**3GPP TSG RAN WG1 #122bis R1-2507970**

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

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

**Title: Session Notes of AI 9.8**

**Agenda Item: 9.8**

**Document for: Endorsement**

* 1. ***UE features for NTN for NR Phase 3***

Proposal 4.3-1:

Update FG 65-3-1 as follows:

* Type column is per band
* Confirm “Note: This UE feature group is applicable only for bands in Tables 5.2.2-1 in TS 38.101-5”, i.e., FG 65-3-1 is applicable only to FR1-NTN bands

Proposal 4.3-2:

Adopt Alt-1 for FG 65-3-1.

* Alt-1: Confirm Component 4 as it is
* Alt-2: Remove Component 4
* Alt-3: Merge Component 4 with Component 5, i.e., remove the current component 4 and revise component 5 as follows:
	+ 5. Supported OCC length during which UE is able to maintain power consistency and phase continuity to support inter-slot OCC for PUSCH over consecutive slots

Proposal 4.3-3:

Regarding FG 65-3-1,

* Support GSO/NGSO differentiation
* Adopt Alt-2 below
	+ Alt-1: Add component 6 of “Supported satellite orbit for PUSCH with OCC” in components column and add “Component 6 candidate values: {(GSO), (NGSO), (GSO and NGSO)}” in note column
	+ Alt-2:
		- Update component 5 to “Supported OCC length for GSO scenarios” in components column and update the candidate values to “Component 5 candidate values: {(N/A), (2), (2 and 4)}” in note column
		- Add component 6 of “Supported OCC length for NGSO scenarios” in components column and add “Component 6 candidate values: {(N/A), (2), (2 and 4)}” in note column
	+ Alt-3: Define separate FGs between GSO and NGSO

Proposal 4.3-4:

For FG 65-3-1,

* Put 26-1 and one of {5-14, 5-16, 5-17} in prerequisite column

Proposal 4.3-5:

For FG 65-3-1,

* Update component 3 to “~~Support collision handling between PUCCH and PUSCH with OCC and support handling of a PUSCH repetition drop of an OCC group~~ Support collision handling between PUSCH with OCC and the following conditions: PUCCH, Cell DRX operation, another PUSCH overlap, and conditions related to RedCap UE.”

Proposal 4.2-1:

Update FG 65-2-1 as follows:

* Confirm FG name, Component 2, the third Note, and the fifth Note as they are
* Remove “FFS: whether to divide this FG into two separate FGs between case 3 and case 4”
* Remove “FFS: A UE that supports FG 28-3 in NTN band must support this FG”

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| 65-2-1 | Handling collision Case 3 ~~[~~and collision Case 4~~]~~ for half-duplex FDD operation for (e)RedCap UE | 1. Support handling collision Case 3~~[~~2. Support handling collision Case 4~~]~~~~FFS: whether to divide this FG into two separate FGs between case 3 and case 4~~ | FFS: 26-1, 26-4, 28-1, 28-3, 48-1, 48-2 | YES | N/A | Handling collision Case 3 and collision Case 4 for half-duplex FDD operation for (e)RedCap UE is not supported | Per band | N/A | N/A | N/A | Note: This UE feature group is applicable only for bands in Tables 5.2.2-1 in TS 38.101-5Note: collision Case 3: Semi-statically configured DL reception collides with semi-statically configured UL transmission~~[~~Note: collision Case 4: Dynamically scheduled DL reception collides with dynamic scheduled UL transmission~~]~~Note: this FG is for FR1 FDD onlyNote: collision Case 3 handling is for RRC CONNECTED and INACTIVE states~~[~~, and collision Case 4 is for RRC CONNECTED state only~~]~~ | Optional with capability signaling~~FFS: A UE that supports FG 28-3 in NTN band must support this FG~~ |

Proposal 4.2-2:

For FG 65-2-1,

* Put 26-1 and 28-3 in prerequisite column

Proposal 4.1.1-1/4.1.1-2:

For FG 65-1-1,

* Put “~~No~~ Yes” in “Need for the gNB to know if the feature is supported” column
* Confirm “Optional with~~out~~ capability signalling” in mandatory/optional column
* Remove “FFS: A UE that supports Rel-19 NR-NTN must support this FG”

Proposal 4.1.2-1:

Regarding FG 65-1-2/3 and 67-9/10:

* Remove “FFS: whether to merge this FG with FG(s) for PDCCH repetition for other than Type0 PDCCH CSS” from FG 65-1-2 and FG 67-9
* Remove “FFS: whether to merge this FG with FG(s) for SIB1 PDSCH repetition” from FG 65-1-2
* Define FG 65-1-3 and 67-10 as follows

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| 65-1-3 | PDCCH repetition for Type ~~[~~0A/0B/1/1A/2/2A~~]~~ PDCCH CSS | 1. Support reception of PDCCH repetition for Type ~~[~~0A/0B/1/1A/2/2A~~]~~ PDCCH CSS2. Required number of BDs for the two PDCCH candidates in RRC CONNECTED mode | FFS | Yes | N/A | ~~FFS~~ PDCCH repetition for Type 0A/0B/1/1A/2/2A PDCCH CSS is not supported | Per band | N/A | N/A | N/A | Note: This UE feature group is applicable only for bands in Tables 5.2.2-1 in TS 38.101-5Candidate values for component 2: {1, 2} | Optional with capability signaling |
| 67-10 | PDCCH repetition for Type ~~[~~0A/0B/1/1A/2/2A~~]~~ PDCCH CSS for TN | 1. Support reception of PDCCH repetition for Type ~~[~~0A/0B/1/1A/2/2A~~]~~ PDCCH CSS for TN2. Required number of BDs for the two PDCCH candidates in RRC CONNECTED mode | FFS | Yes | N/A | ~~FFS~~ PDCCH repetition for Type 0A/0B/1/1A/2/2A PDCCH CSS for TN is not supported | Per band | N/A | N/A | N/A | Note: This UE feature group is applicable only for FR1 TN Candidate values for component 2: {1, 2} | Optional with capability signaling |

Proposal 4.1.2-2:

Regarding FG 65-1-3 and 67-10,

* Remove FFS from Prerequisite column

Proposal 4.1.2-3:

Regarding FG 65-1-2 and 67-9,

* Put “YES” in “Need for the gNB to know if the feature is supported” column
* Confirm “Optional with capability signalling” in mandatory/optional column

Proposal 4.1.3-1:

Regarding FG 65-1-5:

* Remove “[FFS other components]”

Proposal 4.1.3-2:

Adopt Alt-1 for prerequisites of FG 65-1-5:

* Alt-1: One of {5-17a and 16-2b-5}
* Alt-2: None

Proposal 4.1.3-3:

Adopt Alt-2 for mandatory/optional column of FG 65-1-5:

* Alt-1: Optional with capability signaling
* Alt-2: Optional without capability signaling

Proposal 4.1.3-4:

Regarding FG 65-1-5, confirm the note with yellow-highlight with the following Alt-1:

* Alt 1: ~~[~~A UE that includes ~~[XXX (signaling to be defined in 38.321)]~~ LCID codepoint = one of {8, 9, …, 19} for UL CCCH when the LX field is set to 1 must support FG 65-1-5~~]~~
* Alt 2: ~~[~~A UE that ~~includes [XXX (signaling to be defined in 38.321)]~~ indicates support for Msg4 repetition through LCID state as part of the Msg3 as defined in TS 38.321 must support FG 65-1-5~~]~~

R1-2506787 On UE features for NR-NTN Phase 3 Ericsson

R1-2506802 Discussion on UE features for NTN Spreadtrum, UNISOC

R1-2506885 UE features for NTN for NR Phase 3 vivo

R1-2506913 Discussion on the UE feature for NR-NTN Phase-3 ZTE Corporation, Sanechips

R1-2506938 UE features for NTN for NR phase 3 Huawei, HiSilicon

R1-2506974 UE features for NTN for NR Phase 3 Xiaomi

R1-2507005 Discussion on UE features for NTN for NR Phase 3 CMCC

R1-2507077 NR-NTN phase 3 UE features Nokia

R1-2507102 Discussion on UE features for NTN for NR Phase 3 CATT

R1-2507136 Discussion on UE features for NTN for NR Phase 3 OPPO

R1-2507240 UE features for NR NTN Phase 3 Samsung

R1-2507495 Discussion on UE features for NR NTN Phase 3 ETRI

R1-2507625 Discussions on UE Features NR NTN Ph3 MediaTek Inc.

R1-2507661 Views on UE features for Rel-19 NR-NTN Apple

R1-2507707 UE features for NTN for NR Phase 3 Qualcomm Incorporated

R1-2507800 Discussion on UE features for R19 NR NTN NTT DOCOMO, INC.