**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:**

**Contact Person:**

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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 R2-2306919, which was replied with R4-2314457.

From existing RAN4 requirements, interRAT measurements did not allow for interruptions, as described in the following from 36.133:

|  |
| --- |
| 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.  |

The following is agreed 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
 |

RAN4 has not defined UE requirements for interRAT NR measurements in LTE allowing interruptions on PCell, PSCell and activated SCell, if configured, when UE reports “no gap”. Additionally, no interruption requirements were defined when the UE is reporting “no-gap” as part of NeedForGapsInfoNR-r16

Considering the discussion, RAN4 believes that early implementation of nr-NeedForInterruptionReport-r18 and interRAT-NeedForInterruptionNR-r18 will help solving the ambiguity in the Rel-16 requirements.

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 in their future work.

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

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

RAN4#113 18 – 22 November 2024 Orlando, US