3GPP TSG RAN #96

Budapest, Hungary, June 6th – 9th, 2022

RP-221592

Clarifications on Rel-18 SI on Duplex Evolution

Agenda Item: 9.2.6

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Document for: Discussion

Rel-18 Duplex: Current Objectives

- Identify applicable and relevant deployment scenarios (RAN1).
- Develop evaluation methodology for duplex enhancement (RAN1).
- Study the subband non-overlapping full duplex and potential enhancements on dynamic/flexible TDD (RAN1, RAN4).
  - Identify possible schemes and evaluate their feasibility and performances (RAN1).
  - Study inter-gNB and inter-UE CLI handling and identify solutions to manage them (RAN1).
    - Consider intra-subband CLI and inter-subband CLI in case of the subband non-overlapping full duplex.
  - Study the performance of the identified schemes as well as the impact on legacy operation assuming their co-existence in co-channel and adjacent channels (RAN1).
  - Study the feasibility of and impact on RF requirements considering adjacent-channel co-existence with the legacy operation (RAN4).
  - Study the feasibility of and impact on RF requirements considering the self-interference, the inter-subband CLI, and the inter-operator CLI at gNB and the inter-subband CLI and inter-operator CLI at UE (RAN4).

Evaluations for adjacent channel scenarios

During RAN1 #109-e meeting, there were different views on whether performance evaluations for adjacent channel scenarios should be carried out in RAN1 or RAN4 and the issue could not be resolved within RAN1.

- Views that performance evaluations for adjacent channel scenarios should be done in RAN4 were expressed during the Rel-18 SI scoping discussions during RAN #94-e as well.
  - However, discussions on this aspect were limited during that time and all "performance evaluations" were assigned to RAN1.
- While the current SID indicates RAN1 as the responsible WG, typically studies involving adjacent channel scenarios have been the responsibility of RAN4, e.g., LTE eIMTA, Rel-16 CLI, NR V2X, etc.
- RAN4 has the right expertise to model adjacent channel scenarios
- Having RAN1 perform such evaluations imply additional coupling/dependencies between RAN1 and RAN4 studies.
  - As an example, RAN4 has performed prior studies on adjacent channel cases for dynamic/flexible TDD as part of Rel-16 CLI. It would only be appropriate that RAN4 continues on that work to avoid duplicated discussions as also noted explicitly in the SID.
- Thus, in terms of expertise, it would be more appropriate for RAN4 to conduct studies involving adjacent channel scenarios.

Summary and Proposal

Observations:

- *Considering typical split of responsibilities between RAN1 and RAN4, it would be more appropriate to assign evaluations for adjacent channel scenarios to RAN4, subject to workload management considerations.*
- *In any case, in view of the situation in RAN1 discussions at RAN1 #109-e, it would be necessary for RAN to at least clarify/confirm the scope.*

Proposals:

- *RAN to clarify the split of responsibilities between RAN1 and RAN4 on co-channel and adjacent channel scenarios for Rel-18 studies on Duplex Evolution.*
- *Update the following objective in Rel-18 SID for Duplex Evolution as below:*
  - *Study the performance of the identified schemes as well as the impact on legacy operation assuming their co-existence in co-channel scenarios ~~and adjacent channels~~ (RAN1).*
  - *Study the performance of the identified schemes as well as the impact on legacy operation assuming their co-existence in adjacent channels (RAN4).*

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