**3GPP TSG RAN WG2#126 *R2-240xxxx***

**Fukuoka, Japan, May 20th – 24th, 2024**

**Title: [DRAFT] LS on UL synchronization for contention based msg3 transmission without Msg1/Msg2**

**Response to:**

**Release: Rel-19**

**Work Item: IoT\_NTN\_Ph3-Core**

**Source: ZTE [To be TSG RAN WG2]**

**To: RAN4, RAN1**

**Cc: RAN3?**

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Attachments: none

**1. Overall Description:**

RAN2 has discussed the objective of uplink capacity enhancement for R19 IoT NTN.The following agreements related to general aspect has been achieved in RAN2#125bis:

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| **Agreements (RAN2#125bis):**1. Both NB-IoT and eMTC are within scope of uplink capacity enhancements2. Both C-plane and U-plane solutions are within scope of uplink capacity enhancements.3. Only CIoT EPS is within scope of uplink capacity enhancements |

Furthermore, in RAN2#126 meeting, the following agreements related to Msg3 transmission for uplink capacity enhancement have been achieved:

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| **Agreements (RAN2#126)**:1. RAN2 focusses the study on contention-based Msg3 transmission to complete an EDT-like transaction (FFS on the details of Msg3. FFS on the procedural steps, e.g. how much we reuse of EDT and PUR procedures. FFS on allocation of resources).3. If an IoT NTN UE in IDLE state is to use the new R19 contention-based procedure, the UE needs to verify/update the uplink synchronization (e.g. get GNSS fix, acquire TA) just before sending msg3. |

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Based on the above agreements, RAN2 kindly asks RAN4 and RAN1, for an RRC Idle UE, whether the UE calculated TA based on UE position and satellite position can satisfy the requirement of Msg3 transmission without Msg1/Msg2.

**2. Actions:**

**To RAN4 and RAN1:**

**ACTION:** RAN2 respectfully requests RAN4 and RAN1 to take above RAN2 progress into account and give an answer on whether the UE calculated TA based on UE position and satellite position can satisfy the requirement of Msg3 transmission without Msg1/Msg2.

**3. Date of Next RAN2 Meetings:**

RAN2#127 August 19th – 23rd 2024 Maastricht, Netherlands

RAN2#127-bis October 14th – 18th, 2024 TBD, China