3GPP TSG-RAN WG2#115-e R2-2109145

Electronic meeting, 16th August – 27th August 2021

Agenda Item: 6.4.1

Source: Ericsson

Title: Report of [Offline-887][SONMDT] On UL delay configuration in LTE (Ericsson)

Document for: Discussion, Decision

# 1 Introduction

This document provides the outcome of the following offline discussion conducated during RAN2#115 meeting:

* [AT115e][887][SON/MDT] On UL delay configuration in LTE (Ericsson)

Collect companies’ view on the CR (R2-2108299). If and only if everyone is fine with the change, the outcome of the email discussion is the agreed CR.

Intended outcome: Agreed CR

Deadline:11:00 UTC, Thursday August 26th

# 2 Contact Information

To make it easier to find the correct contact delegate in each company for potential follow-up questions, the rapporteur encourages the delegates who provide input to provide their contact information in this table:

|  |  |
| --- | --- |
| Company | Contact: Name (E-mail) |
| Ericsson (Rapporteur) | Pradeepa Ramachandra (pradeepa.ramachandra@ericsson.com) |
| Qualcomm | Rajeev Kumar (rkum@qti.qualcomm.com) |
| Samsung | Sangyeob Jung (sy0123.jung@samsung.com) |
| Huawei, HiSilicon | Jun Chen (jun.chen@huawei.com) |
| Apple | Sasha sirotkin <ssirotkin@apple.com> |
| CATT | Erlin Zeng (erlin.zeng@catt.cn) |
| vivo | Ming WEN (ming.wen@vivo.com) |
| Nokia | malgorzata.tomala@nokia.com |
|  |  |

# 3 Discussion

The contribution in [1] has addressed two issues.

## 3.1 Issue#1

**Reason for change:**

In LTE, we can configure either ulDelayConfig or ULdelayValueConfig. The current text in TS-37.320 Section 5.1.4 states the following.

-     The E-UTRA UE may indicate a capability for support of UL PDCP delay measurement when the UE is not configured with MR-DC.

-     The E-UTRA UE may indicate a capability for support of UL PDCP Packet Average Delay measurement when the UE is configured with EN-DC.

Support for these capabilities are described by *ul-PDCP-Delay-r13* and *ul-PDCP-AvgDelay-r16* IEs, respectively in TS 36.306.

4.3.6.17 *ul-PDCP-Delay-r13*

This field defines whether the UE supports UL PDCP Packet Delay per QCI measurement as specified in TS 36.314 [25]. A UE that supports the UL PDCP Delay measurement shall also support the measurement configuration and reporting as specified in TS 36.331 [5].

4.3.13.10 *ul-PDCP-AvgDelay-r16*

This parameter indicates whether the UE supports UL PDCP Packet Average Delay measurement (as specified in TS 38.314 [41]) and reporting in RRC\_CONNECTED state.

From the definitions it is evident that these capabilities are independent of DC capability of the UE.

Furthermore, configuration for these measurements is described by *UL-DelayConfig* and *UL-DelayValueConfig* IEs, respectively in TS 36.331.

5.5.2 Measurement configuration

5.5.2.1 General

E-UTRAN applies the procedure as follows:

-…

- to configure at most one measurement identity using a reporting configuration with *ul-DelayConfig*;

- to configure at most one measurement identity using a reporting configuration with *ul-DelayValueConfig*;

- …

In the following, an example scenario is explained where network would configure an EN-DC connected UE with signalling based immediate MDT configuration. To receive the uplink delay from the UE on a DRB associated to MCG bearer, network would provide it with a reporting configuration using *ul-DelayValueConfig.* However, upon handover, if the new MN decides not to configure any dual connectivity, UE will still follow the configuration received in *ul-DelayValueConfig* IE; network is not supposed to provide it with a new configuration.

It is apparent that configurations of these parameters are not dependent on Dual Connectivity configuration of the UE.

Hence, to harmonize the standards, modification of the text in TS 37.320 is required.

**Proposed change:**

Statements amended in TS 37.320 section 5.1.4 to conform with TS 36.306 and TS 36.331.

- The E-UTRA UE may indicate a capability for support of UL PDCP delay measurement.

- The E-UTRA UE may indicate a capability for support of UL PDCP Packet Average Delay measurement .

**Question-1: Are the changes associated to issue#1 agreeable?**

|  |  |  |
| --- | --- | --- |
| **Company name** | **Yes/No** | **Comments** |
| Qualcomm | No | We added “when the UE is not configured with MR-DC” to denote that M6 measurements will not be configured at the UE in EN-DC scenarios. To avoid M6 measurement configuration at the UE in MR-DC scenario, UE don’t provide the capability information when in MR-DC. |
| Samsung | No | In our understanding, it has been extensively discussed at RAN2#110-e meeting and the conclusion was reflected as in the current specification (i.e. see the discussion in R2-2005915 and the agreed CR in R2-2006342). Hence, we think that it would be good to NOT pursue the proposed changes at this stage. |
| Huawei, HiSilicon | No | Share similar views as Qualcomm. |
| Apple | No |  |
| ZTE | Can be considered in Rel-17 | We actually share some sympathy on Ericsson’s understanding that current stage3 specs doesn’t prevent from doing so. Considering it is late stage, perhaps enhancements can be discussed in Rel-17 |
| CATT | No | Maybe change in R17 can be considered. |
| vivo | Can be considered in Rel-17 | We are open to discuss this in Rel-17. |
| Nokia | Can be considered for Rel-17 | The discrepancy between stage 2 and stage 3 may lead to different behaviours. While the addition was contiously added (as Qualcomm recalls) to prevent some configurations, the stage 3 does not prevent them.  Overall, stage 2 and stage 3 are usually jointly taken for implementing features, thus, we trust nothing is broken in Rel-16. However we do support further explanations to the Rel-17 specs. |
| Ericsson | Yes | To us, stage-3 specification should suffice for implementaiton and stage-2 is there mainly as a reference document and therefore, we were proposing to align stage-2 with stage-3 specifications.  However, we are fine with working on it in Rel-17 and making sure that stage-2 and stage-3 specs are aligned. |

**Rapporteur Summary:**

Based on the comments from the companies, there is not much support and few companies are fine to introduce this change in Rel-17 but not in Rel-16. Therefore, the changes assocaited to issue#1 is not agreeable.

1. Changes associated to issue#1 in R2-2108299 is not pursued.

## 3.2 Issue#2

**Reason for change:**

For terminology used for NR PDCP average delay measurement is not the same as the one used for LTE. This causes confusion as the terminology used in NR (UL PDCP delay measurement) is same as the one used for legacy UL PDCP delay measurement and not the UL PDCP average delay measurement.

**Proposed change:**

It is clarified that the delay measurement in NR is average PDCP delay measurement.

- The NR UE may indicate a capability for support of UL PDCP packet average delay measurement.

**Question-2: Is the change associated to issue#2 agreeable?**

|  |  |  |
| --- | --- | --- |
| **Company name** | **Yes/No** | **Comments** |
| Qualcomm | Yes | In TS 38.306, we have the following definition, so it should be okay.  ***ulPDCP-Delay-r16***  Indicates whether the UE supports UL PDCP Packet Average Delay measurement (as specified in TS 38.314 [26) and reporting in RRC\_CONNECTED state. |
| Samsung | Yes | It is good to clarify the proposed change to avoid any confusion. |
| Huawei, HiSilicon | Yes |  |
| Apple | Yes |  |
| ZTE | Yes |  |
| CATT | Yes |  |
| vivo | Yes |  |
| Nokia | yes |  |
| Ericsson | Yes |  |

**Rapporteur Summary:**

All companies support the change proposed for issue#2 and therefore this change is agreeable.

1. Changes associated to issue#2 in R2-2108299 is agreeable.

# 4 Conclusion

The following proposals were made in section 3.

[Proposal 1 Changes associated to issue#1 in R2-2108299 is not pursued.](#_Toc80793245)

[Proposal 2 Changes associated to issue#2 in R2-2108299 is agreeable.](#_Toc80793246)

# 5 References

1. R2-2108299 On UL delay configuration in LTE, Ericsson, RAN2#115-e meeting, August 2020.