3GPP TSG-RAN WG2 Meeting #118 Electronic R2-2206445

Online, 09 – 20 May 2022

Source:　　　　CATT

Title:　　　　　Report of [AT118e][802][SON/MDT] UE capabilities related to SONMDT (CATT)

Agenda Item: 　6.13.5

Document for: Discussion and Decision

# Introduction

This document is the report of the following email discussion:

* **[AT118e][802][SON/MDT] UE capabilities related to SONMDT (CATT)**

Based on R2-2204944, R2-2204945 R2-2205073 and R2-2205705, discuss the necessary changes to 38.306 and 38.331

Intended outcome: Report and agreeable CRs

Deadline: 11:23 UTC, Monday May 16th

Please provide your comments before Monday 16/05/2022 5:00 UTC, to leave time for preparing the draft CRs.

# Contact information

Rapporteur encourages the participating delegates to provide their contact information in this table.

|  |  |
| --- | --- |
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# Discussion

## 3.1 UE capability of early measurement frequencies in logged MDT

In RAN2#117-e meeting, the early measurement frequencies in logged MDT feature is finally agreed to be supported in R17 in CB discussion. RAN2 made the following agreements:

Agreements:

1 If the earlyMeasIndication-r17 is not included, the UE is not allowed to log EM in logged MDT report (following legacy logged MDT behaviours).

2 If the earlyMeasIndication-r17 is included, for the following frequencies:

- If interFreqTargetInfo is included, for frequencies included in both interFreqTargetInfo and EMR config

- If interFreqTargetInfo is not included, for frequencies included in EMR config

- For inter-RAT related frequencies included in EMR config

How UE logs the measurements on EMR frequencies is left to the UE implementation.

3 For logging the measurements on EMR frequencies in logged MDT report, the qualityThreshold in measIdleConfig should not be applied.

This leads to additional complexities introduced at the UE for logging measurements on early measurement frequencies in logged MDT report.

However, the UE capability of early measurement frequencies in logged MDT is not introduced since the discussion of UE capability is early than the decision of introducing early measurement frequencies in logged MDT.

The early measurement frequencies in logged MDT related UE capability has been discussed in [Offline-877][SON\_MDT] SONMDT related UE Capabilities (CATT, Intel) in RAN2#117-e, and the summary and proposal are:

|  |
| --- |
| Summary of issue 2-2:  According to the feedback provided, 9 companies agree to introduce an optional UE capability with signalling for Early Measurement Logging in Logged MDT since the MDT/SON principle is that UE does not perform additional measurements for a SON/MDT feature; 1 company thought optional support without capability signalling is enough since the network may have no use to know whether the UE has the capability; 1 company thought it depends on how EMR is logged in logged MDT. To follow the majority view, rapporteur made the proposal as below:  Proposal 10 (9 out of 11): Introduce an optional UE capability with signalling for Early Measurement Logging in Logged MDT. |

Therefore, the early measurement frequencies in logged MDT related UE capability is proposed to be added in R17 specification of TS38.331 and TS38.306.

So it is proposed in [1][2][4] to add an optional UE capability with signalling for Early Measurement Logging in Logged MDT.

**Question 1: Do companies agree to add an optional UE capability with signalling for Early Measurement Logging in Logged MDT?**

|  |  |  |
| --- | --- | --- |
| Company | Yes/No | Comments if any |
| CATT | Yes | UE which has the capability of EMR may not have the capability of logging the EM result in the logged MDT. We cannot think simply that a feature should be naturally recorded for MDT usage if the UE supports the feature itself. Therefore this capability of earlyMeasLog-r17 is needed for MDT usage. |
| Qualcomm | Yes | Same view as CATT |
| Huawei, HiSilicon | Yes |  |
| Apple | Yes |  |
| Samsung | Yes |  |
| ITRI | Yes |  |
| ZTE | prefer conditional mandatory supported, i.e., if UE supports logged MDT and EMR, it supports log EMR in logged MDT. | The intention of this feature is to help NW to map the coverage in case results on cell reselection frequencies might not be available (e.g., in high-speed scenarios) which is quite useful. Considering EMR in MDT is merged in neighboring cell results and how to log is left on UE implementation, the additional requirement is limited comparing to the gain. Therefore we prefer to have this feature conditional mandatory supported, i.e., if UE supports logged MDT and EMR, it supports log EMR in logged MDT. |
| Nokia | Yes | We accept UE vendors preference |

If Question 1 can be agreed, a new UE capability bit will be added in TS38.331, and the definition of this parameter will be added in TS38.306 (section 4.2.18 UE-based performance measurement parameters) accordingly. The definition is proposed in [2] as below:

| Definitions for parameters | Per | M | FDD-TDD DIFF | FR1-FR2 DIFF |
| --- | --- | --- | --- | --- |
| ***earlyMeasLog-r17***  Indicates whether the UE supports the storage of Early Measurement Logging in Logged MDT and the reporting in *UEInformationResponse* message as specified in TS 38.331 [9]. | UE | No | No | No |

**Question 2: If agreed with Question 1, do companies agree with the definition above for Early Measurement Logging in Logged MDT?**

|  |  |  |
| --- | --- | --- |
| Company | Yes/No | Comments if any |
| CATT | Partly yes | We made some change to align with other parameter definitions:  Indicates whether the UE supports the storage of Early Measurement Logging in logged measurements and the reporting upon request from the network as specified in TS 38.331 [9]. |
| Qualcomm |  | Agree with CATT changes |
| Huawei, HiSilicon | Yes | Agree with CATT changes. |
| Apple | Yes | Agree with CATT changes |
| Samsung | Yes | Also fine with CATT changes |
| ITRI |  | Agree with CATT changes. |
| Nokia | Yes | Agree with CATT changes |

**Summary**

According to the feedback provided, 7 companies (7/8) agree to add an optional UE capability with signalling for Early Measurement Logging in Logged MDT, 1 company prefers conditional mandatory supported, i.e., if UE supports logged MDT and EMR, it supports log EMR in logged MDT.

Since most companies support the addition of optional UE capability with signalling for early measurement in logged MDT, rapporteur made the proposal as below:

**Proposal 1: Add an optional UE capability with signalling for Early Measurement Logging in Logged MDT.**

## 3.2 Other TS38.306 corrections

The following 4 changes are made for TS38.306 correction as proposed in [3]:

|  |
| --- |
| Change 1: MHI is added in Abbreviations, i.e. Mobility History Information 3.3 Abbreviations For the purposes of the present document, the abbreviations given in TR 21.905 [1] 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 [1].  MHI Mobility History Information |
| Change 2: Add some text to some SON/MDT UE capabilities in order to be more precise 4.2.17 SON parameters  | Definitions for parameters | Per | M | FDD-TDD DIFF | FR1-FR2 DIFF | | --- | --- | --- | --- | --- | | ***success-HO-Report-r17***  Indicates whether the UE supports the storage and delivery of Successful Handover Report upon request from the network as specified in TS 38.331 [9]. | UE | No | No | No |  4.2.18 UE-based performance measurement parameters  | Definitions for parameters | Per | M | FDD-TDD DIFF | FR1-FR2 DIFF | | --- | --- | --- | --- | --- | | ***multipleCEF-Report-r17***  Indicates whether the UE supports the storage and delivery of multiple CEF reports upon request from the network as specified in TS 38.331 [9]. | UE | No | No | No | |
| Change 3: The wording logged MDT is changed into logged measurements 4.2.18 UE-based performance measurement parameters  | Definitions for parameters | Per | M | FDD-TDD DIFF | FR1-FR2 DIFF | | --- | --- | --- | --- | --- | | ***sigBasedLogMDT-OverrideProtect-r17***  Indicates whether the UE supports the override protection of the signalling based logged measurements configured in NR. | UE | No | No | No |  6 Conditionally mandatory features without UE radio access capability parameters  | Features | Condition | | --- | --- | | Logged measurements suspension due to IDC interference | It is mandatory to support Logged measurements suspension due to IDC interference for UEs which are supporting logged measurements in RRC\_IDLE and RRC\_INACTIVE upon request from the network and in-device coexistence indication as specified in TS 38.331 [9]. | |
| Change 4: For SpCell ID indication, SpCell ID is changed to spCellID-r17 in order to be more precise 5.7 MDT and SON features  | Definitions for feature | | --- | | **SpCell ID indication**  It is optional for UE to support the delivery of the spCellID-r17 in the RA-Report, if the RA procedure is performed in a SCell of the MCG/SCG. | |

Companies are welcome to provide your comment on the 4 changes above.

**Question 3: Do companies agree with all the 4 changes? If not, please provide the disagreed change number and your comments in the table below.**

|  |  |  |
| --- | --- | --- |
| Company | Yes/No | Comments if any |
| CATT | Yes for all | For change 4, the spCellID-r17 should be italic. |
| Qualcomm | Yes to all |  |
| Huawei, HiSilicon | Yes to all | Proponent. |
| Apple | Yes to all |  |
| Samsung | Yes |  |
| ITRI | Yes to all |  |
| ZTE | Yes |  |
| Nokia | yes |  |

**Summary**

According to the feedback provided, all companies (8/8) agree with the corrections listed above, 1 company think for change 4, the spCellID-r17 should be italic.

**Proposal 2: Add the corrections listed below in TS 38.306:**

**(1) MHI is added in Abbreviations, i.e. Mobility History Information;**

**(2) Add some text to some SON/MDT UE capabilities in order to be more precise;**

**(3) The wording logged MDT is changed into logged measurements;**

**(4) For SpCell ID indication, SpCell ID is changed to spCellID-r17 in order to be more precise.**

# Conclusion

**Proposal 1: Add an optional UE capability with signalling for Early Measurement Logging in Logged MDT.**

**Proposal 2: Add the corrections listed below in TS 38.306:**

**(1) MHI is added in Abbreviations, i.e. Mobility History Information;**

**(2) Add some text to some SON/MDT UE capabilities in order to be more precise;**

**(3) The wording logged MDT is changed into logged measurements;**

**(4) For SpCell ID indication, SpCell ID is changed to spCellID-r17 in order to be more precise.**

# Reference

1. R2-2204944 [C329] Add MDT related UE Capabilities of EMR CATT draftCR Rel-17 38.331
2. R2-2204945 Add MDT related UE Capabilities of EMR CATT draftCR Rel-17 38.306
3. R2-2205073 Corrections on TS 38.306 for UE capabilities for SON and MDT Huawei, HiSilicon CR Rel-17 38.306
4. R2-2205705 SON MDT UE Capabilities Qualcomm Incorporated discussion