**3GPP RAN WG2 Meeting #126 R2-2405754**

**Fukuoka, Japan, May 20th – 25th, 2024**

**Agenda Item: 7.7.1**

**Source: InterDigital**

**Title: [DRAFT] Report of [AT126][304][NR NTN Enh] MAC CR**

**Document for: Discussion, Decision**

1. Introduction

This document is a report of the following email discussion:

* [AT126][304][NR NTN Enh] MAC CR (InterDigital)

 Scope: Discuss how to clarify / restructure the change in R2-2405374

 Intended outcome: agreeable MAC CR

 Deadline for rapporteur's CR (in R2-2405754): Friday 2024-05-24 08:00

# MAC CR Restructuring

Agreements from RAN2#125bis are currently captured in R2-2405374 as follows:

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| 1> if an indication of uplink synchronization loss is received from upper layers (see clause 5.2.2.6 TS 38.331 [5]):2> flush all HARQ buffers;2> not perform any uplink transmission on the Serving Cell.1> if an indication of uplink synchronization loss due to satellite switch with re-synchronization is received from upper layers (see clause 5.7.19 of TS 38.331 [5]):2> not perform any uplink transmission on the Serving Cell. |

In online session, concerns were raised that “uplink synchronization loss” is a general term and may include uplink synchronization loss due to satellite switch with re-synchronization as a subcase, causing the UE to incorrectly flush the HARQ buffers based on the first clause.

A revised text proposal is provided below to more explicitly highlight the different cases and behaviour:

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| 1> if an indication of uplink synchronization loss or uplink synchronization loss due to satellite switch with re-synchronization is received from upper layers (see clause 5.2.2.6 and 5.7.19 of TS 38.331 [5]):2> if uplink synchronization loss is due to satellite switch with re-synchronization (see clause 5.7.19 of TS 38.331 [5]):3> not perform any uplink transmission on the Serving Cell.2> else:3> flush all HARQ buffers;3> not perform any uplink transmission on the Serving Cell. |

**1) Companies are invited to comment below only if there are strong concerns with the revised text proposal. If a company does not comment it is assumed agreeable.**

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| **Company** | **Additional comments**  |
| TCL | We prefer to modify the text as given below :1> if an indication of uplink synchronization loss ~~or uplink synchronization loss due to satellite switch with re-synchronization~~ is received from upper layers (see clause 5.2.2.6 and 5.7.19 of TS 38.331 [5]):2> if uplink synchronization loss is due to satellite switch with re-synchronization (see clause 5.7.19 of TS 38.331 [5]): |
| Huawei, HiSilicon | To be more concise, we suggest:The MAC entity shall for each Serving Cell:…1> if an indication of uplink synchronization loss is received from upper layers (see clause 5.2.2.6 and 5.7.19 of TS 38.331 [5]):2> not perform any uplink transmission on the Serving Cell;2> if uplink synchronization loss is not due to satellite switch with re-synchronization (see clause 5.7.19 of TS 38.331 [5]):3> flush all HARQ buffers. |
| Samsung | Prefer HW’s suggestion |
| ZTE | Huawei’s revision is cleaner |
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Furthermore, it was noted offline that the latest version of the RRC CR has updated the parameter names for NTN coverage enhancements as follows:



A text proposal is provided below to update the parameters names in MAC as well:

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| **Table 6.2.1-2c: Values of LCID for UL-SCH when the LX field is set to 1**

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| **Codepoint** | **Index** | **LCID values** |
| 0 | (216 + 320) | CCCH of size 48 bits for an eRedCap UE  |
| 1 | (216 + 321) | CCCH of size 64 bits for an eRedCap UE |
| 2 | (216 + 322) | CCCH of size 48 bits for PUCCH repetition of Msg4 HARQ-ACK, except for an (e)RedCap UE |
| 3 | (216 + 323) | CCCH of size 64 bits for PUCCH repetition of Msg4 HARQ-ACK, except for an (e)RedCap UE |
| 4 | (216 + 324) | CCCH of size 48 bits for PUCCH repetition of Msg4 HARQ-ACK of a RedCap UE |
| 5 | (216 + 325) | CCCH of size 64 bits for PUCCH repetition of Msg4 HARQ-ACK of a RedCap UE |
| 6 | (216 + 326) | CCCH of size 48 bits for PUCCH repetition of Msg4 HARQ-ACK of an eRedCap UE |
| 7 | (216 + 327) | CCCH of size 64 bits for PUCCH repetition of Msg4 HARQ-ACK of an eRedCap UE |
| 8 to 63 | (216 + 328) to (216 + 383) | Reserved |
| NOTE 1: The MAC entity may use the code point corresponding to a given feature or feature combination in Table 6.2.1-2c only if network indicates support for the corresponding feature or feature combination.NOTE 2: CCCH of size 48 bits and CCCH of size 64 bits are referred to as CCCH and CCCH1, respectively, in TS 38.331 [5].NOTE 3: For UE capable of PUCCH repetition of Msg4 HARQ-ACK, the MAC entity uses the code points corresponding to PUCCH repetition of Msg4 HARQ-ACK if *numberOfMsg4HARQ-ACK-Repetitions* is configured, and if *rsrp-ThresholdMsg4HARQ-ACK* is configured, the RSRP of the downlink pathloss reference is less than *rsrp-ThresholdMsg4HARQ-ACK.* |

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**2) Do you agree with the above text proposal?**

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| **Company** | **Agree/Disagree** | **Additional comments**  |
| Xiaomi | Yes |  |
| TCL  | Agree  |  |
| vivo | Agree | Alignment with RRC spec is needed.  |
| Huawei, HiSilicon | Yes |  |
| Samsung | Agree |  |
| ZTE | Agree |  |
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