**3GPP TSG RAN WG1 #101-e R1-20xxxxx**

e-Meeting, May 25th – June 5th, 2020

Source: NTT DOCOMO, INC.

Title: Summary on [101-e-NR-TEIs-01]

Agenda Item: 7.2.12

**Document for:** **Discussion and Decision**

# **Introduction**

This contribution summarizes the NR Rel-16 TEI related and CLI/RIM related discussions and proposals in AI 7.2.12.

[101-e-NR-TEIs-01] Email discussion/approval on remaining issues for CLI measurement

* Whether/how to capture the agreement regarding the number of antenna ports per SRS resource for SRS-RSRP measurement in TS38.214
  1. TP in [R1-2003492](file:///C:\wanshic\OneDrive%20-%20Qualcomm\Documents\Standards\3GPP%20Standards\Meeting%20Documents\TSGR1_101\Docs\R1-2003492.zip) as starting point for the discussion

By 5/28 – Hiroki (DCM)

# **Remaining issue for CLI measurement**

In [2], the following remaining issue regarding CLI measurement is identified.

* The RAN1#100bis-e agreement “A multi-port SRS-RSRP measurement is not supported in Rel-16” should be captured in 38.214.

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| In the RAN1 #100bis e-meeting, the agreements reached in the topic of UE features for CLI/RIM are as follows.  Agreements:   * FG17-1 is kept for support of CLI-RSSI measurement.   ...   * FG17-2 is kept for support of SRS-RSRP measurement. * FG17-2 includes component “maximum number of measurement resources configured for SRS-RSRP measurement” and “maximum number of measurement resources configured for SRS-RSRP measurement within a slot”. * Candidate values for FG17-2 component “maximum number of measurement resources configured for SRS-RSRP measurement” are {4, 8, 16, 32}. * Candidate values for FG17-2 component “maximum number of measurement resources configured for SRS-RSRP measurement within a slot” are {2, 4, 8}. * FG-17-2 is reported per UE with FR1/FR2 differentiation. * A joint limit for CLI SRS, SSB and CSI-RS for RSRP measurement in a slot is not defined in Rel-16. * A multi-port SRS-RSRP measurement is not supported in Rel-16.   Wherein, the agreements of two new components and the corresponding candidate values in FG17-2 for SRS-RSRP measurement belong to UE feature, which do not need to be reflected in physical layer specifications. However, in our opinion, the agreement of “A multi-port SRS-RSRP measurement is not supported in Rel-16” should be captured in 38.214.The following TP in TS 38.214 are proposed to capture above agreement on ports of SRS resource.  **Proposal 1: Adopt the following text proposal.**  ------------------------------- < Start of text proposal for Clause 5.1.6.4 of 38.214> ------------------------------------  5.1.6.4 SRS reception procedure for CLI  The SRS resources defined in Clause 6.4.1.4 of [4, TS 38.211] may be configured for SRS-RSRP measurement for CLI, as defined in Clause 5.1.19 of [7, TS 38.215]. The UE is not expected to measure SRS-RSRP with a subcarrier spacing other than the one configured for the active BWP confining the SRS resource. The UE is not expected to measure SRS-RSRP using the SRS-RSRP measurement resource which is not fully confined within BW of DL active BWP. The UE is not expected to measure more than 32 SRS resources, and the UE is not expected to receive more than 8 SRS resources in a slot. The UE is not expected the number of antenna ports per SRS resource for SRS-RSRP measurement is larger than one.  -------------------------------------------------- < End of text proposal> ----------------------------------------------------- |

Based on above, following remaining issue for CLI measurement and reporting should be discussed in RAN1#101-e meeting.

* **Whether/how to capture the agreement regarding the number of antenna ports per SRS resource for SRS-RSRP measurement in TS38.214**
  + **TP in R1-2003492 as starting point for the discussion**

The FL proposal is to adopt the TP in R1-2003492.

**FL proposal 1:**

* **Adopt the TP in R1-2003492**

Companies are encouraged to check above FL proposals and to provide feedback if any in below. If you cannot accept the FL proposals, please put your company name after “Cannot accept the proposals” below and please provide your alternative proposal (in your comment) which could be acceptable to all in your consideration.

Cannot accept the proposals:

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| --- | --- |
| Company | Comment |
| Qualcomm | We agree with the TP in general. Maybe some wording update can be made  ------------------------------- < Start of text proposal for Clause 5.1.6.4 of 38.214> ------------------------------------  5.1.6.4 SRS reception procedure for CLI  The SRS resources defined in Clause 6.4.1.4 of [4, TS 38.211] may be configured for SRS-RSRP measurement for CLI, as defined in Clause 5.1.19 of [7, TS 38.215]. The UE is not expected to measure SRS-RSRP with a subcarrier spacing other than the one configured for the active BWP confining the SRS resource. The UE is not expected to measure SRS-RSRP using the SRS-RSRP measurement resource which is not fully confined within BW of DL active BWP. The UE is not expected to measure more than 32 SRS resources, and the UE is not expected to receive more than 8 SRS resources in a slot. The UE does not expect the number of antenna ports per SRS resource for SRS-RSRP measurement is larger than one.  -------------------------------------------------- < End of text proposal> ----------------------------------------------------- |
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Based on the above feedbacks, the updated proposals are made.

**Updated FL proposal 1:**

* **Adopt the following TP to TS38.214 5.1.6.4.**

------------------------------- < Start of text proposal for Clause 5.1.6.4 of 38.214> ------------------------------------

5.1.6.4 SRS reception procedure for CLI

The SRS resources defined in Clause 6.4.1.4 of [4, TS 38.211] may be configured for SRS-RSRP measurement for CLI, as defined in Clause 5.1.19 of [7, TS 38.215]. The UE is not expected to measure SRS-RSRP with a subcarrier spacing other than the one configured for the active BWP confining the SRS resource. The UE is not expected to measure SRS-RSRP using the SRS-RSRP measurement resource which is not fully confined within BW of DL active BWP. The UE is not expected to measure more than 32 SRS resources, and the UE is not expected to receive more than 8 SRS resources in a slot. The UE does not expect the number of antenna ports per SRS resource for SRS-RSRP measurement is larger than one.

-------------------------------------------------- < End of text proposal> -----------------------------------------------------

Based on further discussion, the conclusion is no TP is necessary since it is already clear in RAN2 specification.

# **Conclusion**

**No TP is necessary.**

# **References**

[1] R1-2003423 Remaining issues on Half-Duplex Operation in CA vivo

[2] R1-2003492 Remaining issues on CLI ZTE

[3] R1-2003610 Remaining issues of half-duplex operation in CA CATT

[4] R1-2003692 On TRS muting for NR coexistence with a narrow band system MediaTek Inc.

[5] R1-2003763 Maintenance of aperiodic CSI-RS triggering with beam switching timing of 224 and 336 Intel Corporation

[6] R1-2003923 On ambiguous TBS due to ambiguity of Ninfo NEC

[7] R1-2004259 On remaining issues of HD UE feature Nokia, Nokia Shanghai Bell

[8] R1-2004604 Discussion on the conditions of rate matching pattern overlapping with PDSCH DMRS symbols Huawei, HiSilicon

[9] R1-2004642 Remaining issue for Rel-16 maintenance Ericsson