**3GPP TSG-RAN WG2 Meeting #126 R2-240xxxx  
Fukuoka, Japan May 22nd – 26th, 2024**

**Agenda Item :** x.x.x (correction)

**Source :** LG Electronics Inc.

**Title :** Discussion on corrections for multicast DRX to support NTN

**Document for :** Discussion and Decision

# Discussion

To complete CRs for supporting multicast DRX over NTN, two discussion points identified during offline AT126#003 discussion should be finalized.

The first discussion point is that the drx-HARQ-RTT-TimerDL is extended only when downlinkHARQ-FeedbackDisabled is configured.

During the offline discussion, Huawei suggests that the drx-HARQ-RTT-TimerDL is extended only when downlinkHARQ-FeedbackDisabled is configured since downlinkHARQ-FeedbackDisabled may not be configured in HAPS case. However, majority companies thought that simple update is sufficient and the extension of drx-HARQ-RTT-TimerDL is no problem even if the downlinkHARQ-FeedbackDisabled is configured since the discrepancy may not have much difference, i.e., UE-gNB RTT might be calculated to zero. The rapporteur has sympathy with the majority views and Option 1 is implemented in the latest CRs, but it would be good to check all company’s views on this point.

With the above understanding, two options are highlighted in yellow as follows.

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| **Option 1. (rapporteur’s proposal which is captured as in updated CR, i.e., R2-2406001)**  2> if HARQ feedback for MBS multicast is enabled:  3> if the MAC PDU is received on a non-terrestrial network and the UE supports *extension-HARQ-RTT-TimerDLForMulticastMBS*:  4> set *HARQ-RTT-TimerDL-NTN* for the corresponding HARQ process equal to *drx-HARQ-RTT-TimerDL* plus the latest available UE-gNB RTT value;  4> start the *HARQ-RTT-TimerDL-NTN* for the corresponding HARQ process in the first symbol after the end of the corresponding transmission carrying the DL HARQ feedback.  3> else:  4> start the *drx-HARQ-RTT-TimerDL* for the corresponding HARQ process in the first symbol after the end of the corresponding transmission carrying the DL HARQ feedback. |
| **Option 2. (Huawei’s proposal)**  2> if HARQ feedback for MBS multicast is enabled:  3> if this Serving Cell is configured with *downlinkHARQ-FeedbackDisabled* and the UE supports *extension-HARQ-RTT-TimerDLForMulticastMBS*:  4> set *HARQ-RTT-TimerDL-NTN* for the corresponding HARQ process equal to *drx-HARQ-RTT-TimerDL* plus the latest available UE-gNB RTT value;  4> start the *HARQ-RTT-TimerDL-NTN* for the corresponding HARQ process in the first symbol after the end of the corresponding transmission carrying the DL HARQ feedback.  3> else:  4> start the *drx-HARQ-RTT-TimerDL* for the corresponding HARQ process in the first symbol after the end of the corresponding transmission carrying the DL HARQ feedback. |

**Question 1. Which Option is acceptable to you?**

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| Company | Option(s) | Comment |
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**Proposal 1. To be updated.**

The second discussion point is how to update the definition for HARQ-RTT-TimerDL-NTN. The updated text is as follows.

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| The following MAC timers are used for DRX operation in a non-terrestrial network:  - *HARQ-RTT-TimerDL-NTN* (per DL HARQ process configured with HARQ feedback enabled or per DL HARQ process for MBS multicast): the minimum duration before a DL assignment for HARQ retransmission is expected by the MAC entity; |

Since RAN2 has agreed that MBS multicast HARQ configuration takes precedence, majority companies think that the HARQ-RTT-TimerDL-NTN is extended for MBS multicast DRX. For this reason, the definition of the HARQ-RTT-TimerDL-NTN was updated as the option 1. However, some companies thought the legacy wording could cover MBS multicast already as it says “per DL HARQ process” and the updated text is not needed as the option 2. The rapporteur understands that the option 1 is clearer than the option 2 and the option 1 is captured in the latest CR.

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| **Option 1. (rapporteur’s proposal which is captured as in updated CR, i.e., R2-2406001)**  The following MAC timers are used for DRX operation in a non-terrestrial network:  - *HARQ-RTT-TimerDL-NTN* (per DL HARQ process configured with HARQ feedback enabled or per DL HARQ process for MBS multicast): the minimum duration before a DL assignment for HARQ retransmission is expected by the MAC entity; |
| **Option 2**  Remove the updated text, i.e., Do not change the definition of HARQ-RTT-TimerDL-NTN. |

**Question 2. Which Option is acceptable to you?**

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**Proposal 2. To be updated.**

# Conclusion

To be updated.