**3GPP TSG-SA5 Meeting #156 *S5-245070***

**Maastricht, NetherLands, 19 - 23 Aug 2024**

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| *CR-Form-v12.1* |
| **CHANGE REQUEST** |
|  |
|  | **32.422** | **CR** | **0477** | **rev** | **1** | **Current version:** | **16.15.0** |  |
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| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* |
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| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network | **X** | Core Network | **X** |

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| ***Title:***  | Rel-16 CR TS 32.422 Update signalling based MDT activation procedure in 5GC and NG-RAN |
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| ***Source to WG:*** | CATT |
| ***Source to TSG:*** | S5 |
|  |  |
| ***Work item code:*** | TEI16 |  | ***Date:*** | 2024-07-15 |
|  |  |  |  |  |
| ***Category:*** | **F** |  | ***Release:*** | Rel-16 |
|  | *Use one of the following categories:****F*** *(correction)****A*** *(mirror corresponding to a change in an earlier release)****B*** *(addition of feature),* ***C*** *(functional modification of feature)****D*** *(editorial modification)*Detailed explanations of the above categories canbe found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | *Use one of the following releases:Rel-8 (Release 8)Rel-9 (Release 9)Rel-10 (Release 10)Rel-11 (Release 11)…Rel-15 (Release 15)Rel-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)* |
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| ***Reason for change:*** | The procedure for Activation of MDT task before UE attaches to the network in 5GC and NG-RAN is not align with TS 23.502.Wrong message interaction between AMF and UDM, *Update Location Request/Answer* should be replaced by *Nudm\_SDM\_Get*Wrong message interaction between AMF,SMF and PCF. *Create Session Request* for LTE should be replaced by *Nsmf\_PDUSession\_CreateSMContext Requst/Response* and *SM Policy Association Establishment Request/Response**Wrong RRC message name, RRC Connection Reconfiguration* for LTE should be replaced by *RRC Reconfiguration* for 5G |
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| ***Summary of change:*** | * 3GPP TS 23.401 5.3.2 Attach procedure (LTE) should be replaced by 3GPP TS 23.502 4.2.2.2 Registration procedures(5G) .
* *Update Location Request/Answer* is replaced by *Nudm\_SDM\_Get* between AMF and UDM
* *Create Session Request* for LTE is replaced by *Nsmf\_PDUSession\_CreateSMContext Requst/Response* and *SM Policy Association Establishment Request/Response*
* *RRC Connection Reconfiguration/Complete* is replaced *by RRC Reconfiguration/Complete*
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| ***Consequences if not approved:*** | Misaligned specifications may cause wrong implementation.  |
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| ***Clauses affected:*** | 4.1.2.17.2, 4.1.2.17.3, 4.1.2.17.5 |
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|  | **Y** | **N** |  |  |
| ***Other specs*** |  | **X** |  Other core specifications  | TS/TR ... CR ...  |
| ***affected:*** |  | **X** |  Test specifications | TS/TR ... CR ...  |
| ***(show related CRs)*** |  | **X** |  O&M Specifications | TS/TR ... CR ...  |
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| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** |  |

***Start of First change***

##### 4.1.2.17.2 Activation of MDT task before UE attaches to the network in 5GC and NG-RAN

As shown in figure 4.1.2.17.2.1, by adding configurations of MDT management system activate the Trace Session for MDT job.



Figure 4.1.2.17.2.1: Example of MDT activation procedure in 5GC and NG-RAN

The MDT activation procedure before UE attachment in 5GC is the same as in EPC, When UDM activates the trace, for MDT job, to the AMF the following configuration parameters shall be included in the message:

- Job Type

- Trace Target: IMSI or IMEISV or IMEI-TAC or SUPI

- Area Scope (e.g. TA, TAI, Cell)

- Trace Reference

- List of Measurements

- Reporting Trigger

- Report Interval

- Report Amount

- Event Threshold

- Logging Interval

- Logging Duration

- Collection Period for RRM Measurements NR (present only if any of M4 or M5 measurements are requested).

- Collection Period M6 in NR (present only if any of M6 measurements (DL or UL) is requested).

- Collection Period M7 in NR (present only if any of M7 measurements (DL or UL)is requested).

- Positioning Method

- MDT PLMN List

- Trace Collection Entity IP Address

- Excess packet delay thresholds (present only if M6 UL measurements are requested)

Note that at the same time not all the parameters can be present. The conditions are described in clause 5.10 of the present document.

The Specified geographical area field is available when IMSI/IMEI(SV)/IMEI-TAC/SUPI combined with geographical area are needed for UE selection.

When AMF activate MDT activation to gNB, the MDT configuration parameters can be included in the message in the Initial Context Setup:

- Area Scope (TA, TAI, Cell).

- Trace Reference.

- Trace Recording Session Reference.

- List of Measurements.

- Reporting Trigger.

- Report Amount.

- Report Interval.

- Event Threshold.

- Logging Interval.

- Logging Duration.

- Trace Collection Entity IP Address.

- Collection Period for RRM Measurements NR (present only if any of M4 or M5 measurements are requested).

- Collection Period M6 in NR (present only if any of M6 measurements (DL or UL) is requested).

- Collection Period M7 in NR (present only if any of M7 measurements (DL or UL)is requested).

- Positioning Method.

- MDT PLMN List.

- Report Type for Logged MDT (periodical logged or event-triggered measurement) for logged MDT only.

- Events List for Event-Triggered Measurement for logged MDT only.

- Event Threshold, Hysteresis and Time to trigger (present only if L1 event is configured for logged MDT).

- Area Configuration for Neighbouring Cells for logged MDT only.

- Sensor Information for logged MDT and immediate MDT.

- Excess packet delay thresholds (present only if M6 UL measurements are requested)

***Next change***

##### 4.1.2.17.3 Activation of MDT task after UE attachment in 5GC and NG-RAN

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**Figure 4.1.2.17.3.1: Example of MDT activation in 5GC and NG-RAN after UE attachment**

The MDT activation procedure after UE attachment in 5GC is the same as in EPC, When UDM activates the trace, for MDT job, to the AMF the following configuration parameters shall be included in the message:

- Area Scope (TA, TAI, Cell).

- Trace Reference.

- Trace Recording Session Reference.

- List of Measurements.

- Reporting Trigger.

- Report Amount.

- Report Interval.

- Event Threshold.

- Logging Interval.

- Logging Duration.

- Trace Collection Entity IP Address.

- Positioning Method.

- Collection Period for RRM Measurements NR (present only if any of M4 or M5 measurements are requested).

- Collection Period M6 in NR (present only if any of M6 measurements (DL or UL) is requested).

- Collection Period M7 in NR (present only if any of M7 measurements (DL or UL)is requested).

- MDT PLMN List.

- Report Type for Logged MDT (periodical logged or event-triggered measurement) for logged MDT only.

- Events List for Event-Triggered Measurement for logged MDT only.

- Event Threshold, Hysteresis and Time to Trigger (present only if L1 event is configured for logged MDT)..

- Area Configuration for Neighbouring Cells for logged MDT only.

- Sensor Information for logged MDT and immediate MDT.

- Excess packet delay thresholds (present only if M6 UL measurements are requested)

In case of logged MDT and the UE is currently being in idle or inactive mode, the AMF is not required to initiate paging of the UE in order to send the configuration.

***Next change***

4.1.2.17.5 Handling of signalling based MDT activation in a split architecture

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**Figure 4.1.2.17.5.1: Example of MDT activation in 5GC and NG-RAN after UE attachment in a split architecture**

When AMF sends a Trace Start message to gNB-CU-CP, the gNB-CU-CP decides if gNB-CU-UP or gNB-DU, or both should be involved in the MDT measurement. It means that the gNB-CU-CP shall send the TRACE START message to gNB-CU-UP and/or gNB-DU if these nodes should be involved in the MDT measurement.

In case of the split architecture, the configuration parameters that shall be included in the message are same as in the case of non-split architecture, see clause 4.1.2.17.3.

The overall description for signalling based MDT activation procedure in the case of split architecture can be found in TS 38.401 [44].