**3GPP T****SG-RAN WG4 Meeting #112 R4-2413936**

**Maastricht, Netherlands, Aug 19 – Aug 23, 2024**

**Title:**  **LS on measurements without gap**

**Release:** Rel-16

**Work Item:** NR\_RRM\_enh-Core

**Source:** RAN4

**To:** RAN2

**Cc:**

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**1. Overall Description:**

During Rel-18 discussion, RAN4 identified that the behaviour relative to measurements without gaps in Rel-16 was not clearly defined.

As part of this discussion, RAN2 requested information on UE behaviour when UE is reporting UE capability Rel-16 “no gap” indication in R2-2306919, which was replied with R4-2314457.

From existing Rel-16 RAN4 requirements, inter-RAT measurements did not allow for interruptions, as described in the following from TS 36.133:

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| --- |
| Inter-frequency and inter-RAT measurement requirements within this clause rely on the UE being configured with one measurement gap pattern unless the UE has signaled that it is capable according to the capability interFreqNeedForGaps or interRATNeedForGaps of conducting such measurements without gaps and without interruption. |

In Rel-18, a new capability *interRAT-NeedForInterruptionNR-r18* was introduced by RAN2 to indicate whether interruption is needed when UE reports “no gap” and the following is agreed by RAN4 regarding NR measurements with NeedForGapsInfoNR-r16 and interFrequencyMeas-Nogap-r16:

|  |
| --- |
| * **LTE – NR inter-RAT measurement:**   + interRAT-NeedForGapsNR-r16=FALSE means that the UE support measurement without gaps     - The UE may or may not cause interruption.   + if UE causes interruptions when performing measurements without gaps:     - Support early implementation of interRAT-NeedForInterruptionNR-r18:       * Optional since Rel-17 * **NR measurements without gaps**   + “no-gap” as part of NeedForGapsInfoNR-r16 means that the UE support measurement without gaps     - The UE may or may not cause interruption.   + if UE causes interruptions when performing measurements without gaps:     - Support early implementation of nr-NeedForInterruptionReport-r18:       * Optional since Rel-17 |

Considering the discussion, RAN4 believes that early implementation of nr-NeedForInterruptionReport-r18 and interRAT-NeedForInterruptionNR-r18 from Rel-17 is needed.

For this reason, RAN4 would like to respectfully ask RAN2 to consider early implementation of the Rel-18 features nr-NeedForInterruptionReport-r18 and interRAT-NeedForInterruptionNR-r18 starting from Rel-17.

**2. Actions:**

**To RAN2 group:**

**ACTION:**  RAN4 respectfully asks RAN2 to take the above information into account and to design signalling for early implementation of the Rel-18 features nr-NeedForInterruptionReport-r18 and interRAT-NeedForInterruptionNR-r18 starting from Rel-17.

**3. Dates of next TSG-RAN WG4 meetings:**

RAN4#112bis 14 – 18 October 2024 Hefei, CN

RAN4#113 18 – 22 November 2024 Orlando, US