**3GPP TSG-RAN WG3 Meeting #111-eR3-210687**

**Online, January 25th – February 4th 2021**

Agenda Item: 10.3.2.1

Source: Ericsson

Title: (TP for MDT BL CR for TS 38.401): In-device coexistence “pollution” on MDT measurements Discussion

Document for: Other

# 1 Introduction

This paper includes a TP to 38.401 to include a solution description relative to IDC measurement polluting events.

# 2 TP for TS 38.401

# TP for TS38.401

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### 8.13.1 Signalling based MDT activation

The signalling flow for Signalling based MDT activation involving E1 and F1 is shown in Figure 8.13.1-1.



Figure8.13.1-1 Signalling based MDT Activation

1. The AMF starts a trace session and sends a TRACE START message to the gNB. The AMF shall consider the MDT user consent information when activating an MDT trace session for the UE as defined in TS32.422 [20]. TRACE START message includes the parameters for configuring MDT measurements.

2. The gNB-CU-CP decides if the gNB-CU-UP, or the gNB-DU, or both, should be involved in the MDT measurement. If the gNB-CU-UP should be involved in the MDT measurement, the gNB-CU-CP sends TRACE START message to the gNB-CU-UP, including MDT configuration parameters.

3. If the gNB-DU should be involved in the MDT measurement, the gNB-CU-CP sends TRACE START message to the gNB-DU, including MDT configuration parameters.

In the case where issues (e.g. IDC) potentially affecting immediate MDT measurements were detected during a measurement reporting process, an indication of the issue should be logged and timed in the affected measurement reports to the TCE so that the TCE is able to correlate and filter the affected measurements.

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### 8.13.2 Management based MDT activation

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#### 8.13.2.1 General

In Management Based Trace Activation towards a gNB-CU-CP, gNB-CU-UP or a gNB-DU can be fulfilled with the Cell Traffic trace functionality defined in TS32.422 [20]. The configuration parameters of the Trace Session that are received by a node in split RAN architecture are defined in TS32.422 [20].

The following description is valid for both an en-gNB and a gNB.

If the MDT measurement is initiated by the EM towards the gNB-CU-CP, and if the activation involves measurements collected by multiple nodes under the same gNB-CU-CP control in a split RAN architecture, the EM sends MDT measurement activation to the gNB-CU-CP and the gNB-CU-CP may further decide which gNB-DU(s) or which gNB-CU-UP(s) to perform the MDT measurement.

When gNB-CU-CP or a gNB-DU receive the Trace Session Activation message from the management system for a given cell or a list of cell(s) under its control, the gNB-CU-CP or gNB-DU shall start a Trace Session for the given cell or list of cell(s). For Management Based MDT sent directly to a gNB-CU-UP, no MDT Area Configuration (apart from PLMN IDs) is to be included in the MDT activation indication.

Each node receiving an MDT activation indication reports the measurements collected according to such activation directly to the TCE the node has been configured with. Each node reports the measurements collected, potentially affected by interference factors (e.g IDC) to the TCE, providing time stamps of the occurrence of the interfering events.

The signalling flow for management based MDT in gNB-CU-CP, gNB-DU and gNB-CU-UP is shown in Figure 8.13.2.2-1, Figure 8.13.2.3-1 and in Figure 8.13.2.4-1 respectively.

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#### 8.13.2.2 Management based MDT Activation in gNB-CU-CP

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The signalling flow for Management based MDT Activation in gNB-CU-CP is shown in Figure 8.13.2.2-1.



Figure 8.13.2.2-1 Management based MDT Activation in gNB-CU-CP

1. The EM sends a Trace Session activation request to the gNB-CU-CP. This request includes the parameters for configuring UE measurements.

2. The gNB-CU-CP shall select the suitable UEs for MDT data collection. If the UE is not in the specified area or if the serving PLMN is not within the Management Based MDT PLMN List the UE shall not be selected by the gNB-CU-CP for MDT data collection as defined in TS32.422 [20].

For each selected UE, if the gNB-CU-UP should perform MDT measurement, the gNB-CU-CP sends TRACE START message to the gNB-CU-UP, including MDT configuration parameters.

3. For each selected UE, if the gNB-DU should perform MDT measurement, the gNB-CU-CP sends TRACE START message to the gNB-DU, including MDT configuration parameters.

4. The gNB-CU-CP may send CELL TRAFFIC TRACE message to the AMF for the selected UE, including Trace ID for MDT. The AMF forwards Trace ID and UE identity to the TCE. If the UE reports an indication of measeumernt pollution, the gNB-CU-CP shall, if supported, include such indication, as well as a time stamp for the reception of the indication, as part of the measurement report to be sent to the TCE so that the TCE is able to correlate and filter the affected measurements.

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#### 8.13.2.3 Management based MDT Activation in gNB-DU

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The signalling flow for Management based MDT Activation in gNB-DU is shown in Figure 8.13.2.3-1.



Figure 8.13.2.3-1 Management based MDT Activation in gNB-DU

1. 1. The gNB-CU-CP sends UE CONTEXT SETUP REQUEST message to the gNB-DU, including Management based MDT PLMN List.

2. The gNB-DU sends UE CONTEXT SETUP RESPONSE message to the gNB-CU-CP.

3. The EM sends a Trace Session activation request to the gNB-DU. This request includes the parameters for configuring UE measurements.

4. The gNB-DU shall select the suitable UEs for MDT data collection. If the UE is not in the specified area or if the serving PLMN is not within the Management Based MDT PLMN List the UE shall not be selected by the gNB-DU for MDT data collection as defined in TS32.422 [20].

For each selected UE, the gNB-DU may send CELL TRAFFIC TRACE message to the gNB-CU-CP in the F1 UE associated signalling, including Trace ID for MDT.

5. Upon reception of a CELL TRAFFIC TRACE message from F1, the gNB-CU-CP shall send CELL TRAFFIC TRACE message to the AMF for this UE, including Trace ID for MDT. The AMF forwards Trace ID and UE identity to the TCE.

If the gNB-DU has received the *Polluted Measurement Indicator* IE, the gNB-DU shall, if supported, include the information contained in such indicator, as well as a time stamp for the reception of the indicator, as part of the measurement report to be sent to the TCE so that the TCE is able to correlate and filter the affected measurements. <<<<<<<<<<<<<<<<<<<< End of 4th set of Changes >>>>>>>>>>>>>>>>>>>>

#### 8.13.2.4 Management based MDT Activation in gNB-CU-UP

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The signalling flow for Management based MDT Activation in gNB-CU-UP is shown in Figure 8.13.2.4-1.



Figure 8.13.2.4-1 Management based MDT Activation in gNB-CU-UP

1. The gNB-CU-CP sends BEARER CONTEXT SETUP REQUEST message to the gNB-CU-UP, including Management based MDT PLMN List.

2. The gNB-CU-UP sends BEARER CONTEXT SETUP RESPONSE message to the gNB-CU-CP.

3. The EM sends a Trace Session activation request to the gNB-CU-UP. This request includes the parameters for configuring UE measurements.

4. The gNB-CU-UP shall select the suitable UEs for MDT data collection. If the serving PLMN is not within the Management Based MDT PLMN List the UE shall not be selected by the gNB-CU-UP for MDT data collection as defined in TS32.422 [20].

For each selected UE, the gNB-CU-UP may send CELL TRAFFIC TRACE message to the gNB-CU-CP in the E1 UE associated signalling, including Trace ID for MDT

5. Upon reception of a CELL TRAFFIC TRACE message from E1, the gNB-CU-CP shall send CELL TRAFFIC TRACE message to the AMF for this UE, including Trace ID for MDT. The AMF forwards Trace ID and UE identity to the TCE.

If the gNB-CU-UP has received the *Polluted Measurement Indicator* IE, the gNB-CU-UP shall, if supported, include the information contained in such indicator, as well as a time stamp for the reception of the indicator, as part of the measurement report to be sent to the TCE so that the TCE is able to correlate and filter the affected measurements.

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