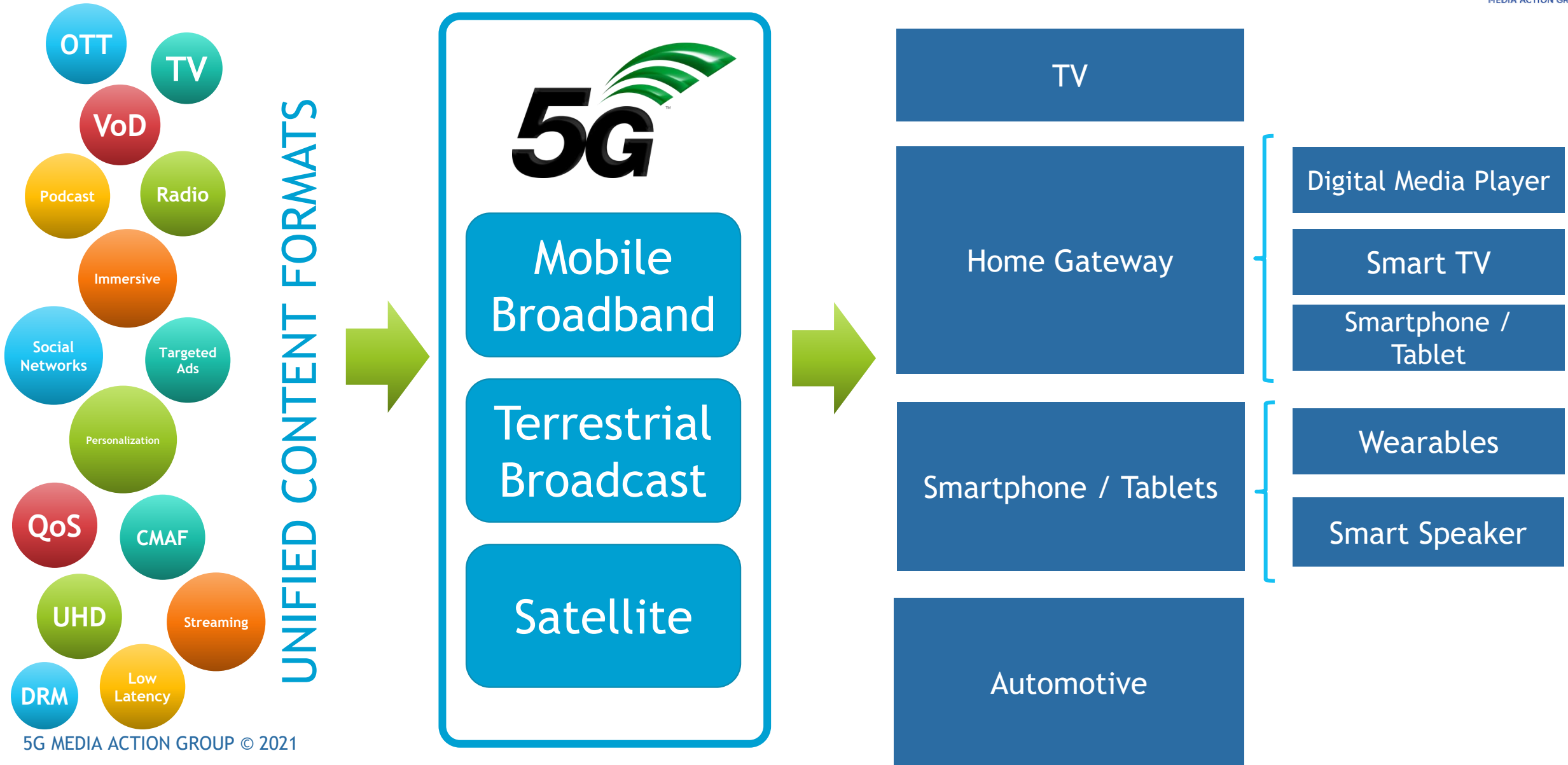
More News:

- [Advanced plans for 5G - Results of the RAN workshop on Rel-18](#)



Media Distribution and Consumption

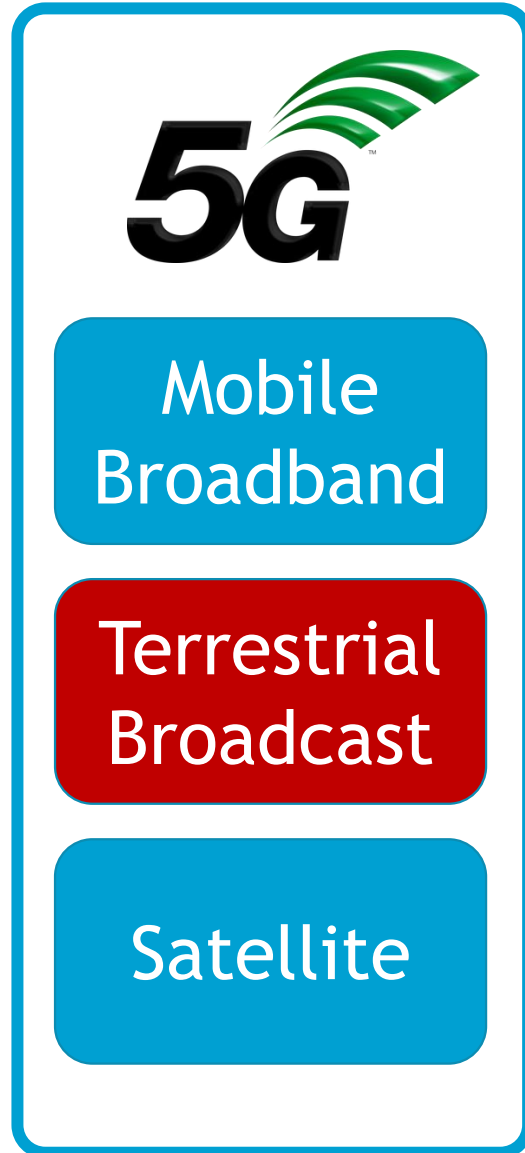
Content Anywhere, at Anytime, to Any Device



Our Work Areas



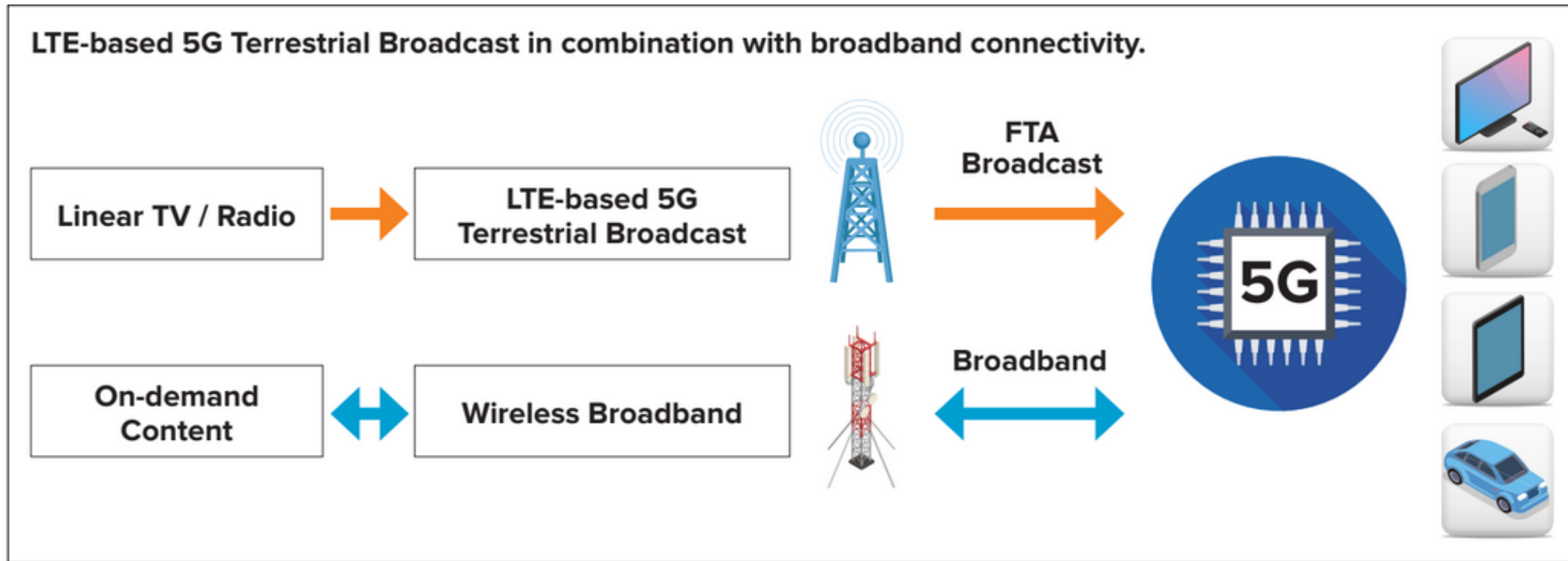
UNIFIED CONTENT FORMATS



- **LTE-based 5G Terrestrial Broadcast**
 - [LTE_terr_bcast](#) (Rel-16)
 - [LTE_terr_bcast_bands](#) (Rel-17)

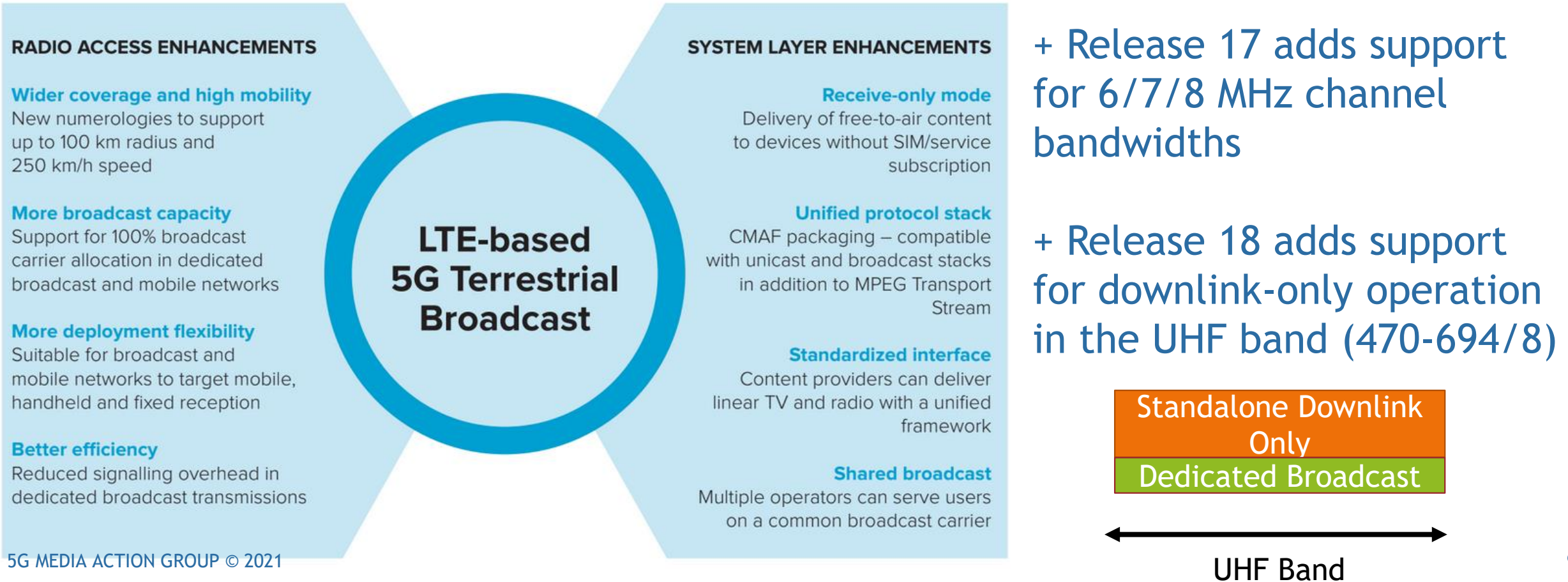
Work Area: 5G Terrestrial Broadcast

- Linear TV and Radio over LTE-based 5G Terrestrial Broadcast (Rel-16)



Work Area: 5G Terrestrial Broadcast

- Linear TV and Radio over LTE-based 5G Terrestrial Broadcast (Rel-16)



Evolving LTE-based 5G Terrestrial Broadcast in Rel-18?

- 5G-MAG proposes enhancements on:

- **Priorities**

- Connection of EnTV RAN (FeMBMS) to 5G Core
- Optimization for simultaneous support of 5G Broadcast & NR Unicast
- Time Interleaving

- Other topics of interest are (the order does not imply priority):

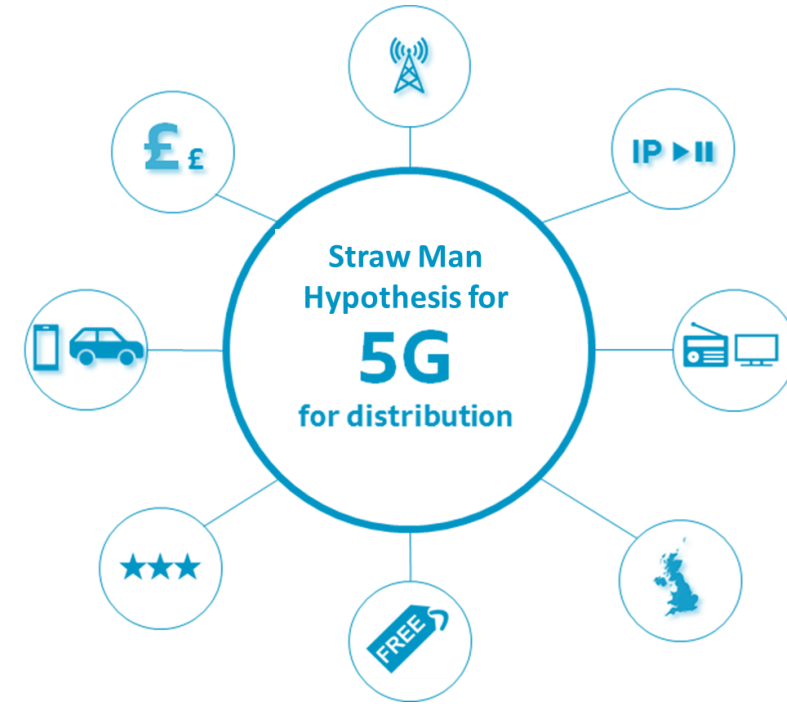
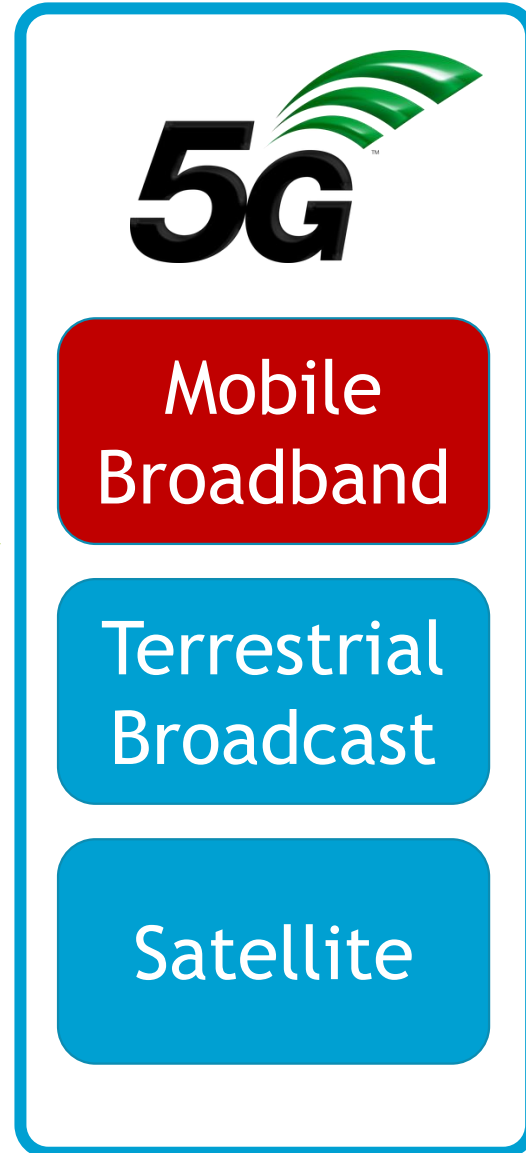
- Public Warning capability
- Efficiency enhancements, e.g., MIMO (existing antennas/RF stages in handsets), Overhead Reduction.



Our Work Areas





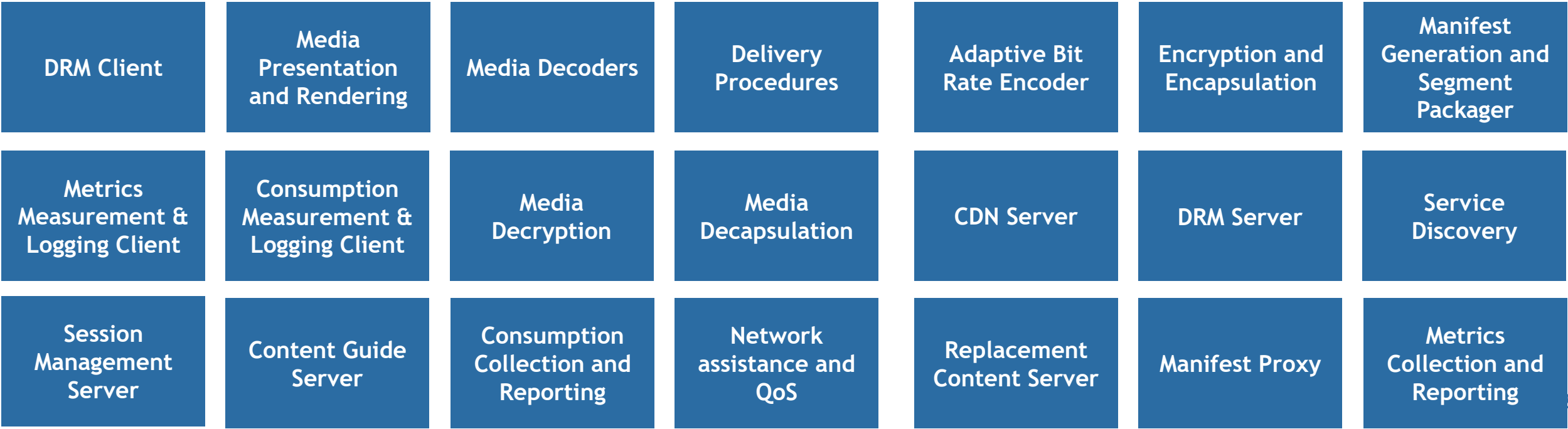
UNIFIED CONTENT FORMATS



- **5G Media Streaming Architecture**
 - 5GMSA (Rel-16)
 - + Multicast FS_5GMS_Multicast (Rel-17)
 - + Extensions FS_5GMS_EXT (Rel-17)
 - + Cloud/Edge Computing FS_EMSA (Rel-17)
- **Multicast Broadcast Services (MBS)**
 - 5MBS (Rel-17)
 - NR_MBS (Rel-17)

Work Area: 5G Mobile Broadband

- **5G Media Streaming Architecture** 
- 5GMSA (Rel-16)
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 - + Extensions FS_5GMS_EXT (Rel-17) 
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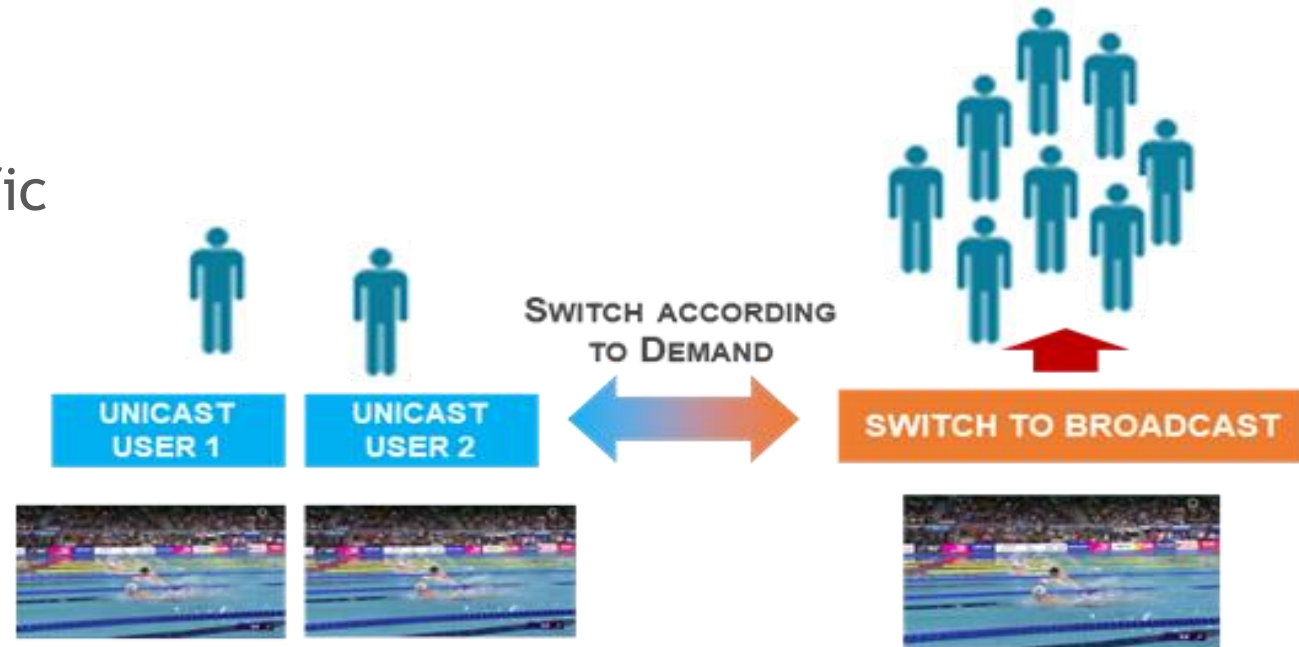
Work Area: 5G Mobile Broadband

- **Multicast Broadcast Services (MBS)**

- 5MBS (Rel-17)
- NR_MBS (Rel-17)



- Adding Multicast support
 - Users can be grouped to access specific multicast content
 - UE feedback may be possible
- Adding Broadcast support
 - Content delivered to a service area
- Allows for Dynamic Switching between PTP - PTM
 - Optimization of resources



Evolving 5G Multicast Broadcast Services in Rel-18?

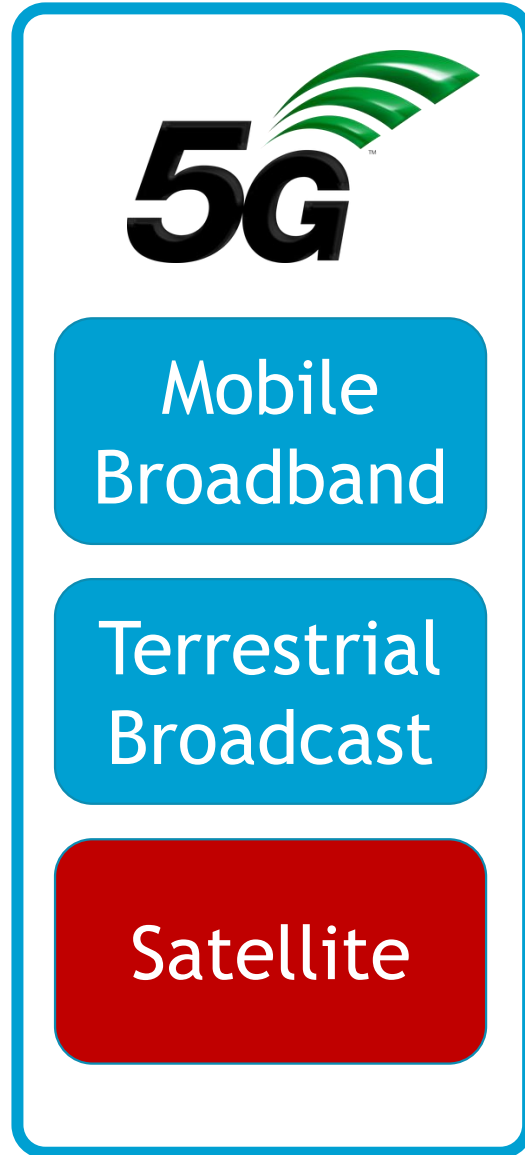
- 5G-MAG proposes enhancements on
 - **Priorities**
 - Receive-only mode/Free-to-air for MBS
 - Multicast reception in RRC_INACTIVE state
 - Potential leftovers from MBS Rel-17
 - Other topics of interest are (the order does not imply priority):
 - Considerations on UE handset backwards compatibility are essential
 - MBS SFN support for inter-gNB/DU scenarios
 - MBS resource optimization for RAN sharing deployment
 - MBS Physical Layer Time Interleaving
 - Broadcast/Multicast and Unicast Superposition Transmission (BMUST)
 - Techniques to enhance cell coverage, in particular in rural areas (e.g. CovEnh)
 - Techniques to address universal access to unicast/multicast/broadcast services (e.g. FS_PALS)



Our Work Areas



UNIFIED CONTENT FORMATS



- Non-Terrestrial Networks
- Satellite as Backhaul
- Satellite to Edge
- Satellite to End Users



Media Production and Contribution

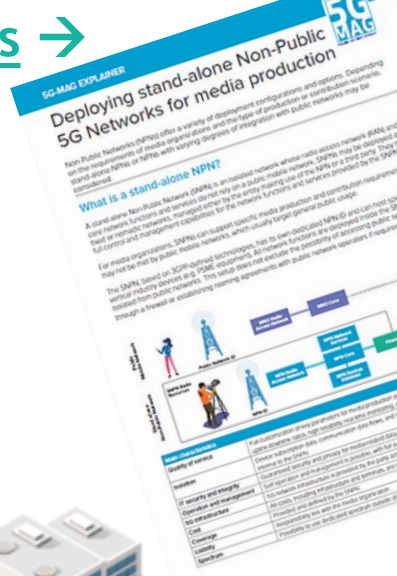
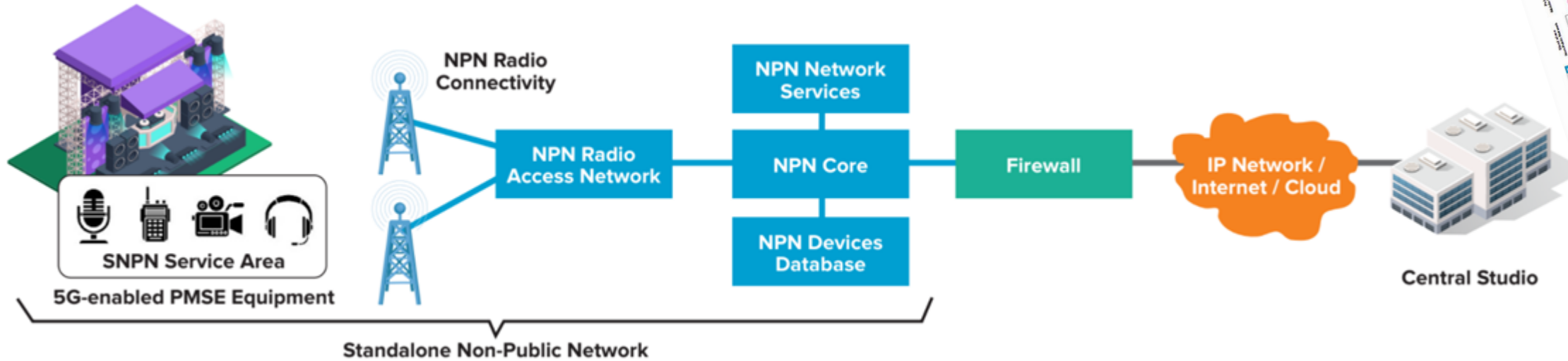
Connectivity Requirements

-  Video
-  Light, Effects
-  Recording
-  Theater, Musical
-  Broadcast, Sport
-  Live Music
-  Wireless Monitoring
-  Conferencing
-  Tour Guiding

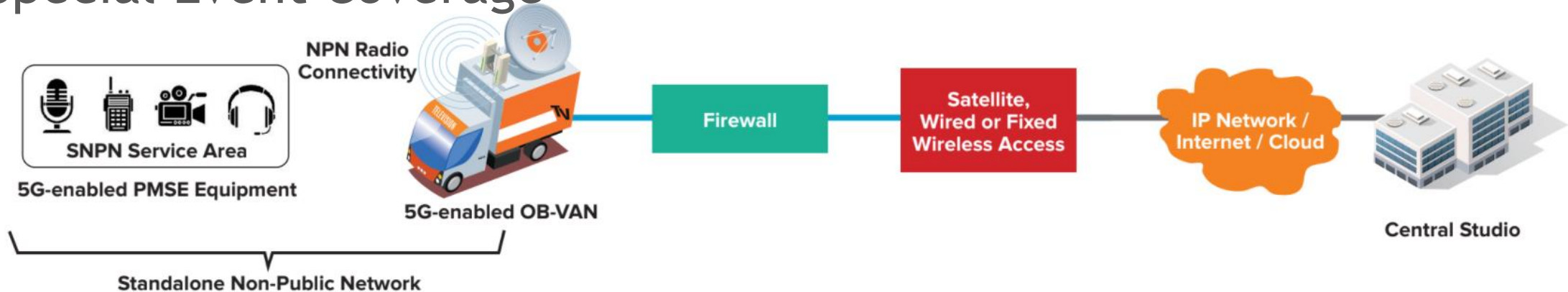


Work Area: Non Public Networks

- On-site production and Venues





- Special Event Coverage



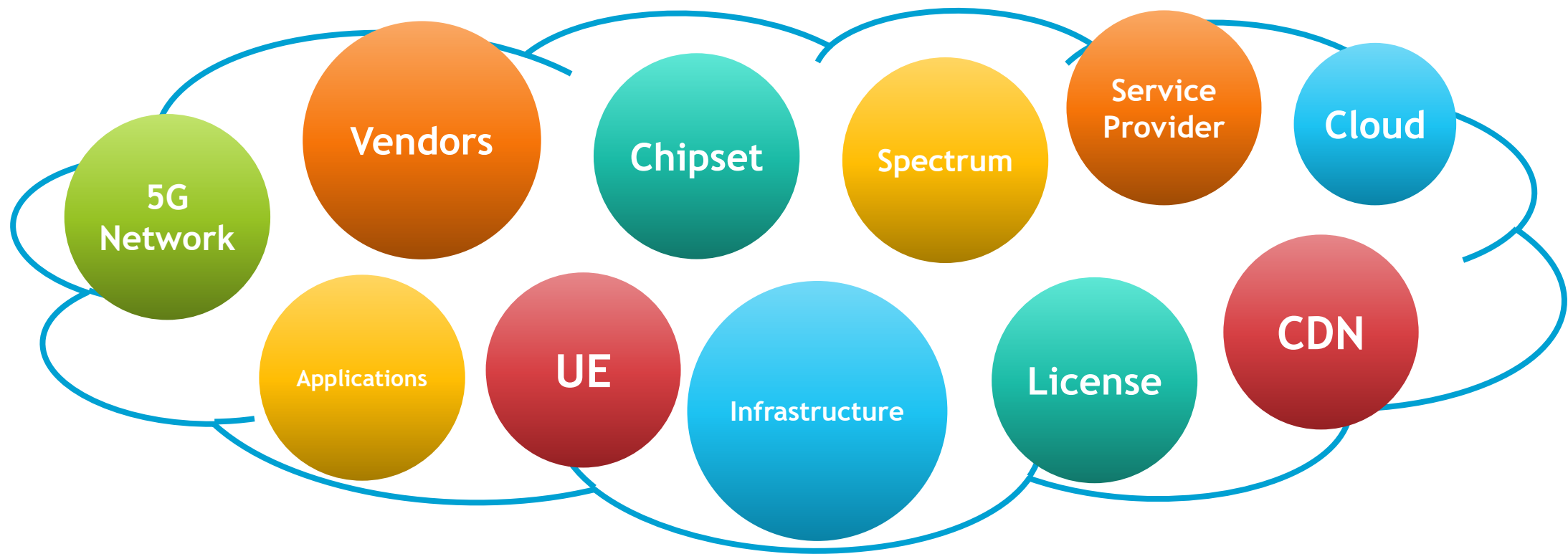
Work Area: Non Public Networks

- Study Item on **Media Production over 5G NPN**
 - Development of **reference architectures**
 - Identify **relevant QoS** requirements for media production workflows
 - Identify relevant **5G System features**
 - Identify the suitability of existing media production content delivery **protocols, codecs and service layers** for 5G System usage
 - Study **media device and network orchestration solutions**

3GPP TR 26.805 V0.1.1 (2021-04)	
<i>Technical Report</i>	
3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; Study on Media Production over 5G NPN Systems (Release 17)	
	
<small>A GLOBAL INITIATIVE</small>	



Commercial and Regulatory Aspects



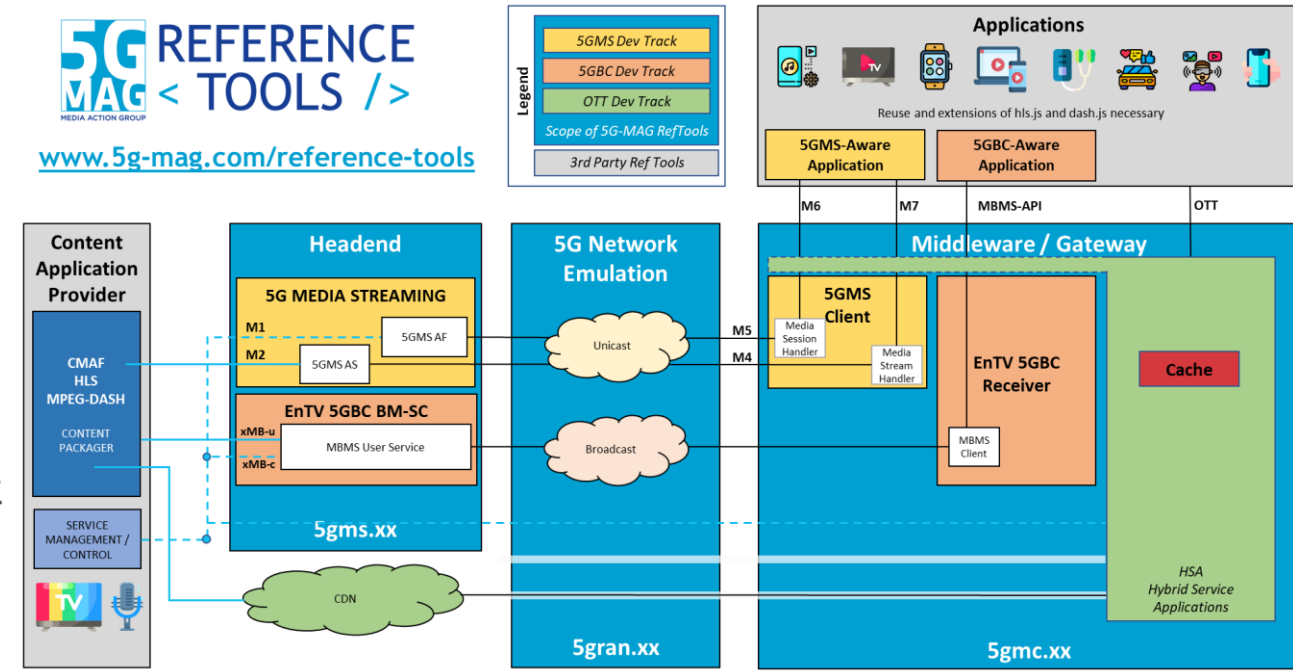
- Spectrum bands for 5G operation
- Requirements for Media Distribution and Production
- Localized Spectrum Access
- Zero-Rating
- NetNeutrality
- ...



Towards deployments, products and services

Open Source Development Programme

- Development of an open reference platform for 5G media services
- Initial target is 3GPP Release 16: Media Streaming + 5G Broadcast
- Use cases:
 - TV and Radio services
 - Low-latency streaming
 - Targeted-advertising
 - Regional/Local program insertion
 - Hybrid consumption scenarios
 - Integration in apps receiving broadcast + unicast
- Consumption environments:
 - Outdoor / On-the-move consumption
 - Automotive infotainment systems (Android Auto,...)
 - Home entertainment ecosystem: Cast to devices, TV, smart speakers, etc





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[linkedin.com/company/5g-mag/](https://www.linkedin.com/company/5g-mag/)

Thank you!

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MEDIA ACTION GROUP

www.5g-mag.com