3GPP TSG RAN Meeting #102
Edinbough, Scotland, December 11-15, 2023

RP-233470

Scope on Duplex Evolution

Agenda: 9.1.1.3
Source: Samsung
Document for : Discussion and decision

Rel-19 WID: RAN1 scope

Motivations and background information on duplex SI result can be found in RP-232023

Based on the WG-level discussion, we propose the followings

Proposal 1

Support assumptions and objectives proposed by co-source companies in RP-233669 with change for CLI part

Specify UE-UE co-channel CLI handling and gNB-gNB co-channel CLI handling for SBFD operation [RAN1, RAN2, RAN3]

- Down select one from UE-UE co-channel CLI handling and one from gNB-gNB co-channel CLI handling listed in TR 38.858

~~NOTE1: This objective will be revisited at RAN#XYZ subject to RAN1's progress.~~

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Rel-19 WID: discussion points

Random access, dynamic SBFD (L1/L2 based TDD fallback), UE-side SBFD (FR2-1)

Random access using SBFD subbands for UEs in RRC_IDLE/INACTIVE mode

- For FR1 TDD 30 kHz DDDSU, random access in SBFD UL subband allows to use the Rel-15 long preamble formats resulting in 6-8 dB improved UL link budget (request from operators)
- However, during Rel-18, such benefit and solutions are not identified, so that additional study may be necessary to consider PRACH coverage gain with SBFD

Proposal 2: include the following in WID

Study, and if justified, specify SBFD operation to support random access using SBFD subbands by UEs in RRC_IDLE/INACTIVE mode (RAN1/RAN2)

Rel-19 WID: discussion points

Random access, dynamic SBFD (L1/L2 based TDD fallback), UE-side SBFD (FR2-1)

Dynamic SBFD (L1/L2 based TDD fallback) operation

- gNB-side dynamic SBFD operation is implicitly supported by SBFD configuration/scheduling;
- The schemes and benefit of TDD fallback have not identified in Rel-18 SI
- This will increase Rel-19 specification effort/overall scope and require additional evaluations for gains/benefits

Proposal 3

Support only semi-static indication for both frequency and time location of SBFD subbands to UE and no L1/L2 fallback operation in Rel-19

Rel-19 WID: discussion points

Random access, dynamic SBFD (L1/L2 based TDD fallback), UE-side SBFD (FR2-1)

UE-side full-duplex or gNB-side SBFD using partial/fully overlapping subbands in FR2-1

- Not evaluated in Rel-18 SID and not deemed urgent for Rel-19 WID

Proposal 4

No support for UE-side SBFD work in Rel-19

Rel-19 WID: RAN4 scope

Based on the WG-level discussion, we propose the followings

Proposal 5

RAN4 (core part):

- BS RF requirements for SBFD operation at gNB side.
- RRM core requirements for UE-UE and gNB-gNB co-channel CLI measurement and reporting for SBFD operation
- Other RRM core requirements for SBFD operation, if identified.

RAN4 (performance part):

- BS RF conformance requirements to support SBFD operation at gNB side
- Necessary RRM performance requirements to support SBFD operation
- Necessary BS and/or UE demodulation performance requirements to support SBFD operation

Note: At least adjacent channel coexistence between two operators should be considered as a minimum.

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