**3GPP TSG RAN WG1 Meeting #103-e R1-20xxxxx**

**E-Meeting, October 26 – November 13, 2020**

**Agenda Item: 5**

**Source: Moderator (Huawei)**

**Title: Summary on [103-e-AI5-LS-01] on Incomplete LTE Physical Layer Capabilities**

**Document for: Discussion and Decision**

# Introduction

In RAN1#103-e, an LS from RAN2 was received on incomplete LTE physical layer capabilities [1].

This documents provides the proposals and summary of discussions of the following second phase email discussion regarding the reply to the RAN2 LS.

[103-e-AI5-LS-01] For LS in [R1-2007518](file:///C%3A%5CUsers%5Cwanshic%5COneDrive%20-%20Qualcomm%5CDocuments%5CStandards%5C3GPP%20Standards%5CMeeting%20Documents%5CTSGR1_103%5CDocs%5CR1-2007518.zip), a reply LS may be necessary – email discussion/approval till 10/29 (to be handled under AI5) – Huawei (name TBD)

# Discussion

Issue 1: On FDD/TDD differentiation of some capabilities.

* RAN1 is asked to provide feedback regarding the FDD/TDD differentiation as listed in the table in [1]:

*To provide feedback on whether RAN1 has any concern with updating FDD/TDD differentiation for the listed physical layer capabilities.*

* In [2], the following feedback is proposed:

*RAN1 has no concern on the intended changes.*

Please input your comments to the proposed feedback:

|  |  |
| --- | --- |
| Companies | Comments |
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|  |  |

Issue 2: On value ranges of *nMaxResource*.

* RAN1 is asked to provide feedback regarding the value ranges for nMaxResource in both nzp-CSI-RS-AperiodicInfo-r14 and nzp-CSI-RS-PeriodicInfo-r14 [1]:

*To provide feedback on the correct value range to use for nMaxResource in both nzp-CSI-RS-AperiodicInfo-r14 and nzp-CSI-RS-PeriodicInfo-r14.*

MIMO-UE-ParametersPerTM-v1430 ::= SEQUENCE {

 nzp-CSI-RS-AperiodicInfo-r14 SEQUENCE {

 nMaxProc-r14 INTEGER(5..32),

 nMaxResource-r14 ENUMERATED {ffs1, ffs2, ffs3, ffs4}

 } OPTIONAL,

 nzp-CSI-RS-PeriodicInfo-r14 SEQUENCE {

 nMaxResource-r14 ENUMERATED {ffs1, ffs2, ffs3, ffs4}

 } OPTIONAL,

* In [2], the following feedback is proposed:

*The nMaxResource-r14 in both nzp-CSI-RS-AperiodicInfo-r14 and nzp-CSI-RS-PeriodicInfo-r14 can be one value of {1, 2, 4, 8}.*

Please input your comments on the question and proposed feedback:

|  |  |
| --- | --- |
| Companies | Comments |
| Huawei, HiSilicon | Regarding the Rel-14 capabilities related to MIMO that have not been captured in 36.306, propose to capture the following into the LS:In addition, RAN1 noticed that the following Rel-14 capabilities have not been captured in TS 36.306.

|  |  |
| --- | --- |
| Capabilities | Description |
| nzp-CSI-RS-AperiodicInfo-r14 | Indicates the support of aperiodic NZP CSI-RS transmission, separately per transmission mode (TM9, TM10). nMaxProc indicates the maximal number of updated CSI process for aperiodic NZP CSI-RS. nMaxResource indicates the maximum number of CSI-RS resources which can be activated by MAC CE for aperiodic NZP CSI-RS. |
| nzp-CSI-RS-PeriodicInfo-r14 | Indicates the support of periodic NZP CSI-RS transmission, separately per transmission mode (TM9, TM10). nMaxResource indicates the maximum number of CSI-RS resources which can be activated by MAC CE for periodic NZP CSI-RS. |

Action to RAN2:RAN1 kindly ask RAN2 to capture the listed capabilities into TS 36.306. |
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|  |  |

# Summary

To be added.

# References

1. R1-2007518, “LS on Incomplete LTE Physical Layer Capabilities”, Source: RAN2, To: RAN1, RAN1#103-e, 2020.
2. R1-2008342, “[DRAFT] Reply LS on Incomplete LTE Physical Layer Capabilities”, Huawei, RAN1#103-e, 2020.