**3GPP TSG RAN WG1 Meeting #105-e R1-210abcd**

**e-Meeting, May 10th – 27th, 2021**

**Agenda Item: 7.1**

**Source: Moderator (Huawei, HiSilicon)**

**Title: Summary of [105-e-NR-7.1CRs-05] Issue#15: Correction on enabling configuration of time restriction over L1-RSRP and CSI measurement**

**Document for: Discussion and Decision**

# Introduction

Following email thread is dedicated to discussing the issue in R1-2105539.

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**Background of Changes:**

The current specification has defined the UE behaviour for measurement restrictions for L1-RSRP and CSI in 5.2 of TS 38.214. For higher layer parameters *timeRestrictionForChannelMeasurements* and *timeRestrictionForInterferenceMeasurements*, there is a conflict between the configurations of two parameters in TS 38.214 and in TS 38.331. Specifically,

* In 38.214, the higher layer parameters *timeRestrictionForChannelMeasurements* and *timeRestrictionForInterferenceMeasurements* are interpreted optionally, i.e. “if a UE is not configured”. The measurement restriction for L1-RSRP is defined according to whether the parameter *timeRestrictionForChannelMeasurements* exist or not. The measurement restriction for CSI is defined according to whether the parameters *timeRestrictionForChannelMeasurements* and *timeRestrictionForInterferenceMeasurements* exist or not.
* On the other hand, in 38.331, the higher layer parameters *timeRestrictionForChannelMeasurements* and *timeRestrictionForInterferenceMeasurements* are mandatory as following. The candidate values of the two parameters are ‘configured’ and ‘notConfigured’.

 timeRestrictionForChannelMeasurements ENUMERATED {configured, notConfigured},

 timeRestrictionForInterferenceMeasurements ENUMERATED {configured, notConfigured},

 codebookConfig CodebookConfig OPTIONAL, -- Need R

If the measurement restrictions according to the description in 38.214 and *timeRestrictionForChannelMeasurements* or *timeRestrictionForInterferenceMeasurements* is configured as “notConfigured” by gNB, it can be still interpreted by UE that related time restriction on channel or interference measurement is enabled (based on specification of 38.214), although the gNB true intention is to disable channel filtering over L1-RSRP or CSI.

**Proposed Changes:**

5.2.1.4.3 L1-RSRP Reporting

< Unchanged parts are omitted >

If the value of higher layer parameter *timeRestrictionForChannelMeasurements* in *CSI-ReportConfig* is configured as ‘notConfigured’, the UE shall derive the channel measurements for computing L1-RSRP value reported in uplink slot n based on only the SS/PBCH or NZP CSI-RS, no later than the CSI reference resource, (defined in TS 38.211[4]) associated with the CSI resource setting.

If the value of higher layer parameter *timeRestrictionForChannelMeasurements* in *CSI-ReportConfig* is configured as ‘configured’, the UE shall derive the channel measurements for computing L1-RSRP reported in uplink slot n based on only the most recent, no later than the CSI reference resource, occasion of SS/PBCH or NZP CSI-RS (defined in [4, TS 38.211]) associated with the CSI resource setting.

< Unchanged parts are omitted >

5.2.2.1 Channel quality indicator (CQI)

< Unchanged parts are omitted >

If the value of higher layer parameter *timeRestrictionForChannelMeasurements* is configured as ‘notConfigured’, the UE shall derive the channel measurements for computing CSI value reported in uplink slot n based on only the NZP CSI-RS, no later than the CSI reference resource, (defined in TS 38.211[4]) associated with the CSI resource setting.

If the value of higher layer parameter *timeRestrictionForChannelMeasurements* in*CSI-ReportConfig* is configured as ‘configured’, the UE shall derive the channel measurements for computing CSI reported in uplink slot n based on only the most recent, no later than the CSI reference resource, occasion of NZP CSI-RS (defined in [4, TS 38.211]) associated with the CSI resource setting.

If the value of higher layer parameter *timeRestrictionForInterferenceMeasurements* is configured as ‘notConfigured’, the UE shall derive the interference measurements for computing CSI value reported in uplink slot n based on only the CSI-IM and/or NZP CSI-RS for interference measurement no later than the CSI reference resource associated with the CSI resource setting.

If the value of higher layer parameter *timeRestrictionForInterferenceMeasurements* in *CSI-ReportConfig* is configured as ‘configured’, the UE shall derive the interference measurements for computing the CSI value reported in uplink slot n based on the most recent, no later than the CSI reference resource, occasion of CSI-IM and/or NZP CSI-RS for interference measurement (defined in [4, TS 38.211]) associated with the CSI resource setting.

< Unchanged parts are omitted >

# Company Views

**Q1:** Do you agree with the analysis of background of changes, i.e. whether a change is needed in Rel-15 and Rel-16?

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| Company | Comments |
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**Q2:** If Q1 answer is yes from your point of view, do you have any comments/suggestions for above proposed changes?

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| --- | --- |
| Company | Comments |
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