**3GPP TSG RAN WG1 #122bis R1-2507966**

**Prague, Czech, Oct 13th – 17th, 2025**

**Source: Ad-Hoc Chair (NTT DOCOMO)**

**Title: Session Notes of AI 9.3**

**Agenda Item: 9.3**

**Document for: Endorsement**

* 1. ***UE features for evolution of NR duplex operation: SBFD***

Proposal 4-1-1:

Update FG 60-7b and 60-7c as follows:

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| 60-7b | Separate UL resource muting for Type-1 CG PUSCH for CP-OFDM waveform | Support of separate UL resource muting for Type-1 CG PUSCH for CP-OFDM waveform | FFS | ~~[~~YES~~]~~ | ~~[~~n/a~~]~~ | ~~[~~Separate UL resource muting for Type-1 CG PUSCH for CP-OFDM waveform is not supported~~]~~ | ~~[~~Per Band~~]~~ | ~~[~~TDD only~~]~~ | ~~[~~n/a~~]~~ | ~~[~~n/a~~]~~ | FFS: Whether/how to capture maximum number of UL muting symbols per slot | ~~[~~Optional with capability signalling~~]~~ |
| 60-7c | Separate UL resource muting for Type-1 CG PUSCH for DFT-s-OFDM waveform | Support of separate UL resource muting for Type-1 CG PUSCH for DFT-s-OFDM waveform | FFS | ~~[~~YES~~]~~ | ~~[~~n/a~~]~~ | ~~[~~Separate UL resource muting for Type-1 CG PUSCH for DFT-s-OFDM waveform is not supported~~]~~ | ~~[~~Per Band~~]~~ | ~~[~~TDD only~~]~~ | ~~[~~n/a~~]~~ | ~~[~~n/a~~]~~ | FFS: Whether/how to capture maximum number of UL muting symbols per slot | ~~[~~Optional with capability signalling~~]~~ |

Proposal 4-1-2:

* Adopt FG 60-7 and 5-19 for prerequisite FG(s) of FG 60-7b
* Adopt FG 60-7a and 5-19 for prerequisite FG(s) of FG 60-7c

Proposal 4-1-3:

Regarding “FFS: Whether/how to capture maximum number of UL muting symbols per slot” in FG 60-7b/7c, adopt **Alt-3**

* Alt-1: Capture maximum number of UL muting symbols per slot
  + Alt-1.1: Add a component “Maximum of 2 UL muting symbols per slot”
  + Alt-1.2: Add a component “Maximum number of UL muting symbols per slot”, with candidate values {2, 4}
* Alt-2: Decision in maintenance needed in prior
* Alt-3: Remove FFS without additional update

Proposal 4-2-1:

Update FG 60-8 as follows:

* Confirm “aperiodic” in FG name, and update the text for “consequence …” column accordingly
* Define no prerequisite FG
* Adopt n/a for FR1/FR2 differentiation and capability interpretation for mixture of FDD/TDD and/or FR1/FR2
* Add “Candidate values for component 4 are {8, 16, 32, 64}”
* Remove “FFS: whether each of components within brackets is separate FG or require reporting”
* (TBC) Remove “FFS: other potential component/FG”

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| 60-8 | L1 CLI-RSSI measurement and ~~[~~aperiodic~~]~~ reporting | 1. Aperiodic L1 CLI-RSSI reporting on PUSCH  2. Support of CLI-RSSI measurement resource configured in one UL subband only, in one DL subband only, or across two DL subbands only.  3. Periodic and aperiodic CLI-RSSI measurement resource  4. Maximum number of configured L1 CLI-RSSI measurement resources (sum of aperiodic and periodic, and semi-persistent if supported) across all CCs  ~~FFS: whether each of components within brackets is separate FG or require reporting~~  ~~FFS: other potential component/FG~~ | ~~FFS~~ | YES | n/a | ~~[Aperiodic]~~ L1 CLI-RSSI measurement and aperiodic reporting is not supported | Per band | TDD only | ~~[~~n/a~~]~~ | ~~[~~n/a~~]~~ | Candidate values for component 4 are {8, 16, 32, 64} | Optional with capability signalling |

Proposal 4-2-3:

Update FG 60-8a as follows:

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| 60-8a | Support of periodic L1 CLI-RSSI reporting on PUCCH | 1. Periodic L1 CLI-RSSI reporting on PUCCH | 60-8 | YES | n/a | Support of periodic L1 CLI-RSSI reporting on PUCCH is not supported | Per band | TDD only | n/a | n/a |  | Optional with capability signalling |

Proposal 4-3-1:

Update FG 60-9 as follows:

* Remove “FFS: whether each of components within brackets is separate FG or require reporting”
* Define no prerequisite FG
* Revise consequence such as “~~[Aperiodic]~~ L1 SRS-RSRP measurement and aperiodic reporting is not supported”
* Add “Candidate values for component 2 are {4, 8, 16, 32}” in Note column
* (TBC) Remove “FFS: other potential component/FG”

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| 60-9 | L1 SRS-RSRP measurement and aperiodic reporting | 1. Aperiodic L1 SRS-RSRP reporting on PUSCH, and periodic and aperiodic SRS-RSRP measurement resource  2. Maximum number of L1 SRS-RSRP measurement resources across all CCs  ~~FFS: whether each of components within brackets is separate FG or require reporting~~  ~~FFS: other potential component/FG~~ | ~~FFS~~ | YES | n/a | ~~[Aperiodic]~~ L1 SRS-RSRP measurement and aperiodic reporting is not supported | Per band | TDD only | n/a | n/a | Candidate values for component 2 are {4, 8, 16, 32} | Optional with capability signalling |

Proposal 3-4-1:

For Msg.3 repetition in SBFD symbols, RAN1 to down-select one of the following alternatives below in RAN1#123:

* Alt-1: A new FG for Msg.3 repetition in SBFD symbols is introduced as follows:

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| 60-6 | Msg.3 repetition in SBFD symbols | Support of repetition of PUSCH transmission scheduled by RAR UL grant and DCI format 0\_0 with CRC scrambled by TC-RNTI in SBFD symbols with separate power control parameter | 60-3 or 60-4, 30-6 | YES | n/a | Msg.3 repetition in SBFD symbols is not supported | Per Band | TDD only | n/a | n/a |  | Optional with capability signalling |

* Alt-2: Adopt the following updates in FG 60-1
  + Add a new component: “X. Support of Msg.3 repetition in SBFD symbols”
  + Add in Note column: “Component X applies only when the UE reports FG 30-6 in the same band”

Proposal 2-1-0:

* Remove “[“ from Component 2 in FG 60-1
* Remove “FFS: Whether to include two DL subband support in component 2”

Question 2-1-1 (for checking maintenance status):

Companies are encouraged to provide views on how to resolve “FFS: details of counting” in FG 60-1:

* Alt-1: Update candidate values for Component 11
  + Alt-1.1: Component 11 candidate values: {“with factor-of-two relaxation for CSI timeline”, “without factor-of-two relaxation”, “with factor-of-two relaxation for active CSI-RS resource/port counting”, “no relaxation”}
  + Alt-1.2: Component 11 candidate values: {“with factor-of-two relaxation for CSI timeline”, “without factor-of-two relaxation”, “with factor-of-two relaxation for active CSI-RS resource/port counting”, ““with factor-of-two relaxation for active CSI-RS port counting”, “no relaxation”}
* Alt-2: decision in maintenance needed in prior
* Alt-3: No need to consider CSI resource/port counting relaxation

Question 2-1-2 (for checking the need for separate FG for Q2-1-2-2):

Companies are encouraged to provide views on the need for the following new components:

* Q2-1-2-1: Unaligned boundaries between SBFD subband(s) and RBG, CSI reporting subband, CSI-RS resource, PRG
* Q2-1-2-2: For PUSCH repetition type B, a nominal repetition is segmented into actual repetitions around boundary of SBFD symbols and non-SBFD symbols.

Proposal 2-2-1:

Update FG 60-2 as follows:

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| 60-2 | Reception across SBFD symbols and non-SBFD symbols in different slots (Configuration 2) | 1. Support of PDSCH reception across SBFD symbols and non-SBFD symbols (Configuration 2)  ~~FFS: Other component(s)~~  ~~FFS: whether component 2 is defined as separate FG~~ | 60-1 | YES | n/a | Reception across SBFD symbols and non-SBFD symbols in different slots (Configuration 2) is not supported | Per Band | TDD only | n/a | n/a |  | Optional with capability signalling |

Proposal 2-2-2:

Update FG 60-2a as follows:

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 60-2a | Transmission across SBFD symbols and non-SBFD symbols in different slots (Configuration 2) | 1. Support of UL transmission across SBFD symbols and non-SBFD symbols (Configuration 2) | ~~FFS~~ 60-1 | ~~[~~YES~~]~~ | ~~[~~n/a~~]~~ | ~~[~~Transmission across SBFD symbols and non-SBFD symbols in different slots (Configuration 2) is not supported~~]~~ | ~~[~~Per band~~]~~ | ~~[~~TDD only~~]~~ | ~~[~~n/a~~]~~ | ~~[~~n/a~~]~~ |  | ~~[~~Optional with capability signalling~~]~~ |

R1-2506773 Discussion on UE features for SBFD ZTE Corporation, Sanechips

R1-2506801 Discussion on UE features for SBFD Spreadtrum, UNISOC

R1-2506883 UE features for evolution of NR duplex operation: SBFD vivo

R1-2506949 UE features for evolution of NR duplex operation Huawei, HiSilicon

R1-2506973 UE features for Rel-19 SBFD operation Xiaomi

R1-2507074 SBFD UE features Nokia

R1-2507101 UE features for SBFD CATT

R1-2507150 Discussion on UE features for Rel-19 NR Duplex OPPO

R1-2507238 UE features for NR duplex operation Samsung

R1-2507461 Discussion on UE features for evolution of NR duplex operation: SBFD Ofinno

R1-2507575 UE features for evolution of NR duplex operation MediaTek Inc.

R1-2507638 On UE features for evolution of NR duplex operation Google

R1-2507753 UE features for evolution of NR duplex operation Qualcomm Incorporated

R1-2507760 UE features for SBFD Ericsson

R1-2507797 Discussion on UE features for evolution of NR duplex operation NTT DOCOMO, INC.