**3GPP TSG-RAN WG2 Meeting #116 electronic R2-21xxxxx**

**Online, 1 – 12 Nov 2021**

**Agenda Item: 8.13 SON/MDT**

**Source: Huawei**

**Title: Report of [AT116e][831][SON/MDT] Reply LS on M6 calculation for split bearers in MR-DC (Huawei)**

**Document for: Discussion and decision**

# Introduction

This document is to kick off the following email discussion:

* **[AT116e][831][SON/MDT] Reply LS on M6 calculation for split bearers in MR-DC (Huawei)**

Based on R2-2109347 to figure out the acceptable version on Reply LS

Intended outcome: Approved LS

Deadline: 05:00 UTC, Friday November 5th

**Contact Information**

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# Discussion

In the LS [1], it mentions as below:

RAN3 noted that there are some RAN2 agreements for the RAN part delay measurement calculation for split bearers in MR-DC for Qos monitoring.

7 For QoS monitoring related delay reporting to CN, the minimum value between two legs is defined as the total delay measurement M6 over MCG/SCG for split bearers WITH PDCP duplication.

Agreement:

For QoS monitoring related delay reporting to CN, ‘weighted average (consider the number of packets) over MN and SN’ is used to calculate the total delay measurement M6 over MCG/SCG for split bearers WITHOUT PDCP duplication.

RAN3 would like RAN2 to confirm whether above mentioned agreements are also applied to M6 for split bearers in MR-DC in MDT.

And then, the action to RAN2 is as below:

**To RAN2**

**ACTION:** RAN3 respectfully asks RAN2 to confirm whether above mentioned agreements are also applied to M6 for split bearers in MR-DC in MDT.

For the RAN2 agreements mentioned in the LS [1], they are related to RAN2 email reports [2][3]. In previous RAN2 discussions, these agreements are for QoS monitoring purpose. RAN3 question is about the MDT purpose.

**Q1: Whether the mentioned agreements in the LS [1] are applied to M6 for split bearers in MR-DC in MDT?**

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| --- | --- | --- |
| Company | Agree?  (Yes or No) | Comments |
| Qualcomm | Yes |  |
| Ericsson | Yes |  |
| Huawei, HiSilicon | Yes |  |
| Nokia | Yes |  |
| vivo | Yes |  |
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Summary: TBD

[4] is related to the LS [1], and it raises a question, i.e. which entity should combine the results from split bearers for L2M (QoS monitoring) and MDT. The corresponding analysis is as below:

Besides the combination method, it is essential to discuss where to combine the results from two legs. For L2 measurement, the OAM does not know the correspondence between the measurement results and UE. Thus it is better for the RAN side to combine the results from split bearers. For MDT measurement, the TCE is aware of the correspondence between the measurement results and UE. So it is better for the TCE to combine the results from split bearers. Furthermore, for MDT in R16, the MN and the SN send the measurement results to TCE independently in DC scenario, while in split gNB, the CU and the DU also send the measurement results to TCE independently in DC scenario. It is better to keep aligned with R16.

**Proposal 2: For split bearer in MR-DC, if it is for L2 measurement, RAN should combine the M6 measurement results and sent them to OAM; if it is for MDT, TCE should combine the M6 measurement results.**

It is proposed to collect companies’ opinions regarding proposal 2.

**Q2: Do companies agree with proposal 2 in [4]?**

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| --- | --- | --- |
| Company | Agree?  (Yes or No) | Comments |
| Qualcomm | With some clarification | In my understanding, SA5 is not interested in the UL PDCP delay measurements from the UE. From the LS sent by SA5 in ***S5-211350*** and ***S5-211350,*** SA5 is interested in the RAN part UL packet delay result excluding the UL D1 packet delay. Therefore, RAN should not combine M6 measurement results from UE and send them to OAM. For OAM, RAN should only combine RAN part delay excluding UL D1 measurements. |
| Ericsson | Agree | It is important to maintain the same principle as we have applied all through rel-16 (for non split bearer) wherein the individual components of the delay are sent to the OAM and then OAM can compute the overall delay.  Now for split bearer, we follow the same principle. |
| Huawei, HiSilicon | Agree | For “if it is for MDT, TCE should combine the M6 measurement results.”, it is following the principle for Rel-16 SON/MDT (as mentioned by Ericsson).  For “if it is for L2 measurement, RAN should combine the M6 measurement results and sent them to OAM”, our intention is that OAM may be interested in UL/DL RAN delay. One evidence is that, in TS 28.552 v16.4.0, section **A.4 Monitoring of UL and DL user palnce delay in NG-RAN** has the following text:  With performance measurements allowing the operator to obtain or derive the UL and DL user plane delay information separately, the operators can pinpoint the services performance problems to specific problems in UL or DL. |
| Nokia | RAN should “sent” M6 results | We agree with Ericsson, that individual components should be delivered to TCE, thus the specific requirement on “combination” (that would impose sgnalling changes) is not necessary |
| vivo | Agree |  |
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Summary: TBD

For Q1, if there are some consensuses in RAN2, they should be captured in the reply LS. For Q2, if the answer is Yes (or there are some consensuses), it may be discussed whether to also include this part in the reply LS.

**Q3: If the answer to Q2 is Yes, do you agree to capture the relevant agreements in the reply LS (to RAN3)?**

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| Company | Agree?  (Yes or No) | Comments |
| Qualcomm | Maybe not | I believe what proposal 2 proposes is quite standard and we may not need to emphasize this in the LS reply. |
| Ericsson | Yes | The proposal-2 helps in clarifying to RAN3 that RAN2 does not want a solution wherein CU-UP collects all the individual delay measurements and compute the total delay and sends to the TCE. |
| Huawei, HiSilicon | Yes | We think proposal 2 is related to RAN3, e.g. whether M6 is to be sent separately/jointly to OAM/TCE. In addition. We agree with Ericsson’s comments.  So it will be helpful to send relevant RAN2 agreements to RAN3. |
| Nokia | No | We agree with Ericsson, but afraid the agreement on “combination” might be misinterpreted |
| vivo | Yes | This helps RAN3 understand our agreements and solve ambiguity. |
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Summary: TBD

# Conclusions

[To be added]

# Reference

[1] R2-2109347 MDT M6 calculation for split bearers in MR-DC (R3-214466; contact: Huawei) RAN3 LS in Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core To:RAN2

[2] R2-2100703 Report of [Post112-e][852][NR R17 SONMDT] R17 L2M enhancement (vivo) vivo report Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

[3] R2-2102147 The report of[Offline-822][NR R17 SONMDT] M6 (vivo) vivo

[4] R2-2110639 Discussion on M6 calculation for split bearers in MR-DC (RAN3 LS R2-2109347) Huawei, HiSilicon discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core