

RP-180474

3GPP RAN #79
Chennai, India
19-22 March 2018

Qualcomm

Interim report from email discussion on 5G Broadcast evolution

Convener (Lorenzo Casaccia, Qualcomm)



Summary

- Email discussion started on January 22nd
- 8 entities participating
- Good progress, in line with expectations/plan set forth at the start of the discussion
- Convener recommends providing visibility to TSG SA given the end-to-end characteristics

General structure of the discussion

Excerpts from convener's email on Jan 22nd

This email is the kickoff of the email discussion on "Broadcast", as per agreement at last Plenary also copied below

At RAN #78 related proposals could be found on the document list from Qualcomm, Reliance JIO and LGE (references below). At previous plenaries, there were also related proposals or inputs from other companies as well.

Of course, all such proposals, as well as new ideas, are in the scope of this email discussion.

*Given the system-level nature of the topic, I plan to run this discussion in **two parts***

*=> **Part 1** (from now until RAN #79): general principles along the lines of "what do we want to do" & fundamental technology attributes of possible Rel-16 work.*

No WI/SI drafting will take place during Part 1.

I hope we can have a meaningful conclusion of this part during 7-8 weeks of email discussions such that it can be presented at RAN #79, and potentially even at SA #79 (or a joint session). Some involvement (or at least information sharing) of TSG SA seems opportune given the e2e nature of the subject.

*=> **Part 2** (from RAN #79 to RAN #80): assuming Part 1 goes well, during Part 2 we can work on related draft(s) for the resulting work/study item(s)*

Nomenclature

Identification of basic principles

- **Terrestrial Broadcast**: notion of a downlink-only, ‘large area coverage up to nation-wide’ broadcast on dedicated spectrum, e.g. “TV-like” distribution of content
- **Mixed mode multicasting**: notion of downlink multicast/broadcast with the potential to leverage downlink unicast and/or uplink unicast, with configurable/dynamic coverage ranging between a single cell to a large area, and multiplexed and possibly seamlessly switched with unicast traffic

Identification of technical attributes

Terrestrial Broadcast

- Proposal to use LTE EnTV as a basis
- Broadcast only
- DL-only
- Large & static transmission areas
 - Nationwide to large number of cells
 - Requires a standardized “coordinator” across cells
- Enhancements (if any) needed to meet 5G requirements from TR 38.913, Clause 9.1
- Additional requirements from TR 22.261 if needed

Mixed mode multicasting

- “Equivalent” of MBMS into NR
- Switched broadcast/unicast
- Potentially mixed DL & UL
- Moderate & dynamically configured transmission areas
 - Few cells to one cell
- Common physical layer design (but flexible) to accommodate for different types of broadcast (e.g. from single cell to large area SFN transmission)

Next steps

- Refinement of the technical attributes at RAN #79
- Drafting of **two** SI/WI accordingly



Thank you

Follow us on:    

For more information, visit us at:

www.qualcomm.com & www.qualcomm.com/blog

Nothing in these materials is an offer to sell any of the components or devices referenced herein.

©2018 Qualcomm Technologies, Inc. and/or its affiliated companies. All Rights Reserved.

Qualcomm is a trademark of Qualcomm Incorporated, registered in the United States and other countries. Other products and brand names may be trademarks or registered trademarks of their respective owners.

References in this presentation to “Qualcomm” may mean Qualcomm Incorporated, Qualcomm Technologies, Inc., and/or other subsidiaries or business units within the Qualcomm corporate structure, as applicable. Qualcomm Incorporated includes Qualcomm’s licensing business, QTL, and the vast majority of its patent portfolio. Qualcomm Technologies, Inc., a wholly-owned subsidiary of Qualcomm Incorporated, operates, along with its subsidiaries, substantially all of Qualcomm’s engineering, research and development functions, and substantially all of its product and services businesses, including its semiconductor business, QCT.