**3GPP TSG- Meeting #141-e *21168***

**e-meeting, 17 -26 January 2022**

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| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **32.422** | **CR** | 0386 | **rev** | **2** | **Current version:** | 17.5.0 |  |
|  | | | | | | | | |
| *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:*** | Add MDT reporting for NR | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Ericsson | | | | | | | | | |
| ***Source to TSG:*** | S5 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | e\_5GMDT | | | | |  | ***Date:*** | | | 2022-01-17 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | B |  | | | | | ***Release:*** | | | Rel-17 |
|  | *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 can be 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)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | Add MDT reporting for NR | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | * Added MDT reporting in the case of immediate MDT for NR * Added MDT reporting in the case of logged MDT for NR | | | | | | | | |
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| ***Consequences if not approved:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 6.1, 6.2, 6.X, 6.Y | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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 ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

***First change***

## 6.1 MDT reporting in case of Immediate MDT for UTRAN and E-UTRAN

Figure 6.1 illustrates an example of the procedure for Immediate MDT reporting.



Figure 6.1: Procedure for Immediate MDT reporting

In case of Immediate MDT, the MDT related measurements are sent in RRC as part of the existing RRC measurements. Whenever the eNB/RNC receives the MDT measurements it shall save it to a Trace Record. The Trace Records are sent to the TCE either directly or via EM (where EM can reside in the eNB/RNC).

The time and the criteria when the Trace Records are sent to the TCE is vendor specific however if the Trace Session is deactivated, the Trace Records shall be sent to the TCE latest by 2 hours ( the exact time is FFS) after the Trace Session deactivation.

For reporting of MDT data in single operator and participating operator cases, see clause 7.

## 6.2 MDT reporting in case of Logged MDT for UTRAN and E-UTRAN

Figure 6.2 illustrates an example of the MDT reporting in case of Logged MDT:



Figure 6.2: MDT reporting in case of Logged MDT

In case of Logged MDT, the UE collects the measurements while it is in IDLE or INACTIVE mode. Once the UE goes to RRC CONNECTED mode, the UE indicates MDT log availability in the RRCConnectionSetupComplete message or RRCResumeComplete message (E-UTRAN only) to the eNB/RNC. When the eNB/RNC receives this indication it can request the MDT log (if the UE is still in the same RAT type where the MDT configuration was done) by sending the UEInformationRequest message to the UE. The MDT logs are sent to the network in the UEInformationResponse message. At the reception of the UEInformationResponse message the eNB/RNC shall save the received MDT log to the Trace Record. The Trace Records are sent to the TCE either directly or via EM (where EM can reside in the eNB/RNC).

The time and criteria when the Trace Records are sent to the TCE is vendor specific however if the Trace Session is deactivated, the Trace Records shall be sent to the TCE latest by 2 hours ( the exact time is FFS) after the Trace Session deactivation.

***Next change***

## 6.X MDT reporting in case of Immediate MDT for NG-RAN

Figure 6.X.1 illustrates an example of the procedure for Immediate MDT reporting in NG-RAN.



Figure 6.X.1: Immediate MDT reporting in the case of non split architecture

In case of Immediate MDT, the MDT related measurements are sent in RRC as part of the existing RRC measurements. Whenever the gNB receives the MDT measurements it shall save it to a Trace Record. The Trace Records are sent to the TCE either directly or via Management System.

In a split architecture, the MDT logs as trace records from the nodes where the MDT session has been activated shall be sent separately from each node to TCE or management system. If the management system receives the MDT trace records, the management system should send the MDT trace records to TCE [44].

The time and the criteria when the Trace Records are sent to the TCE is vendor specific however if the Trace Session is deactivated, the Trace Records shall be sent to the TCE latest by 2 hours (the exact time is FFS) after the Trace Session deactivation.

## 6.Y MDT reporting in case of Logged MDT for NG-RAN

Figure 6.X illustrates an example of the MDT reporting in case of Logged MDT:

 Figure 6.Y.1: Logged MDT reporting in the case of non split architecture

In case of Logged MDT, the UE collects the measurements while it is in IDLE mode or INACTIVE state. Once the UE goes to RRC CONNECTED mode, the UE indicates MDT log availability in the RRCSetupComplete message or RRCResumeComplete message to the gNB. When the gNB receives this indication, it can request the MDT log (if the UE is still in the same RAT type where the MDT configuration was done) by sending the UEInformationRequest message to the UE. The MDT logs are sent to the network in the UEInformationResponse message. At the reception of the UEInformationResponse message the gNB shall save the received MDT log to the Trace Record. The Trace Records are sent to the TCE either directly or via Management System. The TCE IP address or URI of the Trace Reporting MnS consumer shall be configured for the activated MDT sessions.

In a split architecture, the MDT logs as trace records from the nodes where the MDT session has been activated shall be sent separately from each node to TCE or management system. If the management system receives the MDT trace records, the management system should send the MDT trace records to TCE [44].

The time and criteria when the Trace Records are sent to the TCE is vendor specific however if the Trace Session is deactivated.

***End of changes***