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: RAN4**

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**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 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 states? And if yes, what signalling/information can be transmitted to the UE in each beam state.

**Question4 :**  Can RAN1 and RAN4 provide the feedback on whether RAN1 is also working on UL beam hopping (and whether this is separate from DL beam hopping)?

**Question5 :** RAN2 would like to reminder RAN1 that satellite beams are currently not visible to UEs and any decision about different beam status will have to relate to beams visible to the UE (e.g. SSB beams). And whether the beam states in different beam footprints of one cell are the same or different simultaneously, e.g. the time domain configuration pattern in DL coverage enhancement is cell specific or beam specific?

**2. Actions:**

**To SA WG2:**

RAN2 kindly request RAN1/RAN4 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