3GPP TSG-RAN WG3 Meeting #129-bis R3-257284

**Prague, Czech Republic, 13 – 17 October 2025**

Agenda Item: 9.2.2

Source: Ericsson (moderator)

Title: Summary of Offline Discussion for CB: # 8\_ContinuousMDT

Document for: Discussion

# 1 Introduction

**CB: # 8\_ContinuousMDT**

**- Option 1 vs Option 2**

**- Security aspects, whether and how to involve SA3**

**- Area over which Continuous Management based MDT is configured?**

(Ericsson - moderator)

Summary of offline disc [R3-25xxxx](https://ericsson-my.sharepoint.com/personal/angelo_centonza_ericsson_com/Documents/Documents/3GPP%20Related/3GPP_ETSI/RAN3/RAN3-129bis/Inbox/R3-25xxxx.zip)

# 2 For the Chair Notes

**It is agreed to add a new IE in the Xn Handover Request and Xn: Retrieve UE context Response message to indicate that the UE is configured with Management Based continuous MDT. The IE references the existing *NG RAN Trace ID* IE**

**It is discussed whether Signalling based MDT can be always prioritised with respect to Continous MDT. It should be checked whether it is possible to deconfigure a UE from Management Based Immediate and Logged MDT to give priority to the Signaling Based MDT configuration**

**How can a UE be deconfigured from Logged Continous MDT.**

**Proposal 2: agree that the security issues such as the assignment of permanent identifiers have been discussed and resolved by SA5.**

**Proposal 3: Conclude that Continuous Management Based MDT configurations include an area scope just like management based MDT configuraitons.**

# 3 Discussion

## 3.1 Management Based Continuous MDT design options

To fuilfil aspects of Continuous Management Baseed MDT under RAN3 responsibility and requiring changes in the RAN3 specifications, the following options were identified:

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| Option 1:  Add the TR and TRSR assigned by a source gNB to a UE configured for Continuous management-based MDT in the Xn: Handover Request and Xn: Retrieve UE Context Response.  Option 2:  Re-use the existing NG-RAN Trace ID IE included in the Trace Activation IE of the Xn: HANDOVER REQUEST message to allow the target gNB to identify that the handed over UE was previously selected by the source gNB for a C-MDT session.  Add a new codepoint “Immediate MDT and Logged MDT” to be introduced in the MDT Activation IE included in the Trace Activation IE of the Xn: HANDOVER REQUEST message to allow the target gNB to re-configure the UE with both Immediate and Logged MDT. |

Continuous Management Based MDT is based on Mangement Based MDT. This is confirmed by the definition of Continuous Management Based MDT included in the CT to TS32.422 agreed by SA5 in S5-254111, which is reported below:

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

Being a functionality of Management Based MDT, Continuous Management Based MDT follows the rules of Management Based MDT. In TS37.320 the following is stated concerning propagation of Management Based MDT configurations during handovers:

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| 5.1.2.3 MDT context handling during handover and UE context retrieval The measurements configured in the UE for Immediate MDT should fully comply with the transferring and reconfiguration principles for the current measurements configured in the UE for RRM purpose during handover (including conformance with Rel-8 and Rel-9).  The target node releases the measurements configured in the UE for immediate MDT which are no longer needed based on any MDT trace configuration it receives or does not receive.  In addition, MDT configuration handling during handover and UE context retrieval depends on MDT initiation from OAM defined in clause 5.1.3:  - The MDT configuration configured by management based trace function will not propagate during handover.  - For LTE, the MDT configuration received by signalling based trace messages for a specific UE will propagate during intra-PLMN handover, and may propagate during inter-PLMN handover if the Signalling Based MDT PLMN List is available and includes the target PLMN. This behaviour applies also for MDT configuration that includes area scope, regardless of whether the source or target cell is part of the configured area scope. This behaviour applies also for Xn inter-RAT handover.  - For UMTS, the MDT configuration received by signalling based trace messages for a specific UE will continue during intra-PLMN handover, and may continue during inter-PLMN handover if the Signalling Based MDT PLMN List is available and includes the target PLMN, except for the case of SRNS relocation.  - For NR, the MDT configuration received by signalling based trace messages for a specific UE will propagate during intra-PLMN handover, intra-PLMN UE context retrieval, and may propagate during inter-PLMN handover or inter-PLMN UE context retrieval if the Signalling Based MDT PLMN List is available and includes the target PLMN. This behaviour applies also for MDT configuration that includes area scope, regardless of whether the source or target cell is part of the configured area scope. This behaviour applies also for Xn inter-RAT handover.  NOTE: In the case of SRNS relocation, MDT may be reactivated by the Core Network following a successful relocation. |

This is confirmed by section 4.10 of TS32.422, where propagation of MDT configurations is only specified for signalling based MDT, as shown below:

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| 4.10 Handling of MDT trace sessions at handover for immediate MDT in NG-RAN The gNB shall activate the Immediate MDT in the UE if the area based selection conditions are satisfied or not in the target cell after a handover that is made over Xn or N2. If the area based selection conditions are not satisfied in the handover target cell, the gNB may deactivate the Immediate MDT in the UE. The trace sessions and trace recording sessions are not visible for the UE.  In case of signalling based trace activation , the gNB shall propagate the Trace Session parameters together with the MDT specific parameters to the target cell regardless of whether the source or target cell is part of the configured area scope in case of an Intra-PLMN handover over Xn or N2.  For NG-RAN, the MDT configuration received by signalling based trace messages for a specific UE will propagate during intra-PLMN handover and may propagate during inter-PLMN handover if the Signalling Based MDT PLMN List is available and includes the target PLMN. This behaviour applies also for MDT configuration that includes area scope, regardless of whether the source or target cell is part of the configured area scope.  […] |

Along the same lines, TS32.422 states the following, which explicitly prevents propagation of Trace configuration between RAN nodes for management based traces:

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| 4.1.1.1.2 General management activation mechanisms for 5GS In 5GS the management trace activation utilizes the Services Based Management Architecture (SBMA) defined in TS 28.533 [48]. The NE is configured with Trace Control and Configuration parameters via interaction between Provisioning MnS (see definitions in TS 28.532 [47]) consumer and Provisioning MnS producer. Figure 4.1.1.1.2-1 below illustrates the 5GS management activation where the role of a Provisioning MnS producer is played by the NE and the role of a Provisioning MnS consumer is played by the Management System. The configured NE shall not propagate the received Trace Control and Configuration parameters to any other NE's - whether or not it is involved in the actual recording of the call. |

As it can be seen above, Management Based MDT configurations are not propagated during handovers. Additionally, the *Trace Activation* IE for a Management Based MDT configuration will not be signalled during handover procedures. Consequently, Option 2 is not applicable, as it is based on the assumption that the Trace Activation and the Management Based MDT configuration are signalled as part of the Xn Handover Procedure.

In light of the above, it is proposed to agree to the following:

**Proposal 1: Agree to add the TR and TRSR assigned by a source gNB to a UE configured for Continuous management-based MDT in the Xn: Handover Request and Xn: Retrieve UE Context Response**

Huawei: accept that Option 2 is not viable

Nokia, NEC: Agree to add a new IE in Xn Handover Request, but referencing legacy NG RAN Trace ID

CATT: agree to go for Option 1

Samsung: agree that Management Based MDT shall not be activated by signalling Trace Activation from source to target. Agree with Option 1

ZTE: Agree not to transfer the Trace Activation from source to target. Agree with Option 1

Qualcomm: Prefer to use a separate IE to separate signalling and management based MDT. Agree with Option 1

Huawei: We can follow the option described by Nokia.

CATT: agree to add an IE as per Nokia´s comment

ZTE: fine to agree with the proposal. The new problem of prioritisation is also a problem in legacy. We can discuss it offline

NEC: Agree with ZTE. Prioritise continuous MDT

**It is discussed whether Signalling based MDT can be always prioritised with respect to Continous MDT. It should be checked whether it is possible to deconfigure a UE from Management Based Immediate and Logged MDT to give priority to the Signaling Based MDT configuration**

**How can a UE be deconfigured from Logged Continous MDT.**

**It is agreed to add a new IE in the Xn Handover Request and Xn: Retrieve UE context Response message to indicate that the UE is configured with Management Based continuous MDT. The IE references the existing *NG RAN Trace ID* IE**

## 3.2 Discussions on the Continous Management Based MDT solution agreed by SA5

The following points were raised during online discussions:

***- Security aspects, whether and how to involve SA3***

SA5 discussed security aspects and in particular the issue of assigning permanent identifiers to the UE during Continuous Management Based MDT. To address the security concern coming from assigning a permanent identifier to a Continousl Management Based MDT process, the following solution aspect was agreed by SSA5:

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| 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. This TRSR Prefix Configuration parameter is used to identify this is a C-MDT activation request. 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 Trace Session activation request(s) as a C-MDT job, 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 Immediate MDT and Logged MDT. The TRSR is allocated based on the received TRSR Prefix Configuration parameter.  - 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 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 reconfigure the UE with an Immediate MDT and a Logged MDT.  - In any case, if a new TRSR is assigned, the correlation between the old TRSR and the new TRSR shall be reported by gNB to the TCE. |

Therefore, a gNB is able to re-assign a TRSR to a UE, to avoid permanent identifiers being used. Hence the security issue discussed has been resolved by SA5.

Additionally, as shown by the definition agreed by SA5 in S5-254111, Continuous Management Based MDT is a functionality of Management Based MDT. Hence, security aspects such as user consent are handled in the same way as for Manegemnt Based MDT.

**Proposal 2: agree that the security issues such as the assignment of permanent identifiers have been discussed and resolved by SA5.**

Nokia: User consent should be different due to a different purpose of data usage

Huawei: User Consent is different also due to the type of measurement we are collecting. However, this is addressed because we are considering an extension of management based MDT

ZTE: In the LS to SA5 RAN3 tasked SA5 to check security aspects. SA5 did not find security issues with the solution.

Qualcomm: RAN3 can ask SA3 if there are security implications. RAN2 has an LS to SA3 on user consent. The discussion is ongoing.

NEC, ZTE, Samsung, CATT: donot see problems at security level that shall be addressed by RAN3 (e.g. by means of an LS)

Nokia: RAN3 is not a group responsible for security and security issues shall be asked to SA3.

***- Area over which Continuous Management based MDT is configured?***

The CR to TS32.422, agreed by SA5 in S5254111, where the stage 2 description for Continous Management Based MDT is specified, describes the following:

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| 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. This TRSR Prefix Configuration parameter is used to identify this is a C-MDT activation request. 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. |

When looking at the parameters listed in TS32.422, section 4.1.1.9.2 step 1, the following can be found:

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| 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.  […] |

As it can be seen, Continuous Management Based MDT configurations are provided with a full area scope, as for Management Based MDT. Such area scope includes (among other parameters) lists of cells or tracking areas.

Therefore, there seem to be no issue with how the area scope for Continous Management Based MDT is configured.

**Proposal 3: Conclude that Continuous Management Based MDT configurations include an area scope just like management based MDT configuraitons.**

Nokia: The solution from SA5 does not support enough TRSR values.

Huawei: Is it reasonbale to assume that a UE is configured over the whole PLMN?

The majority of companies do not see issues with the quality of solution provided by SA5.

# 4 Conclusion (optional)

# 5 References (optional)

1. Reference 1
2. Reference 2