**3GPP TSG RAN WG2#118-e R2-2206439**

**e-Meeting, 9th - 20th May, 2022**

**3GPP TSG-RAN WG4 Meeting #103-e R4-2210435**

**Electronic Meeting, May 09 – May 20, 2022**

**Title:** LS on UE capability and network assistant signalling for CRS interference mitigation in the scenario with overlapping spectrum for LTE and NR with 30kHz SCS

**Release:** Rel-17

**Work Item:** NR\_demod\_enh2-Perf

**Source:** RAN WG4

**To:** RAN WG2

**Cc:**

**Contact Person:**

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**Attachments:**

**1. Overall Description:**

In the past RAN4#102-e meeting, RAN4 has agreed the UE capability and network assistant signalling for CRS interference mitigation (CRS-IM) in the Scenario1 and Scenario 2 with serving cell 15kHz SCS, and the corresponding LS R4-2207238 was sent to RAN2.

In this RAN4#103-e meeting, the UE capability and network assistant signalling for CRS interference mitigation (CRS-IM) in Scenario 2 with serving cell 30kHz SCS has been discussed and agreed to be introduced. Following agreements are reached by RAN4:

* From the RAN4 perspective, the following new NR UE capabilities are agreed to be defined for CRS-IM:
* Capability #4: NR UE capable of performing CRS-IM in scenario 2 with 30kHz SCS without Rel-17 new network assistant signalling on LTE channel bandwidth.
* Capability #5: NR UE capable of performing CRS-IM in scenario 2 with 30kHz SCS with Rel-17 new network assistant signalling on LTE channel bandwidth.
* The granularity of the above capabilities is Per Feature Set per CC.
* The above capabilities are applicable for FR1 only without FDD/TDD difference.
* The above capabilities are optional for UE to report.
* With the default network configuration assumptions in LS R4-2207238 which was approved in RAN4#102-e meeting, RAN4 has agreed that for UE supporting Capability #4, the UE can perform CRS-IM without Rel-17 new RRC network assistant signalling in scenario 2 with 30 kHz SCS when *MeasObjectEUTRA IE* is configured and the configured measurement gaps overlap with neighbour LTE cell PBCH position.
* Meanwhile, new RRC based network assistant signalling is agreed to be introduced to assist CRS-IM in Rel-17 for Scenario 2 with serving cell 30kHz SCS, and the Rel-17 new RRC signalling are optionally to be indicated to UE supporting Capability #4.
* Regarding the content of the Rel-17 new RRC network assistant signalling, for each neighbour LTE cell, RAN4 reach following agreements for Scenario 2 with serving cell 30kHz SCS:
* Channel bandwidth
  + For scenario 2 with 30kHz SCS, the LTE channel bandwidth can be optionally signalled to UE supporting Capability #4, and should be signalled to UE supporting Capability #5 but not supporting Capability #4.
* For the other contents including downlink centre frequency, CRS port number, Cell ID, v-shift, CRS-muting, and MBSFN configuration. RAN4 agreed to reuse the same agreements for Scenario 2 with serving cell 15kHz SCS captured in last meeting LS R4-2207238.
* The above information is signalled under each serving cell with flexibility to support per UE level configuration with up to 8 interference cell information.

**2. To RAN WG2 group.**

**ACTION:** RAN4 respectfully request RAN2 to take the above information into account and design the corresponding UE capability and network assistance signalling for CRS-IM in scenario with overlapping spectrum for LTE and NR with 30kHz SCS.

**3. Date of Next TSG-RAN WG4 Meetings:**

TSG-RAN WG4 Meeting #104-e 15 Aug - 26 Aug 2022 Online

TSG-RAN WG4 Meeting #104-bis-e 10 Oct - 19 Oct 2022 Online