**3GPP TSG RAN2 #116-e R2-21XXXXX**

**Online, 1 – 12 November 2021**

**Agenda Item:**  **8.13.3.1 Immediate MDT enhancements**

**Source: ZTE, Sanechips**

**Title:** **[AT116-e][851][SON/MDT] IMM MDT again (ZTE)**

**Document for: Discussion and Decision**

### 1 Introduction

This is to address the following offline discussion:

* [AT116-e][851][SON/MDT] IMM MDT again (ZTE)

 Scope: focus on proposals 5 and 7 in R2-2110738.

     Intended outcome: Report

      Deadline: 05:00 UTC, Wednesday November 10th

Please add company contact details into the following table to assist communication between delegates.

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| **Company** | **Name** | **Email Address** |
| Rapporteur (ZTE) | Qiu Zhihong | qiu.zhihong@zte.com.cn |
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###  Discussion

After first SON/MDT online session, following agreements have been achieved on M5/M7 measurements:

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| Agreements3.At least for OAM observability, MN and SN can calculate M5 measurement in the DU respectively when split bearer is used.6. MN and SN can calculate M7 measurement in the DU respectively when split bearer is used.7 From RAN2’s perspective, indication of duplication status is beneficial to be included for M5/M7 measurement in split bearer |

There are still remaining issues on P5 and P7 in R2-2110738, which will be further discussed in this offline.

#### On proposal 5

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| **Proposal 5: RAN2 further discuss enhancements on M5 measurement in split bearer based on following alternatives:****Alt1: the CU or TCE can get the throughput based on the following formula:**$$\frac{sum of the total data in MCG and SCG legs}{transmission duration time in MCG or SCG}$$**Alt2: UE calculates and reports its throughput to NW;****Alt3: Compute the overall throughput at the CU-UP based on following information:****New indications from the DU to the CU to include the measurements mentioned in 5b, 5c and 5d.** |

Based on companies comments during email discussion[Post115-e][895] [2], it is proposed that M5 measurements needs to be enhanced to obtain accurate UE throughput measurements, and methods as listed in above proposal 5 has been proposed. In addition, the new indication indicated in alt3 referred to following information:

* 5b: Burst Size of data transmitted over SN (taking multiple transmission slots)
* 5c: The point in time when the data until the second last piece of data burst TX over SN has been successfully received at the UE
* 5d: The RLC SDU sequence number of packets lost over the Uu interface

According to above observations, rapporteur would like ask the following question:

**Question-1: Which alternatives as listed in proposal 5 do you prefer to adopt for enhanced M5 measurement?**

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| **Company** | **Alt1/2/3/other..** | **Comments** |
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**Rapporteur summary:**

To be added later

#### On proposal 7

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| **Proposal 7: RAN2 study whether enhancements on M7 measurement is needed when split bearer is used.**  |

During email discussion[2], there are some support to enhance M7 measurement while there are also opinions indicating existing M7 is sufficient. Thus, rapporteur would like to ask the following question:

**Question-2: Do you agree enhancement on M7 measurement is needed for split bearers?**

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| **Company** | **Agree/Disagree** | **Comments** |
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**Rapporteur summary:**

To be added later

Following methods are proposed in email discussion [Post115-e][895] for enhanced M7 measurement:

Alt1:

* For duplication case, M7 could be: MIN (M7 in leg1, M7 in leg2)
* For non-duplication case, M7 could be:

$$\frac{number of loss packets in leg1+number of loss packets in leg2}{number of packets in leg1+number of packets in leg2}$$

Alt2: Introduce new layer-2 measurements to be performed by the CU-UP in association to M7 measurements in split bearer scenarios.

1) Number of duplicated packets during the measurement period

2) Number of non-duplicated packets sent over MCG during the measurement period

3) Number of non-duplicated packets sent over SCG during the measurement period

Alt3: UE calculates and reports M7 to NW;

**Question-3: If your answer to Q2 is agree, please indicate which alternatives you prefer for enhanced M7 measurements?**

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| **Company** | **Alt1/2/3/other..** | **Comments** |
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**Rapporteur summary:**

To be added later

### Conclusion

**To be added later.**

###  References

1. R2-116-e SONMDT HuNan 2021-11-03-1615 UTC Session chair (CMCC)
2. R2-2110738 Report of [Post115-e][895][SON/MDT] IMM MDT ZTE Corporation, Sanechips report Rel-17