**3GPP TSG-SA5 Meeting #162 *S5-253231r2***

Stor-Göteborg, Sweden, 25th August 2025 - 29th August 2025

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| *CR-Form-v12.3* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **32.422** | **CR** | **0528** | **rev** | **-** | **Current version:** | **19.3.0** |  |
|  | | | | | | | | |
| *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 |  |

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| ***Title:*** | Rel-19 CR TS 32.422 Continuous MDT | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Ericsson, Deutsche Telekom, CATT | | | | | | | | | |
| ***Source to TSG:*** | S5 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | TraceQoE\_OAM | | | | |  | ***Date:*** | | | 2025-08-15 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | B |  | | | | | ***Release:*** | | | Rel-19 |
|  | *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-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19) Rel-20 (Release 20)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | In consideration of the incoming LS R3‑253958 and SA5 discussion in DP (S5‑250205), this change request proposes the specification of Continuous Management-Based MDT based on the following principles:   * Reuse of the existing Management-Based MDT framework, with minimal impact on the current architecture and procedures. * Introduction of an OAM-triggered activation mechanism toward participating NG-RAN nodes, enabling identification of a continuous MDT job through specific Trace Reference(s). * No impact to 5GC functionality. * No impact to the UE, ensuring that UE behavior remains unchanged. * Use of Trace Reference (TR) and Trace Recording Session Reference (TRSR) to support correlation of MDT measurements collected across nodes, including UE transitions between RRC states and UE mobility.   This CR proposes the stage 2 specification text for the Continuous Management-Based MDT procedure. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Defining the stage 2 text for Continuous MDT procedure | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Unable to support Continuous MDT procedure as requested by RAN3 | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 3.1, 3.2, 4.1.1.9.2, 4.1.1.9.x (new), 4.1.1.9.y (new), 5.9a, 5.10.8, 5.10.9, 5.10.11, 5.10.26, 5.10.27, 5.10.28, 5.10.29, 5.10.36, 5.10.37, 5.10.38, 5.10.x(new) | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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 | | | | TS28.622 CR 0572 | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

\*\*\* START OF NEXT CHANGE \*\*\*

# 3 Definitions and abbreviations

## 3.1 Definitions

For the purposes of the present document, the terms and definitions given in TR 21.905 [4], TS 23.501 [40], TS 38.300 [42] and the following apply. A term defined in the present document takes precedence over the definition of the same term, if any, in TR 21.905 [4], TS 23.501 [40] or TS 38.300 [42].

**Continuous management-based MDT:** a management-based MDT functionality that enables continuous collection of MDT data, including both Immediate MDT and Logged MDT, within a specified area across one or more NG-RAN nodes.

NOTE: This MDT data collection captures UE transitions between RRC states (RRC\_IDLE, RRC\_INACTIVE, RRC\_CONNECTED), as well as UE idle and connected mode mobility between participating NG-RAN nodes. The MDT data collection on selected UEs is stopped when both Immediate MDT and Logged MDT are deactivated.

**Management based MDT:** MDT data is collected from UEs in a specified area. The area is defined as a list of cells (UTRAN or E-UTRAN) or as a list of tracking/routing/location areas. The management based MDT is an enhancement of the management based trace functionality. Management based MDT can be either a logged MDT or Immediate MDT.

**Immediate MDT:** See 3GPP TS 37.320 [30]

**Logged MDT:** See 3GPP TS 37.320 [30]

**Logged MBSFN MDT**: Collection of MBSFN measurements in idle and connected mode. Applicable only for eUTRAN.

**Signalling based MDT:** MDT data is collected from one specific UE. The UE that is participating in the MDT data collection is specified as IMEI(SV) or as IMSI. The signalling based MDT is an enhancement of the signalling based subscriber and equipment trace. A signalling based MDT can be either a logged MDT or Immediate MDT.

**Trace metrics:** Messages, measurements and reports which can be traced by the 3GPP specified Subscriber and Equipment Trace framework. These include trace messages, MDT measurements (Immediate MDT, Logged MDT, Logged MBSFN MDT), RLF, RCEF, RRC reports and 5GC UE level measurements.

**MBSFN Area**: See 3GPP TS 36.300 [37]

**MBSFN Area Reserved Cell**: See 3GPP TS 36.300 [37]

## 3.2 Abbreviations

For the purposes of the present document, the abbreviations given in TR 21.905 [4], TS 32.101 [1] , TS 23.501 [40], TS 38.300 [42] and the following apply. An abbreviation defined in the present document takes precedence over the definition of the same abbreviation, if any, in TR 21.905 [4].

AS Application Server

BGCF Breakout Gateway Control Function

CAG Closed Access Group

C-MDT Continuous management-based MDT

CSCF Call Session Control Function

I-CSCF Interrogating-CSCF

IM CN SS IP Multimedia Core Network Subsystem

IMEI-TAC IMEI Type Allocation Code

MHI Mobility History Information

MN Master Node

NID Network ID

P-CSCF Proxy – CSCF

PNI-NPN Public Network Integrated Non-Public Network

RCEF RRC Connection Establishment Failure

RLF Radio Link Failure

S-CSCF Serving-CSCF

SHR Successful Handover Report

SN Secondary Node

SNPN Stand-alone Non-Public Network

SPR Successful PSCell Addition/Change Report

TAU Tracking Area Update

TRSR Trace Recording Session Reference

TR Trace Reference

\*\*\* START OF NEXT CHANGE \*\*\*

##### 4.1.1.9.2 NG-RAN activation mechanisms for management based MDT data collections without IMSI/IMEI(SV)/SUPI selection in the case of non-split architecture

For management based MDT data collection with no IMSI/IMEI(SV)/SUPI criteria in the case of non-split architecture, the UE selection can be done in the radio network at gNB based on the input information received from management system and the user consent information stored in the gNB. This mechanism works for the following OAM input parameters:

- Area information only

The following figure summarizes the flow as an example how the MDT configuration is done utilising the cell traffic trace functionality for this scenario:



Figure 4.1.1.9.2.1: Example for management based MDT activation in NG-RAN in the case of non-split architecture

Whenever the gNB receives the Management based MDT allowed IE in Initial Context Setup Request or in Handover Request message, it shall save it for possible later usage.

1) The management system sends a Trace Session activation request to the gNB. This request includes the parameters for configuring UE measurements:

- Job Type.

- Area Scope where the UE measurements should be collected: list of NG-RAN cells. Tracking Area should be converted to NG-RAN cells, additionally a list of NPN IDs in NG-RAN.

- List of Measurements.

- Reporting Trigger.

- Report Interval.

- Report Amount.

- Event Threshold.

- Logging Interval.

- Logging Duration.

- Trace Reference.

- TCE IP Address and Trace Reporting Consumer URI (if streaming based report is supported).

- Anonymization of MDT Data.

- 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.

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

- Event List for Event Triggered Measurement for logged MDT.

- Area Configuration for Neighbouring Cells for logged MDT.

- Sensor Information for logged MDT and immediate MDT.

- Beam Level Measurement (present only if M1 measurement in NR is requested).

Note that at the same time not all the parameters can be present. The criteria for which parameters are present are described in clause 5 of the present document.

2) When gNB receives the Trace Session activation request from its management system, it shall start a Trace Session and should save the parameters associated to the Trace Session.

3) gNB shall select the suitable UEs for MDT data collection. The selection is based on the area received from the management system and the area where UE is located, user consent information received from the core network as part of the Management based MDT PLMN List IE (As described in section in 4.9.2 of this document). If the user is not in the specified area or if the Management based MDT PLMN List IE is not present in the UE context the UE shall not be selected by the gNB for MDT data collection. During UE selection, the gNB shall take into account also the UE capability (MDT capability) when it selects UE for logged MDT configuration. If the UE does not support logged MDT, the UE shall not be selected.   
If M4 or M5 measurements are requested in the MDT configuration, gNB should start the measurement according to the received configuration. Details of the measurements are defined in TS 38.314 [50].

4) gNB shall activate the MDT functionality to the selected UEs. When gNB selects a UE, it shall take into account the availability of Management based MDT PLMN List IE in the user context and the area scope parameter received in MDT configuration (Trace Session activation). Detailed description about user consent handling and how it is provided to the gNB is described in section 4.9.2. If there is no Management based MDT PLMN List IE in the user context or the user is outside the area scope defined in the MDT configuration, the UE shall not be selected for MDT data collection. The gNB shall assign Trace Recording Session Reference corresponding to the selected UE. The gNB shall send at least the following configuration information to the UE in case of Logged MDT:

- Trace Reference

- Trace Recording Session Reference

- TCE Id

- Logging Interval

- Logging Duration

- Absolute time reference

- Area Scope where the UE measurements should be collected: list of NG-RAN cells/TA, additionally a list of NPN IDs in NR.

- MDT PLMN List

- Event List for Event Triggered Measurement

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

NOTE: For UEs currently being in idle or inactive mode and camping in the cell the logged MDT configuration cannot be sent. These UEs may be configured when they initiate some activity (e.g., Service Request or Mobility Registration) at next time.

In case of Immediate MDT, the following parameters shall be sent to the UE:

- List of Measurements

- Reporting Trigger

- Report Interval

- Report Amount

- Event Threshold

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

- Beam Level Measurement (present only if M1 measurement in NR is requested)

Note that at the same time not all the parameters can be present. Conditions of the parameters are described in clause 5 of the present document.

gNB performs necessary actions (e.g. activates GNSS module of the UE, enables and collects certain positioning measurements) specified in TS 38.305 [52] according to the value of Positioning Method (see clause 5.10.19) received in the Trace configuration. gNB captures location information and/or positioning measurements in the MDT trace record.

If Reporting Trigger parameter indicates that all configured RRM measurement trigger should be reported in MDT, then gNB should ask the UE to provide the "best effort" location information together with the measurement reporting by setting the *includeCommonLocationInfo* IE in all RRC measurement reporting configurations.

5) When UE receives the MDT activation it shall start the MDT functionality based on the received configuration parameters.

6) The gNB shall not retrieve MDT report from the UE if UE’s rPLMN does not match the PLMN where TCE used to collect MDT data resides (e.g. gNB’s primary PLMN). When the gNB receives the MDT report from UE, the gNB shall get the Trace Recording Session Reference, Trace Reference, and TCE Id from the report, and compare the Trace PLMN (PLMN portion of Trace Reference) with the PLMN where TCE used to collect MDT data resides (e.g. its primary PLMN) and discard MDT report in case of a mismatch. Otherwise if the MDT anonymization requires the IMEI-TAC in the MDT record gNB shall send the Trace Recording Session Reference, Trace Reference, serving cell CGI, and TCE IP Address (or Trace Reporting Consumer URI) in the CELL TRAFFIC TRACE message to the AMF via the NG connection. When AMF receives this NG signalling message containing the Trace Recording Session Reference, Trace Reference, serving cell CGI, and the Privacy Indicator (that shall be set to *Logged MDT* or *Immediate MDT* depending on the configured Job Type) if so indicated in the privacy indicator, the AMF shall look up the subscriber identities (IMEI(SV)) of the given call from its database, and send the IMEI-TAC together with the Trace Recording Session Reference and Trace Reference and for immediate MDT also the serving cell CGI to the TCE, as described in section 4.7 of the present document. For logged MDT, AMF will send the IMEI-TAC together with the Trace Recording Session Reference, Trace Reference to the TCE.

NOTE: For management based Immediate MDT, TRSR may be duplicated among different gNBs when multiple cells are selected as the area scope for the same MDT job. In this case, the combination of TRSR and the UE’s serving cell CGI in the MDT report can uniquely identify one trace recording session.

7) For Immediate MDT when the gNB receives the MDT report from the UE in the RRC message the gNB shall capture it and put the UE’s serving cell CGI together with the MDT report from the UE to the trace record. A UE configured to perform Logged MDT measurements in IDLE or INACTIVE indicates the availability of MDT measurements, by means of a one-bit indicator, in RRC messages definitions in 3GPP TS 38.331 [43], e.g., *RRCSetupComplete* message and *RRCReconfigurationComplete* message. The gNB can decide to retrieve the logged measurements based on this indication by sending the UEInformationRequest message to the UE. The UE can answer with the collected MDT logs in UEInformationResponse message.

8) The gNB shall forward the Trace Records to the Trace Collection Entity (TCE). In case of logged MDT, the TCE Id is indicated in the MDT report is translated to the actual IP address of the TCE or the URI of the Trace Reporting Consumer by the gNB before it forwards the measurement records. (The TCE identity translation is using configured mapping in the gNB.) In case of immediate MDT, the IP address of the TCE or the URI of the Trace Reporting Consumer is indicated for the gNB in the trace configuration.

The Immediate MDT measurement configuration is deleted in the UE together with the RRC context when entering idle or inactive mode.

The Logged MDT trace session is preserved in the UE until the duration time of the trace session expires, including also multiple idle or inactive periods interrupted by various state transitions such as idle-connected-idle state transitions.

The Logged MDT trace session context of the UE is stored in the network as long as the trace session is active, including also the periods when the UE is in connected state.

Management system shall validate that the MCC and MNC specified in the Trace Reference is the same as the PLMN supported by all the cells specified in the area scope. If the gNB receives a request with a PLMN in the TraceReference that does not match any PLMN in its list, it shall ignore the request.

\*\*\* START OF NEXT CHANGE \*\*\*

##### 4.1.1.9.x NG-RAN activation mechanisms for C-MDT data collections for non-split RAN architecture

For non-split RAN architecture, the C-MDT data collection procedure shall be same as specified in subclause 4.1.1.9.2 with following additions.

1) The management system shall either send two Trace Session activation requests (one for Immediate MDT, another for Logged MDT) with same TR to the gNB, or send one Trace Session activation request with Job Type (IMMEDIATE\_MDT\_AND\_ LOGGED\_MDT) to the gNB. In additional of the trace control and configuration parameters specified in subclause 4.1.1.9.2 step 1, the Trace Session activation request(s) shall contain a TRSR Prefix Configuration parameter, which reserves a TRSR range(s) for the gNB during TRSR assignment. Furthermore, the management system shall ensure that Trace Session Activation Requests with the same TR are sent to all participating NR-RAN nodes involved in the same C-MDT job.

2) Upon receiving the Trace Session activation request(s), the gNB shall identify the request(s) as a C-MDT job based on the included TRSR Prefix Configuration parameter. The gNB shall start a C-MDT session and store the associated configuration parameters.

3) The gNB and UE shall follow the steps specified in subclause 4.1.1.9.2, step 3 to 8, with following additions:

- The gNB shall configure the selected UE with an Immediate MDT session and a Logged MDT session using the configurations from the Trace Session activation request(s). A unique TRSR is assigned to the UE for both Immediate MDT and Logged MDT. The TRSR is allocated based on the received TRSR Prefix Configuration parameter. The combination of the TR and this TRSR shall be used for this UE during the lifetime of the C-MDT session (for reconfiguration, reporting, and connected-mode mobility).

- Upon transitioning into RRC\_CONNECTED, the UE may report Logged MDT measurements, including TR and TRSR, to the gNB, as specified in subclause 4.1.1.9.2 step 7 and 8. If the area-based selection and user consent conditions are satisfied, the gNB shall reconfigure the UE with an Immediate MDT and a Logged MDT using the same TR / TRSR and the MDT configurations received in the Trace Session activation request(s).

- During a selected UE's connected-mode inter-gNB mobility, the TR and TRSR shall be forwarded to the target gNB via Xn interface messages.

- Upon receiving a UE via idle-mode inter-gNB mobility followed by a transition to RRC\_CONNECTED, the UE may report Logged MDT measurements (including TR and TRSR) as specified in subclause 4.1.1.9.2, Steps 7-8. If the reported TR is same as the Trace Reference received in the Trace Session Activation request(s), the gNB shall identify the UE as part of the same C-MDT job. If the area-based selection and user consent conditions are satisfied, the gNB shall configure the UE with an Immediate MDT and a Logged MDT, with a TRSR allocated based on TRSR Prefix Configuration parameter, along with the MDT configurations received in the Trace Session activation request(s). In this case, both the UE reported TRSR and the reassigned TRSR shall be included in first Trace Record Header of the Logged MDT measurements report.

- Upon receiving a UE via a connected-mode inter-gNB mobility procedure, if the TR and TRSR are received via Xn interface and the TR is same as TR received in the Trace Session Activation request(s), the gNB shall identify the UE as part of the same C-MDT job. If the area-based selection and user consent conditions are satisfied, the gNB shall configure this UE with an Immediate MDT and a Logged MDT, with a TRSR allocated based on TRSR Prefix Configuration parameter, along with the MDT configurations received in the Trace Session activation request(s). In this case, both the TRSR received from source gNB and the reassigned TRSR shall be included in first Trace Record Header of the MDT measurements report.

\*\*\* START OF NEXT CHANGE \*\*\*

##### 4.1.1.9.y NG-RAN activation mechanisms for C-MDT data collections for split RAN architecture

For split RAN architecture, the C-MDT data collection activation mechanism is only applicable if a gNB-CU-CP receives a C-MDT activation as specified in subclause 4.1.1.9.x step 2. In addition to the procedures specified in subclause 4.1.1.9.3, the gNB-CU-CP shall configure the selected UE with an Immediate MDT session and a Logged MDT session using the MDT configurations received in the Trace Session activation request(s). A unique TRSR is assigned to the UE based on the received TRSR prefix Configuration parameter for both Immediate MDT and Logged MDT. The combination of the TR and this TRSR shall be used for this UE during the lifetime of the C-MDT session (for reconfiguration, reporting, and connected-mode mobility) as specified in subclause 4.1.1.9.x step 3.

\*\*\* START OF NEXT CHANGE \*\*\*

## 5.9a Job Type (M)

The Job Type is a mandatory parameter. It defines if a single trace job, a single MDT job, a combined MDT and trace job, a single RLF report collection job, a single RCEF report collection job, a single 5GC UE level measurements job, a combined trace and 5GC UE level measurements job, a combined MDT and 5GC UE level measurements job, a combined trace, MDT and 5GC UE level measurements job or a single RRC report collection job is activated. This parameter also defines the MDT mode. The Job Type parameter is an enumerated type with the following values:

- IMMEDIATE\_MDT\_ONLY (0);

- LOGGED\_MDT\_ONLY (1);

- TRACE\_ONLY (2);

- IMMEDIATE\_MDT\_AND\_TRACE (3);

- RLF\_REPORT\_ONLY (4);

- RCEF\_REPORT\_ONLY (5);

- LOGGED\_MBSFN\_MDT (6);

- 5GC\_UE\_LEVEL\_MEASUREMENTS\_ONLY (7);

- TRACE\_AND\_5GC\_UE\_LEVEL\_MEASUREMENTS (8);

- IMMEDIATE\_MDT\_AND\_5GC\_UE\_LEVEL\_MEASUREMENTS (9);

- TRACE\_AND\_IMMEDIATE\_MDT\_AND\_5GC\_UE\_LEVEL\_MEASUREMENTS (10);

- RRC\_REPORT (11);

- IMMEDIATE\_MDT\_AND\_ LOGGED\_MDT (12).

NOTE 1: "RLF\_REPORT\_ONLY" and "RCEF\_REPORT\_ONLY" are applicable only in management based trace activation in E-UTRAN and NG-RAN.

NOTE 2: "LOGGED\_MBSFN\_MDT" is applicable only for activation in E-UTRAN.

NOTE 3: The combinations of "TRACE\_AND\_5GC\_UE\_LEVEL\_MEASUREMENTS ", "IMMEDIATE\_MDT\_AND\_5GC\_UE\_LEVEL\_MEASUREMENTS ", and "TRACE\_AND\_IMMEDIATE\_MDT\_AND\_5GC\_UE\_LEVEL\_MEASUREMENTS", are applicable only in signalling based trace/MDT activation procedures.

NOTE 4: "RRC\_REPORT" is applicable only in management based trace activation in NG-RAN.

NOTE 5: "IMMEDIATE\_MDT\_AND\_ LOGGED\_MDT" is applicable only in C-MDT activation in NG-RAN.

\*\*\* START OF NEXT CHANGE \*\*\*

### 5.10.8 Logging Interval

The parameter is mandatory if the Job Type parameter is configured for logged MDT or logged MBSFN MDT. The parameter defines the periodicity for logging MDT measurement results for periodic downlink pilot strength measurement when UE is in Idle or Inactive mode.

Detailed definition of the parameter is in 3GPP TS 37.320 [30].

The parameter is an enumerated type with the following values in UMTS, and LTE as per defined in TS 25.331 [31] and TS 36.331 [32] :

- 1280 ms (0),

- 2560 ms (1),

- 5120 ms (2),

- 10240 ms (3),

- 20480 ms (4),

- 30720 ms (5),

- 40960 ms (6),

- 61440 ms (7)

The parameter is an enumerated type with the following values in NR as per defined in 3GPP TS 38.331 [43]:

- 1280 ms (0),

- 2560 ms (1),

- 5120 ms (2),

- 10240 ms (3),

- 20480 ms (4),

- 30720 ms (5),

- 40960 ms (6),

- 61440 ms (7)

- 320 ms (8)

- 640 ms (9)

- Infinity (10).

\*\*\* START OF NEXT CHANGE \*\*\*

### 5.10.9 Logging Duration

The parameter is mandatory if the Job Type parameter is configured for logged MDT or logged MBSFN MDT. The parameter determines the validity of MDT logged configuration for IDLE and INACTIVE mode. The timer starts at time of receiving configuration by the UE, and continues independent of UE state transitions and RAT or RPLMN changes.

Detailed definition of the parameter is in TS 37.320 [30], TS 25.331 [31], TS 36.331 [32] and TS 38.331[43]:

The parameter is an enumerated type with the following values in UMTS, LTE and NR:

- 600 sec (0),

- 1200 sec (1),

- 2400 sec (2),

- 3600 sec (3),

- 5400 sec (4),

- 7200 sec (5)

\*\*\* START OF NEXT CHANGE \*\*\*

### 5.10.11 Trace Collection Entity (TCE) Id

This is a mandatory parameter, if the Job Type parameter is configured for logged MDT or logged MBSFN MDT. It defines the TCE Id which is sent to the UE. The UE returns it to the network together with the logged data. The network has a configured mapping of the TCE Id and the destination to which trace records shall be transferred.

The destination is determined considering the PLMN (delivered as part of the Trace Reference) and the IP address of TCE for the file-based trace reporting, or URI of the TCE or MnS trace reporting MnS consumer for the streaming trace reporting. The mapping needs to be unique within the PLMN. The size of the parameter is one byte.

For further details on the procedure see clause 4.1.1.2a for UTRAN, clauses 4.1.1.6a and 4.1.1.6b for E-UTRAN and clause 4.1.1.9.2 for NR.

\*\*\* START OF NEXT CHANGE \*\*\*

### 5.10.26 Area Configuration for Neighbouring Cells

This NR parameter is optional and is used only if the Job Type parameter is configured for logged MDT. It defines the area for which the UE is requested to perform measurement logging for neighbour cells which have a list of carrier frequencies. Each frequency will have one PCI that will list out the neighbouring cell. The maximum number of cell identities to be configured as part of area configuration is 32. If it is not configured, the UE shall perform measurement logging for all the neighbour cells.

\*\*\* START OF NEXT CHANGE \*\*\*

### 5.10.27 Report Type for Logged MDT

This NR parameter is mandatory, if the Job Type parameter is configured for logged MDT. It defines whether the reports are triggered periodical or event based.

The parameter is an enumerated type with the following possible values:

- PERIODICAL (0).

- EVENT\_TRIGGERED (1).

\*\*\* START OF NEXT CHANGE \*\*\*

### 5.10.28 Event List for Event Triggered Measurement

This NR parameter is mandatory for event triggered measurement in the case of logged MDT. Each trace session shall configure at most one event. The UE shall perform logging of measurements only upon certain condition being fulfilled.

The parameter is an enumerated type with the following possible values:

- OUT\_OF\_COVERAGE (0).

- A2\_EVENT (1).

Detailed definition of the parameter is in 3GPP TS 38.331 [43].

\*\*\* START OF NEXT CHANGE \*\*\*

### 5.10.29 Sensor Information

This NR parameter is optional and is used only if the Job Type parameter indicates logged MDT or immediate MDT. It defines which sensor information shall be included in logged MDT and immediate MDT measurement if they are available. The following sensor measurement can be included or excluded for the UE.

- BAROMETRIC\_PRESSURE (0).

- UE\_SPEED (1).

- UE\_ORIENTATION (2).

Detailed definition of the parameter is in TS 38.331 [43].

\*\*\* START OF NEXT CHANGE \*\*\*

### 5.10.36 Event Threshold for L1 Event

The parameter is mandatory for event triggered measurement in the case of logged MDT in NR and the event type is configured for L1 event.

The parameter defines the threshold for reporting measurements in NR logged MDT for L1 event based reporting trigger. Detailed definition of the parameter is in TS 38.331 [43] and TS 38.413 [49].

The range used depends on the used measurement quantity:

- RSRP range: 0 – 127 (for calculating the actual value see *RSRP-Range* in TS 38.331 [43])

- RSRQ range: 0 – 127 (for calculating the actual value see *RSRQ-Range* in TS 38.331 [43]).

\*\*\* START OF NEXT CHANGE \*\*\*

### 5.10.37 Hysteresis for L1 Event

The parameter is mandatory for event triggered measurement in the case of logged MDT in NR and the event type is configured for L1 event.

The parameter is used within the entry and leave condition of the L1 event triggered reporting in NR logged MDT. Detailed definition of the parameter is in TS 38.331 [43] and TS 38.413 [49].

The parameter is an Integer number between 0 .. 30. For calculating the actual value see *Hysteresis* in TS 38.331 [43]).

\*\*\* START OF NEXT CHANGE \*\*\*

### 5.10.38 Time to Trigger for L1 Event

The parameter is mandatory for event triggered measurement in the case of logged MDT in NR and the event type is configured for L1 event.

The parameter defines the time during which specific criteria for the event needs to be met in order to trigger a measurement report. Detailed definition of the parameter is in TS 38.331 [43] and TS 38.413 [49].

The parameter is an is an enumerated type with the following values:

- 0 ms (0),

- 40 ms (1),

- 64 ms (2),

- 80 ms (3)

- 100 ms (4),

- 128 ms (5),

- 160 ms (6),

- 256 ms (7)

- 320 ms (8),

- 480 ms (9),

- 512 ms (10),

- 640 ms (11),

- 1024 ms (12)

- 1280 ms (13),

- 2560 ms (14),

- 5120 ms (15),

\*\*\* START OF NEXT CHANGE \*\*\*

### 5.10.x TRSR Prefix Configuration

This parameter is mandatory if C-MDT is supported in NR-RAN. This parameter contains TRSR prefix configuration parameters which provides a concise way to represent a block of TRSRs, used by NR-RAN at TRSR assignment for a given C-MDT job. It defines both the base TRSR prefix and the size of the TRSR prefix. The base TRSR prefix is a 2 byte Octet String. The TSSR prefix length is an integer.

\*\*\* END OF CHANGE \*\*\*