**3GPP TSG-RAN WG3 Meeting #119bis-eR3-231623**

**Electronic meeting, April 16th – 25th 2023**

**Title: [DRAFT]** Reply LS on RAN UE Id optionality

**Response to:** LS S5-232761 / R3-231121 on RAN UE Id optionality mobility from SA5

**Release:** Release 18

**Work Item:** Study on Management of Trace/MDT phase 2 - 950034

**Source:** RAN3

**To:** SA5

**Cc:**

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# 1 Overall description

RAN3 thanks SA5 for the LS on RAN UE Id optionality.

SA5 asked RAN3 to consider and provide feedback on the following:

1. Availability of UE identifier(s) suitable for trace data correlation for Dual Connectivity and split deployments
2. Any relevant details and/or limitations in their usage, including persistency and conditionality
3. Details of any ongoing work which could affect any details provided

RAN3 has considered the above questions and would like to provide the following feedback:

1. RAN3 has discussed the availability of a UE identifier for trace data correlation for dual-connectivity and split RAN architecture, and concluded that the following 2 set of identifiers present in the RAN can be reused to correlate traces from different RAN entities, for the same session:
   * TR/TRSR (combined with IMSI/IMEI(SV) signalled by CN)
   * RAN UE ID
2. Relevant details and/or limitations in the usage of the **TR/TRSR (combined with IMSI/IMEI(SV) signalled by CN)**, including persistency and conditionality:
   * The UE identifier values provided to the TCE are provided by the CN, including for management-based trace and MDT using the Cell Traffic Trace mechanism. RAN3 enhanced the Cell Traffic Trace mechanism in Rel-16 to support trace for Dual Connectivity, allowing management-based trace data to be correlated for a session originating from the secondary node of a Dual Connectivity deployment or from the gNB-CU-UP and gNB-DU in split RAN architecture deployments.
   * For management based trace initiated to gNB-CU or gNB-CU-CP, the gNB-CU or gNB-CU-CP may trigger the Cell Traffic Trace procedure on NG interface to inform AMF to send the IMSI/IMEI(SV) to the TCE for trace data correlation.
   * For management based trace initiated to gNB-DU or gNB-CU-UP, the gNB-DU or CU-UP may initiate the Cell Traffic Trace on F1 or E1 to trigger the gNB-CU/gNB-CU-CP to send out the Cell Traffic Trace to AMF for trace data correction.
   * For management based trace to the MN in MR-DC, the MN may trigger the Cell Traffic Trace procedure on NG interface to inform AMF to send the IMSI/IMEI(SV) to the TCE for trace data correlation.
   * For management based trace to the SN in MR-DC, the SN may trigger the Cell Traffic Trace procedure on Xn to trigger the MN to send out the Cell Traffic Trace to AMF for trace data correlation.
   * UE identifiers provided by the CN cannot be created without PLMN, essentially whenever there is a new UE connection (e.g. initial context setup).
   * In case multiple cells are being traced at the same time, multiple Cell Traffic Trace messages need to be sent (i.e. 1 per cell over NG + 1 per cell over F1 or E1 or Xn).

Relevant details and/or limitations in the usage of the **RAN UE ID**, including persistency and conditionality:

* + The RAN UE ID was introduced in Rel-15 to correlate logs/traces captured from the different logical entities composing a gNB (i.e. gNB-CU-CP, gNB-CU-UP and gNB-DU), and belonging to the same UE.
  + The RAN UE ID is only used over E1 and F1 interfaces, allowing correlation within the same gNB. However, this IE has an optional presence, and the procedural text does not indicate when this IE needs to be included.
  + The RAN UE ID is not present in X2AP or XnAP procedures used for dual-connectivity, and therefore does not allow trace data correlation between MN and SN.
  + The RAN UE ID does not survive inter-node HO.

1. RAN3 has not identified any ongoing work that could affect the provided feedback.

# 2 Actions

**Action to SA5 group:**

**RAN3 respectfully asks SA5 to take the above feedback into account for the study on Management of Trace/MDT phase 2.**

# 3 Dates of next TSG-RAN WG3 meetings

TSG-RAN WG3 Meeting#120 22 - 26 May 2023 Incheon, South Korea

TSG-RAN WG3 Meeting#121 21 - 25 August 2023 Toulouse, France