3GPP TSG RAN WG2 Meeting 127 TDoc R2-2407601

Maastricht, Netherlands, Aug 19th – 23rd, 2024

**Title: LS on LTM L1 intra and inter-frequency measurements capabilities**

**Response to: R2-2406227/ R4-2410303 Reply LS on LTM L1 intra and inter-frequency measurements**

**Release: Rel-18**

**Work Item: Further NR mobility enhancements (NR\_Mob\_enh2-Core)**

**Source: RAN2**

**To: RAN WG1, RAN WG4**

**Contact person: Sudeep Palat**

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

**Attachments:** None

# 1 Overall description

Subsequent to the previous RAN2 LS (R2-2404014) on LTM L1 intra and inter-frequency measurements from R2-126bis and the RAN4 LS response (R2-2406227/R4-2410303), RAN2-127 discussed further RAN1 and RAN4 feature lists associated with Rel-18 NR\_Mob\_enh2 and would like to inform RAN1/4 of the following agreements.

1. Intra-frequency LTM RAN2 capabilities for MCG LTM and SCG LTM are defined per band and the UE sets each of them consistently across all FDD-FR1 bands, and respectively across all TDD-FR1 bands, across all TDD-FR2-1 bands and across all TDD-FR2-2 bands.
2. An additional capability bit (per UE) is introduced to indicate inter-frequency LTM (UE indicating this capability shall also support intra-frequency MCG or SCG LTM i.e., the default indicated by the per band bits).
3. No dependency between LTM and L1 measurements is captured in RAN2 specs (TS 38.306, TS 38.331, TS 38.300) for both FR1 and FR2.
4. Band Combination (BC) of the Intra and Inter-frequency L1 measurements is the BC of serving cells (Option 1 of RAN4 LS response to Q2).
	* RAN2 is further discussing whether to introduce another capability bit to indicate that UE supports inter-frequency L1 measurements only in the band combinations containing the bands of the serving cells
5. RAN2 understands only UEs supporting LTM fast processing (R4 39-6) indicate the components associated with the feature (maxNumberStoredConfigCells-r18 and maxNumberConfigs-r18).
6. UE support of R4 39-4, 39-4a and 39-5 can be indicated independently.

Additionally, RAN2 would like to check with RAN1:

Given the RAN2 agreement that RAN2 has defined separate capabilities for intra and inter frequency LTM cell switch (agreement 1 above), RAN2 would like to check with RAN1 if the UE support of RAN1 features 45-3a/4a, 45-5/5a/6 should also be indicated separately for intra and inter-frequency LTM cell switch.

# 2 Actions

**To RAN1 and RAN4:**

**ACTION:** RAN2 respectfully asks RAN1 and RAN4 to take note of the RAN2 agreements and provide feedback if any.

**To RAN1:**

**ACTION:** RAN2 respectfully asks RAN1 if UE support of RAN1 features 45-3a/4a, 45-5/5a/6 should also be indicated separately for intra and inter-frequency LTM cell switch considering that the RAN2 has defined separate capabilities for intra and inter-frequency LTM cell switch.

# 3 Dates of next TSG RAN WG2 meetings

TSG RAN WG2 Meeting #127bis 14 - 18 Oct 2024  Hefei, China

TSG RAN WG2 Meeting #128 18 - 22 Nov 2024  Orlando, USA