**3GPP TSG RAN WG1 #102e R1-2006713**

**e-Meeting, August 17th – 28th, 2020**

**Source: Moderator (NTT DOCOMO, INC.)**

**Title: Summary on UE features for CLI/RIM**

**Agenda Item:** **7.2.11**

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

1. Introduction

This contribution summarizes the discussions and proposals in AI 7.2.11 regarding UE features for CLI/RIM.

Based on the discussions summarized in Section 2, following is one of the suggested email discussions/approvals for AI 7.2.11.

**FL proposal of email discussion/approval:**

**Email discussion/approval on UE features for CLI/RIM (17th – 19th August)**

* **Whether the slot in FG17-2 component 3 is a slot using the SCS of UE’s active DL BWP or a slot in SCS = 15kHz.**

Companies are encouraged to check above FL proposal and to provide feedback if any in below.

|  |  |
| --- | --- |
| Company | Comment |
| Samsung | Given that it was agreed that UE is not required to measure SRS using different SCS compared to the downlink active BWP SCS of the same carrier, we believe that the slot using the SCS of UE’s active DL BWP is aligned with the agreement. |
|  |  |
|  |  |
|  |  |

1. Discussion on NR Rel-16 UE features for CLI/RIM
   1. FG17-2

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 17. NR\_CLI\_RIM | 17-2 | SRS-RSRP measurement | 1. Support SRS-RSRP measurement. The max number of SRS resources across all CCs configured to measure SRS-RSRP shall not exceed 32.  2. Maximum number of measurement resources configured for SRS-RSRP measurement  3. Maximum number of measurement resources configured for SRS-RSRP measurement within a slot |  | Yes | N/A |  | Per UE | No (TDD only) | Yes | N/A | Candidate values for component 2 are {4, 8, 16, 32}.  Candidate values for component 3 are {2, 4, 8}.  CLI measurement is not supported in unlicensed bands in Rel-16 | Optional with capability signalling |

In [2], following proposal is made.

|  |
| --- |
| During [101-e-Post-NR-UE-Features-14] email discussion/approval for potential editorial updates of Rel-16 UE features, it is identified that further clarification on FG 17-2 component 3 is needed. There was a proposal to change the per-slot constraint on the maximum SRS-RSRP measurements to a constraint of maximum SRS-RSRP measurements within a fixed time period, i.e., 1ms (a slot of SCS=15kHz).  In RAN1 #95 AH1901 [2], the following agreement has been made  *For SRS-RSRP:*   * *The number of SRS to be monitored by the UE should not exceed 8 within a slot*   In the original agreement, the limitation is clearly stated as per-slot, not within a fixed time period. Therefore, we propose to clarify that the slot in FG 17-2 component 3 is a slot assuming the SCS of UE’s active DL BWP.  **Proposal 18: Clarify that the slot in FG 17-2 component 3 is a slot using the SCS of UE’s active DL BWP.** |

In [3], following proposal is made.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| For CLI SRS-RSRP measurement resources, FG 17-2 has defined the maximum number of SRS resources within a slot. However, there is no associated SCS for determining the slot duration. We propose to clarify that in the FG 17-2 component 3 text the slot is a slot in SCS=15kHz.  Proposal: Clarify that in FG 17-2 component 3, a slot is a slot in SCS = 15kHz.   |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | 17. NR\_CLI\_RIM | 17-2 | SRS-RSRP measurement | 1. Support SRS-RSRP measurement. The max number of SRS resources across all CCs configured to measure SRS-RSRP shall not exceed 32.  2. Maximum number of measurement resources configured for SRS-RSRP measurement  3. Maximum number of measurement resources configured for SRS-RSRP measurement within a slot in SCS = 15kHz |  | Yes | N/A |  | Per UE | No (TDD only) | Yes | N/A | Candidate values for component 2 are {4, 8, 16, 32}.  Candidate values for component 3 are {2, 4, 8}.  CLI measurement is not supported in unlicensed bands in Rel-16 | Optional with capability signalling | |

**Discussion point#1**

* **Whether the slot in FG17-2 component 3 is a slot using the SCS of UE’s active DL BWP or a slot in SCS = 15kHz.**

Reference

[1] R1-2006462 Updated RAN1 UE features list for Rel-16 NR Moderators (AT&T, NTT DOCOMO, INC.)

[2] R1-2005857 Rel-16 UE feature Intel Corporation

Appendix: UE features list for CLI/RIM in [1]

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Features** | **Index** | **Feature group** | **Components** | **Prerequisite feature groups** | **Need for the gNB to know if the feature is supported** | **Applicable to the capability signalling exchange between UEs (V2X WI only)”.** | **Consequence if the feature is not supported by the UE** | **Type**  **( 1) Per UE or 2) Per Band or 3) Per BC or 4) Per FS or 5) Per FSPC)** | **Need of FDD/TDD differentiation** | **Need of FR1/FR2 differentiation** | **Capability interpretation for mixture of FDD/TDD and/or FR1/FR2** | **Note** | **Mandatory/Optional** |
| 17. NR\_CLI\_RIM | 17-1 | CLI-RSSI measurement | 1. Support CLI-RSSI measurement. The max number of resources across all CCs configured to measure RSSI shall not exceed 64.  2. Maximum number of measurement resources configured for CLI-RSSI measurement |  | Yes | N/A |  | Per UE | No (TDD only) | Yes | N/A | Candidate values for component 2 are {8, 16, 32, 64}.  CLI measurement is not supported in unlicensed bands in Rel-16 | Optional with capability signalling |
| 17. NR\_CLI\_RIM | 17-2 | SRS-RSRP measurement | 1. Support SRS-RSRP measurement. The max number of SRS resources across all CCs configured to measure SRS-RSRP shall not exceed 32.  2. Maximum number of measurement resources configured for SRS-RSRP measurement  3. Maximum number of measurement resources configured for SRS-RSRP measurement within a slot |  | Yes | N/A |  | Per UE | No (TDD only) | Yes | N/A | Candidate values for component 2 are {4, 8, 16, 32}.  Candidate values for component 3 are {2, 4, 8}.  CLI measurement is not supported in unlicensed bands in Rel-16 | Optional with capability signalling |
| 17. NR\_CLI\_RIM | 17-3 | Simultaneous reception of DL signals/channels and CLI-RSSI measurement resource | Support simultaneous reception of DL signals/channels and CLI-RSSI measurement resource | 17-1 | Yes | N/A |  | Per UE | No (TDD only) | Yes | N/A | UE shall prioritize CLI-RSSI measurement when simultaneous reception of DL signals/channels and CLI-RSSI measurement resource is not supported.  How to capture this sentence is up to RAN2 | Optional with capability signalling |
| 17. NR\_CLI\_RIM | 17-4 | Simultaneous reception of DL signals/channels and SRS-RSRP measurement resource | Support simultaneous reception of DL signals/channels and SRS-RSRP measurement resource | 17-2 | Yes | N/A |  | Per UE | No (TDD only) | Yes | N/A | UE shall prioritize SRS-RSRP measurement when simultaneous reception of DL signals/channels and SRS-RSRP measurement resource is not supported.  How to capture this sentence is up to RAN2 | Optional with capability signalling |