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3GPP TSG RAN#93e
Electronic Meeting, Sep 13 - 17, 2021
Agenda Item: 9.0.4

RP-212351

Views on Broadcast Evolution for Rel-18

5G

Background

- The conclusions for LTE-based 5G broadcast in [RAN93e-R18Prep-09] are as follows:
  - The following potential objectives were discussed:
    - (controversial) Connection to 5GC
    - (controversial) Enabling simultaneous NR unicast and LTE broadcast
  - … and additional potential objectives supported by a single company (lower prio ?)
    - (controversial) Time Interleaving
    - (controversial) Public Warning capability
    - (controversial) Efficiency enhancements
- In this contribution, we present our views on the above conclusions

General discussion

- During the discussion, most of the negative comments towards these features were reduced to “Do not support”, without giving any concrete explanation.
  - Note that two of the entities that supported these enhancements represent a large amount of companies in the broadcast ecosystem (5G-MAG and EBU)

- The work in the two tracks is very small:
  - For connection to 5GC, the main work would be in SA2. TSG SA and RAN jointly need to decide to proceed with the work, in that case RAN3 could implement the necessary minimal changes to adapt to 5GC.
  - For the “simultaneous reception” part, the CRs were already presented in the past to RAN plenary, and it requires minimum amount of work in RAN2.

- **Proposal:**
  - Endorse a RAN3-led work item on LTE-based 5G broadcast with the following objectives:
    - Connection to 5GC (RAN3)
    - Simultaneous reception of NR unicast and LTE broadcast (RAN2)
      - Taking as baseline the discussion in R2-2004535
    - Further details for these objectives are explained in the following slides.

Support of 5GC

- Currently, LTE-based 5G broadcast can only be connected to EPC.
  - During Rel-17 timeframe, there was a discussion of introducing the feature, but it was down-prioritized

- It is proposed:
  - In SA, introduce support for “terrestrial broadcast” connected to 5GC
  - In RAN, do the necessary changes to connect 5G broadcast to the 5GC.

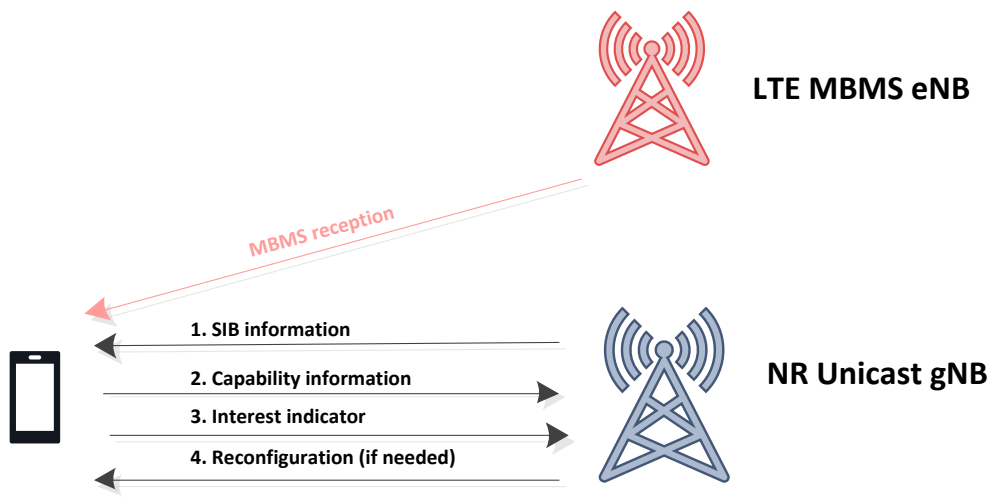
- The main RAN impact is in RAN3
  - Need to define RAN architecture to support MBSFN

- **Proposal: Introduce necessary changes to connect LTE-based 5G broadcast to 5GC**
  - This requires work in both RAN and SA.
  - The work in SA to enable ROM for NR MBS can be reused for LTE-based 5G broadcast.

Efficient support of unicast and broadcast

- In R2-2004535, it was proposed to introduce enhancements for simultaneous operation of NR unicast and LTE MBMS, as follows:
  - Capability signalling for baseband limitation
    - Indicate baseband limitation (amount of “baseband resources” available for MBMS reception) similar to LTE.
  - Discovery assistance: NR SIB to indicate the presence of LTE MBMS carriers.
  - MBMS Interest indication: RRC message to inform the serving gNB about the reception (or interest to receive) of LTE MBMS services.
  - Cell reselection: Prioritize frequencies depending on broadcast reception

- **Proposal**: Introduce necessary changes to enhance support of simultaneous LTE MBMS and unicast NR.



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