

3GPP TSG RAN Rel-18 workshop
Electronic Meeting, June 28 - July 2, 2021

RWS-210333



On Rel-18 NR MBS enhancement

Agenda Item: 4.1
Source: CMCC



Motivation

Release 17 NR MBS WI provides fundamental functions to support broadcast/multicast service in NR for RRC_CONNECTED/INACTIVE/IDLE UEs

- Due to limited TU in Release 17, there is uncertainty whether following techniques to enhance the spectrum efficiency and reliability for UEs in RRC_CONNECTED state can be specified, including
 - group scheduling mechanisms, e.g., beam management for multicast, especially for FR2, carrier aggregation, dynamic HARQ process management/share between multicast and unicast.
 - reliability improvement schemes, e.g., CSI measurement/report enhancement for MBS, sub-slot based PUCCH for HARQ-ACK feedback, intra-UE UCI multiplexing between multicast and unicast, etc.
 - ARQ in Layer 2 for PTM is also not supported.
- For RRC_IDLE/INACTIVE UEs, multiple MCCHs for broadcast service are not supported in Release 17, and there is uncertainty whether multicast service can be supported in Release 17 as well.
- In addition, some deployment scenarios are also not considered in Release 17 WI scope, e.g., standardised support of SFN over multiple cells, support of Free-to-Air/receive only mode, support of up to 100% resource allocation to MBS.
- Last but not least, some cross-field features also need to be considered for MBS, e.g., UE power saving.



Potential Objectives

The set of objectives of Rel-18 NR MBS enhancement includes:

- Specify enhancement for broadcast/multicast service for UEs in RRC_CONNECTED state [RAN1, RAN2]:
 - Specify group scheduling mechanism enhancement to further improve spectrum efficiency, e.g., beam management for multicast service, especially for FR2, carrier aggregation for multicast service, dynamic HARQ process management/share between broadcast/multicast service and unicast service [RAN1, RAN2];
 - Specify reliability improvement enhancement, e.g., HARQ-ACK feedback enhancement, CSI measurement/report enhancement for multicast service, support of ARQ in Layer 2 for PTM [RAN1, RAN2];
 - Other Rel-17 leftovers.
- Specify enhancement for broadcast/multicast service for UEs in RRC_IDLE/INACTIVE states [RAN2, RAN1, RAN3]:
 - Support of multicast service for UEs in RRC_IDLE/INACTIVE states [RAN2, RAN1, RAN3];
 - Specify the multiple MCCHs for broadcast service per cell [RAN2, RAN1].



Potential Objectives cont'd

The set of objectives of Rel-18 NR MBS enhancement includes:

- Specify enhancement to expand deployment scenarios for broadcast/multicast service for UEs in RRC_IDLE/INACTIVE/CONNECTED states [RAN1, RAN2, RAN3]:
 - Standardised support of SFN over multiple cells above gNB-DU level [RAN1, RAN2, RAN3];
 - Support of Free-to-Air/receive only mode [RAN2];
 - Support of up to 100% resource allocation to broadcast/multicast service [RAN1, RAN2].
- Specify UE power saving and battery lifetime enhancement for UEs in RRC_IDLE/INACTIVE/CONNECTED states [RAN1, RAN2]:
 - Specify power saving techniques with power saving signal/channel in triggering UE adaptation to the DRX operation for broadcast/multicast service [RAN1, RAN2].

THANK YOU !