**3GPP TSG RAN WG1#105\_e R1-21xxxxxx**

**E-meeting, 19th – 27th May 2021**

Agenda Item: **8.9.3**

Source: **Moderator (Sony)**

Title: **Feature Lead Summary [105-e-LTE-Rel17\_NB\_IoT\_eMTC-03]**

Document for: **Discussion**

# Introduction

This document summarises the input documents to RAN1#105e concerning the support of a maximum DL TBS of 1736 bits as a Rel-17 optional UE capability for eMTC.

The following conclusion was reached at RAN1#104e [ref: Chairman’s notes for RAN1#104e]:

**Conclusion**

“NOTE: It is RAN1 assumption that 1736 DL TBS feature is compatible with all other eMTC features applicable for HD-FDD Cat. M1 UEs in CE mode A. It is assumed that there’s no change to DCI formats, TBS tables and CQI tables.”

The following agreement was made at RAN1#104e [ref: Chairman’s notes for RAN1#104e]:

**Agreement**

The 1736 bits DL TBS feature is enabled by unicast RRC configuration.

# Discussion

The following issues were raised in the input Tdocs to RAN1#105e:

## Compatibility of 1736 bit DL TBS with other features

FL Summary

The conclusion in RAN1#104e was that it is assumed that the 1736 bit DL TBS feature is compatible with all other eMTC features. An input document at this meeting listed some features (PUR, multi-TB scheduling and SC-MTCH/multicast) that the 1736 bit DL TBS should be compatible with. This doesn’t change the assumption that was concluded in RAN1#104e.

Adding a unicast RRC parameter to the PUR configuration to enable the 1736 bit DL TBS feature is consistent with the agreement in RAN1#104e that “*The 1736 bits DL TBS feature is enabled by unicast RRC configuration*”. RAN2 can consider the details of RRC signaling.

FL conclusion

The feature list discussion can occur at the end of the release. The assumption remains that the 1736 bit DL TBS feature is compatible with all other eMTC features.

Company views:

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| **Company** | **View** |
| ZTE  R1-2104718 | PUR is independently configured by higher layers. A unicast RRC parameter can be added in the PUR configuration to enable the 1736 bit DL TBS feature.  DL TBS of 1736 bits is supported in multi-TB scheduling.  If DL TBS of 1736 bits is supported for multicast, the downlink data would be transmitted separately for capable and non-capable UEs, decreasing multicast efficiency. |

Proposals:

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| **Company** | **Proposal** |
| ZTE  R1-2104718 | ***Proposal 1: DL TBS of 1736 bits could be supported in PUR procedure.***   * ***A unicast RRC parameter is added in PUR configurations to enable the 1736 bits feature.***   ***Proposal 2: DL TBS of 1736 bits is supported in multi-TB scheduling.***  ***Proposal 3: DL TBS of 1736 bits may be supported for SC-MTCH in multicast.*** |

### Company comments on compatibility of 1736 bit DL TBS with other features

The FL conclusion is that:

*The feature list discussion can occur at the end of the release. The assumption remains that the 1736 bit DL TBS feature is compatible with all other eMTC features*.

**Do you agree with the above conclusion? Is there anything that needs to be discussed at RAN1#105e?**

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| **Company** | **View** |
| Ericsson | In our view none of the proposals are needed, in RAN1# 104-bis we agreed a kind of magic sentence precisely to avoid having to go feature by feature on what can be supported (i.e., unless an issue were found, all other features applicable for HD-FDD Cat. M1 UEs in CE mode A are supported):  **Conclusion**  “NOTE: It is RAN1 assumption that 1736 DL TBS feature is compatible with all other eMTC features applicable for HD-FDD Cat. M1 UEs in CE mode A. It is assumed that there’s no change to DCI formats, TBS tables and CQI tables.”  We also think there is no need to write as a conclusion that “*The feature list discussion can occur at the end of the release.*” since this can take us to the exact same situation in a near future.  If something is to be captured in the Chairman’s notes, perhaps is sufficient something along the lines of the last part of the sentence proposed by the feature lead:  *On what features can be supported along with* *the 1736 bits DL TBS feature, the assumption remains that the 1736 bits DL TBS feature is compatible with all other eMTC features applicable for HD-FDD Cat. M1 UEs in CE mode A*. |
| Nokia, NSB | We have similar view as Ericsson. Our understanding is also that RAN1 can make the assumption that 1736 DL TBS feature is compatible with all other eMTC features applicable for HD-FDD Cat. M1 UEs in CE mode A. Therefore, we don't need to revisit the discussion on feature list related to the support of this feature. |
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## RAN2 Impacts: L2 buffer size

FL Summary

The L2 buffer size can be discussed in RAN2. There is no action for RAN1.

Company views:

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| **Company** | **View** |
| Ericsson  R1-2105891 | The document observes the L2 buffer sizes that have been proposed in RAN2 for the 1736 bit DL TBS feature:  • For Cat M1 UE supporting max DL TBS of 1736 bits, the L2 buffer size is [24000] bytes when maximum number of UL-SCH transport block bits transmitted within a TTI is 1000 bits.  • For Cat M1 UE supporting max DL TBS of 1736 bits, the L2 buffer size is 30000 bytes when maximum number of UL-SCH transport block bits transmitted within a TTI is 2984 bits. |

Proposals:

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| **Company** | **Proposal** |
| Ericsson  R1-2105891 | Observation 1:  In terms of the Layer 2 buffer size requirements for the support of a max DL TBS of 1736 bits for HD-FDD Cat. M1 UEs in CE mode A, the following has been proposed in [2]:   * For Cat M1 UE supporting max DL TBS of 1736 bits, the L2 buffer size is [24000] bytes when maximum number of UL-SCH transport block bits transmitted within a TTI is 1000 bits. * For Cat M1 UE supporting max DL TBS of 1736 bits, the L2 buffer size is 30000 bytes when maximum number of UL-SCH transport block bits transmitted within a TTI is 2984 bits. |

# Conclusions

This document is the feature lead summary for the support of a 1736 bit DL TBS for eMTC.

<< conclusion to be added after the end of any potential email discussion >>

# References

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| [R1-2104718](file:///C:\Users\wanshic\OneDrive%20-%20Qualcomm\Documents\Standards\3GPP%20Standards\Meeting%20Documents\TSGR1_105\Docs\R1-2104718.zip) | Remaining issues on DL TBS of 1736 bits for CE mode A | ZTE |
| [R1-2105891](file:///C:\Users\wanshic\OneDrive%20-%20Qualcomm\Documents\Standards\3GPP%20Standards\Meeting%20Documents\TSGR1_105\Docs\R1-2105891.zip) | On the L2 Buffer Size for NB-IoT and LTE-M UEs | Ericsson |