

5G-MAG Proposals for 3GPP RAN Rel-18

David Vargas, Chair of Content Distribution - Technology (CD-T) WG

5G-MAG (Media Action Group)

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MEDIA ACTION GROUP

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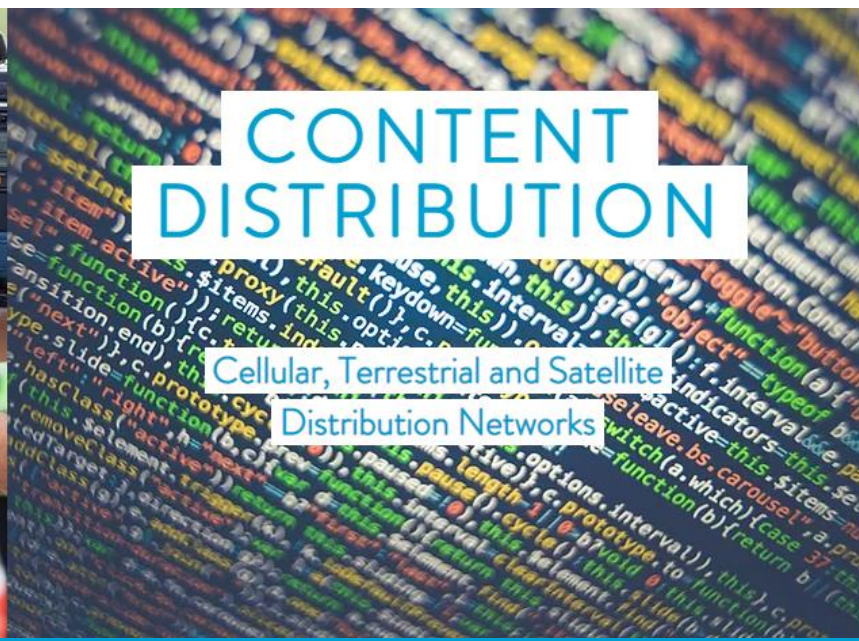
5G-MAG - Media Action Group



CONTENT PRODUCTION

Field video production

Wireless connected media studios



CONTENT DISTRIBUTION

Cellular, Terrestrial and Satellite

Distribution Networks



MEDIA CONSUMPTION

New services, experiences and devices

5G-MAG Scope of Activities

Media Distribution: Motivation

- Media content (e.g. TV, radio, on-demand, personalized, immersive, etc) is currently reaching audiences by means of different networks and technologies.
- **Mobile broadband (PLMN), terrestrial broadcast** and **satellite** networks are in the scope of both 5G-MAG activities and 3GPP standardization.
- 5G-MAG members support work in 3GPP on these areas in relation to media distribution.

LTE-based 5G Terrestrial Broadcast

- Terrestrial Broadcast in 3GPP addresses [RP-180668]:
 - No unicast, Downlink - only traffic.
 - Dedicated broadcast infrastructure (e.g., HPHT)

- Main use case is delivery of **Linear/Live** media content to **mobile devices** (i.e. smartphones, tablets and vehicles) **out of the home, and on the move.**

- Delivery of content over dedicated terrestrial broadcast networks is addressed by **LTE-based 5G terrestrial broadcast**
 - LTE terr bcast (Rel-16) & LTE terr bcast bands (Rel-17)
 - Meets the requirements [TR 36.776, TR 38.913] for terrestrial broadcast from a radio perspective.

LTE-based 5G Terrestrial Broadcast in 3GPP RAN 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.

Media Distribution over PLMNs

- 3GPP is developing several specifications within the scope of media distribution over mobile broadband networks.
- **NR Multicast and Broadcast Services «MBS»** [NR_MBS](#) (Rel-17)
 - Integration with unicast network
 - Efficient delivery of multicast/broadcast traffic (vs unicast)
 - Reuse of cellular infrastructure (LPLT).
- Main use case is delivery of **Linear/Live** media content to **mobile devices** (i.e. smartphones, tablets and vehicles) **out of the home, and on the move.**

Media Distribution over PLMNs in 3GPP RAN 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)

Media Production in 3GPP RAN Rel-18

- 5G-MAG supports **uplink enhancements** (e.g. for higher uplink bitrates or better QoS) and recognizes the need to conduct a gap-analysis on Rel-17 RAN technologies based on the requirements in SA1 TS 22.263 (please refer to §6.2, which shows the tables of performance requirements)
 - SA4 work in the Study Item “NPN4AVPROD” should also be considered.



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Contact us

Jordi J. Giménez - Head of Technology

gimenez@5g-mag.com



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