3GPP TSG RAN WG2 Meeting #126 R2-2405762

Fukuoka, Japan, May 20-24

**Title: [Draft] LS on DL coverage enhancements**

**Response to: -**

**Release: Release 19**

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

**Source: CMCC [to be RAN2]**

**To: RAN1**

**Cc:**

**Contact person: Li Chai**

**chaili@chinamobile.com**

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

**Attachments:** -

**1. Overall Description:**

RAN2 has started to study on RAN2 aspects of DL coverage enhancement. To progress the study, RAN2 has identified questions to RAN1 for aspects where the input is required.

Related to this, RAN2 would like to request RAN1 to provide feedback on the following questions.

**Question1 :** Can RAN1 provide the information on their progress on whether the existing SSB pattern for an NR cell (e.g. SSB position in burst, SSB index number, etc.) is changed in Rel-19 NR NTN, and whether the SSB periodicity is extended compared with existing TN values?

**Question2 :** Can RAN1 provide the information on whether/how the solution RAN1 is investigating is expected to impact common control signalling for UEs in RRC idle / RRC inactive?

**Question3 :**  Can RAN1provide the feedback on whether UL beam hopping is also being studied in RAN1 (and whether this is separate from DL beam hopping)?

**Question4 :** RAN2 would like to remind RAN1 that satellite beams are currently not visible to UEs and any decision about different beam status (i.e. "off", "common messages only" and "active traffic") will have to relate to beams visible to the UE (e.g. SSB beams). RAN2 would also like to know whether RAN1 will reuse the currently defined beam status or define new beam status for beams visible to the UE.

**Question5 :** Can RAN1provide the feedback on whether the beam status in different beam footprints of one cell are the same or can be different in any given time, i.e.. the beam status is cell specific or beam specific?

**Question6 :** Can RAN1 provide the information on whether the solution RAN1 is investigating allows the gNB to configure/schedule a given UE in RRC\_CONNECTED state with beams in different beam status? And if yes, what signals can be transmitted to the UE in each beam status.

**2. Actions:**

**To SA WG2:**

RAN2 kindly request RAN1 to provide feedback on above questions.

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

RAN2#127 from 2024-08-19 to 2024-08-23 Maastricht, NL

RAN2#127-bis from 2024-10-14 to 2024-10-18 China (TBC), CN