

China Academy of Telecommunication Technology

3GPP TSG RAN Rel-19 Workshop

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RWS-230372

Considerations on Rel-19 NR MBS

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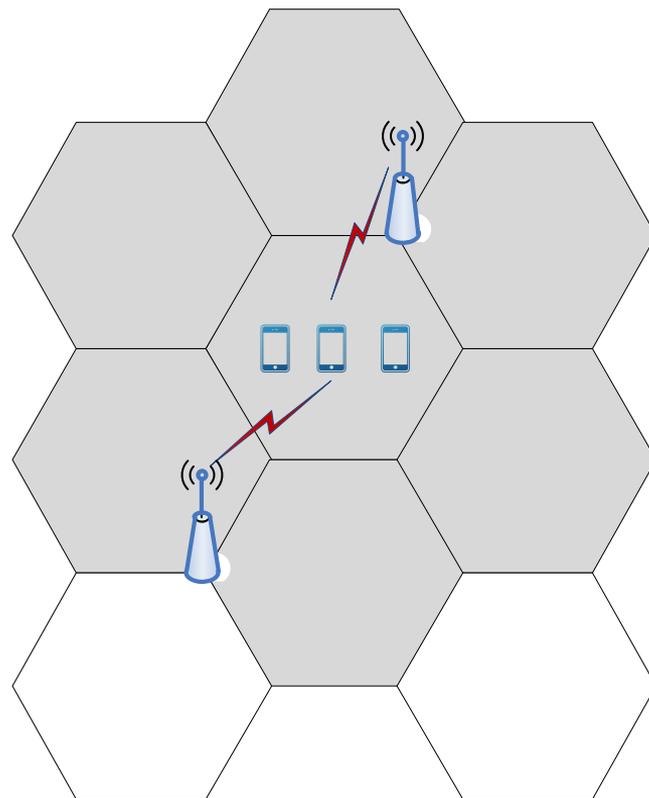
SFN enhancement

Motivation

- ❑ SFN transmission is useful to increase the spectrum efficiency and reliability of broadcasted services(e.g., live TV/video).
- ❑ SFN within one gNB-DU is supported in R17 NR MBS based on network implementation but limited to small number of cells due to the reuse of R17 numerologies.

Potential work

- ❑ CP extension for 15Khz for SFN transmission [RAN1,RAN2]
- ❑ Mechanism to support synchronization across gNBs/DUs for SFN [RAN3]



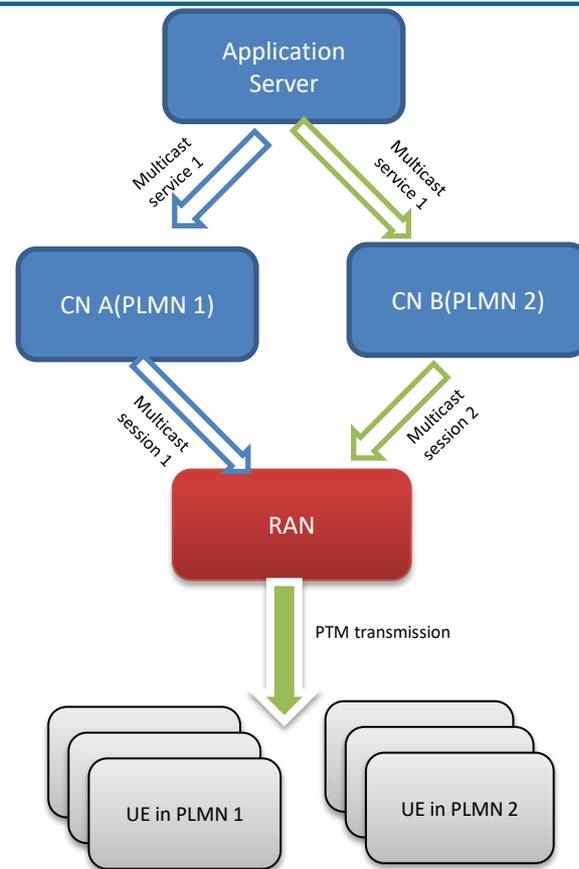
RAN sharing enhancement for Multicast

Motivation

- Efficiency improvement for multicast in RAN sharing scenario. The similar enhancement is already supported in Rel-18 for broadcast, and there is similar motivation to enhance for multicast.

Potential work

- Association between the Multicast sessions corresponding to the same multicast service on NG interface [RAN3]
- Use same radio resources for the multicast session corresponding to the same multicast service [RAN2 potential]



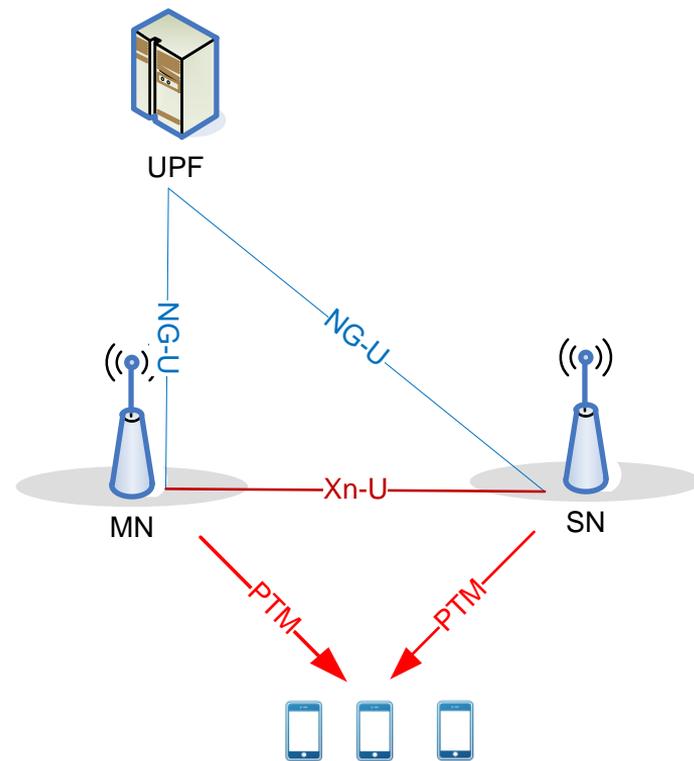
Enhancement for DC and/or CA scenarios

Motivation

- ❑ Higher data rate requirement e.g., ~10 Mbps to 100Mbps, for gaming, video in car, and live broadcasting in stadium, etc.
- ❑ Gap between unicast and multicast services will become even larger in the 5.5G era.

Potential work

- ❑ Support MBS on MCG and SCG simultaneously in DC scenario, e.g., how to configure UE, how to schedule MBS on both MCG and SCG [RAN2, RAN3, RAN1]
- ❑ Support MBS on multiple serving cells simultaneously in CA scenario, e.g., how to configure UE, how to schedule MBS on both PCell and SCells [RAN2, RAN1]



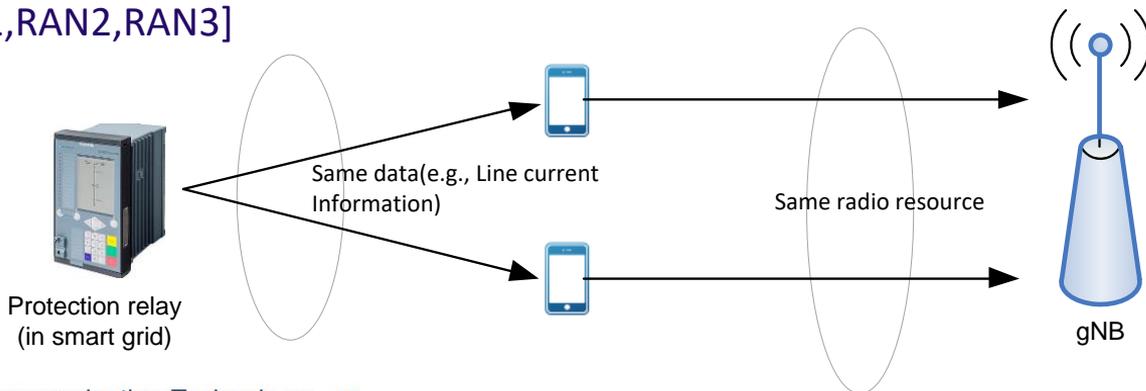
Support of UL SFN for UE back up

Motivation

- End to end backup industrial requirement for 5G application (e.g., Data backup for Differential protection(DP), Distributed Energy Storage, Distributed Feeder Automation in smart grid)
- Existing backup solutions are with high costs, not reliable, and has security risks

Potential work

- Allocate the UL radio resources to be used for the same service from multiple UEs [RAN1,RAN2,RAN3]



R18 NR MBS leftovers

□ Enhancement for Redcap UE to receive MBS

● Motivation

- Resource efficiency improvement for MBS services targeted to redcap UEs.

● Potential work

- Information of the services targeted to redcap UEs on NG interface [RAN3]
- Use same control plane resource (i.e., MCCH) for redcap UEs and non-redcap UEs [RAN1,RAN2]
- Use same user plane resource(i.e., MTCH) for redcap UEs and non-redcap UEs [RAN1,RAN2]

□

Summary of R19 NR MBS evolution

Leading WG: RAN2

Involved WGs: RAN1 and RAN3

Objectives:

- Enhanced support for MBS in CA, DC scenario, e.g., schedule MBS on multiple serving cells simultaneously in CA scenario, schedule MBS on MCG and SCG simultaneously in DC scenario [RAN2, RAN3, RAN1]
- Enhanced support for SFN, large cell, e.g. extended CP for 15 kHz SCS, synchronization across gNBs/DUs [RAN1, RAN2, RAN3]
- Support efficient multicast reception in RAN sharing scenario [RAN3, RAN2]
- UL SFN for UE back up [RAN1, RAN2, RAN3]
- Resource efficiency enhancement for Redcap UE to receive MBS [RAN1, RAN2, RAN3]

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