**3GPP TSG-RAN WG1 Meeting #116 R1-240XXX**

**Athens, Greece, February 26th – March 1st, 2023**

**Title:** **LS on improved GNSS operations in Rel-18 IoT NTN**

**Response to:** N/A

**Release:** Rel-18

**Work Item:** IoT\_NTN\_enh-Core

**Source:** RAN WG1

**To:** RAN WG2

**CC:**

**Contact Person:**

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**Send any reply LS to: 3GPP Liaisons Coordinator:** [**mailto:3GPPLiaison@etsi.org**](mailto:3GPPLiaison@etsi.org)

**Attachments:** None

**1. Overall description**

RAN1 has discussed the end of duration X when timeAlignmentTimer is not infinity for improved GNSS operations and made the conclusion on the following:

|  |
| --- |
| Agreement  Send an LS to RAN2 with the following:  From RAN1 perspective, when timeAlignmentTimer is not infinity, the following alternatives were considered, and it is up to RAN2 to specify:   * + Alt-1: the end of X should be at the point where new timer ULTransmissionExtentionTimer expires and ULTransmissionExtentionTimer is reset with length equal to remaining timeAlignmentTimer every time when a MAC CE (to be defined by RAN2) is received   + Alt-1a: the end of X should be at the point where new timer ULTransmissionExtentionTimer expires and ULTransmissionExtentionTimer is set to remaining timeAlignmentTimer at the start point of X and ULTransmissionExtentionTimer is reset with length equal to configured timeAlignmentTimer value every time when a MAC CE (to be defined by RAN2) is received   + Alt-2: the end of X should be at the point where timeAlignmentTimer expires and timeAlignmentTimer is reset every time when a legacy MAC TAC is received   Note 1: It is up to RAN2 to decide whether the MAC CE is the legacy TAC or a new TAC or a new MAC CE.  Note 2: It is up to RAN2 to implement the above behaviour based on new timer, existing timer, or by extending GNSS validity.  Note 3: For Alt-1a, from RAN1 perspective, eNB should be able to update TA without extending X |

**2. Actions:**

RAN1 respectfully asks RAN2 to take the above RAN1 agreement into account.

**3. Dates of next TSG-RAN WG1 meetings:**

TSG-RAN WG1 Meeting #116-bis May 15 – April 19, 2024 Changsha, China

TSG-RAN WG1 Meeting #117 May 20 – May 24, 2024 Fukuoka, Japan