**3GPP TSG RAN WG1#105e R1-21nnnnn**

**e-Meeting, May 10th – 27th, 2021**

**Agenda Item: 7.2.2**

**Source: Moderator (Lenovo)**

**Title: Draft Feature lead summary on measurement during SCell activation**

**Document for: Discussion, Decision**

This document summarises the discussion on the following topics:

[105-e-NR-NRU-01] Email discussion/approval on measurement during SCell activation (DL-B2) until May 21 – Alex (Lenovo)

Corresponding discussion has taken place already in RAN1#104 and RAN1#104-e, with limited progress. Remaining open issues are relate to questions (2)(3)(4) by RAN4.

# Discussion for cases identified by RAN4

FL NOTE: A summary of the discussion in RAN1#104-e is available in R1-2103932. This discussion should target finding a consensus view on the open issues/questions, possibly touching upon behaviour as specified since Rel-15; this discussion may facilitate efficient future discussion in the scope of Rel-15, if necessary. Companies are invited to consider if other working groups can contribute to the resolution of the issues at hand.

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| In RAN1#104-e and RAN1#104bis-e, the LS from RAN4 was discussed. There was consensus on Question 1 and a reply LS [6] was sent to RAN4 clarifying the understanding from RAN1.For the other 3 questions: **Question by RAN4** (1) When none of the RRC parameters *CO-DurationPerCell-r16*, *SlotFormatIndicator*, and *CSI-RS-ValidationWith-DCI-r16* is configured for a UE on the being-activated SCell,1. What is the expected UE behaviour for this P/SP CSI-RS measurement and report on the being-activated SCell?

**Reply by RAN1:** As in Rel-15, the UE is expected to receive the P/SP CSI-RS.**Question 2:** When RRC parameters *CSI-RS-ValidationWith-DCI-r16* is configured, but *SlotFormatIndicator* and *CO-DurationPerCell-r16* are not configured for the being-activated SCell, what is the expected UE behavior for this P/SP CSI-RS measurement and report on the being-activated SCell? Does UE need to decode a DCI format from other active serving cell (indicating an aperiodic CSI-RS reception or scheduling a PDSCH reception in the set of symbols of the slot) for this being-activated SCell to validate this P/SP CSI-RS?**Question 3:** When RRC parameters *CO-DurationPerCell-r16* is configured but *SlotFormatIndicator* is not configured for the being-activated SCell, what is the expected UE behavior for this P/SP CSI-RS measurement and report on the being-activated SCell? Does UE need to decode a DCI format 2\_0 (indicating remaining channel occupancy duration) from other active serving cell for this being-activated SCell to validate the CSI-RS?**Question 4:** When RRC parameters *CO-DurationPerCell-r16* is not configured but *SlotFormatIndicator* is configured for the being-activated SCell, what is the expected UE behavior for this P/SP CSI-RS measurement and report on the being-activated SCell? Does UE need to detect a DCI format 2\_0 (indicating the starting point of CO duration and the slot format) from other active serving cell for this being-activated SCell to validate the CSI-RS? |

# Discussion

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| R1-2104272 (Huawei):***Observation 1: The behavior whether UE is able to acquire CSI request in DCI format 0-1, SFI or COT duration in DCI format 2-0 transmitted on the activated cell for the being activated cell should be clarified either in RAN1 or RAN2 before further discussing P/SP CSI-RS validation.***R1-2104831 (ZTE):**Observation 1: For being-activated SCell, UE maintains the same PDCCH monitoring behavior as defined for the deactivated SCell in TS 38.321, i.e. “not monitor the PDCCH on/for the SCell”.****Proposal 1: Alt 1 is a more appropriate understanding on “2> not monitor the PDCCH for the SCell;” for deactivated and being-activated SCell.*** **Alt 1: UE can monitor the PDCCHs sent by other active cells. And for Alt 1, there may be two kinds of understanding as follows:**
* **Understanding #1: UE expects that all detected PDCCHs sent by other active cells do not contain information for being-activated SCell.**
* **Understanding #12: UE ignores information for being-activated SCell if the detected PDCCHs sent by other active cells contain information for being-activated SCell, such as ap-CSI-RS or SFI.**

**Proposal 2: RAN1 can send a LS to RAN2 for confirming whether RAN1 has a correct understanding and whether RAN2 has other understandings on “2> not monitor the PDCCH for the SCell;”.****Proposal 3: On whether section 11 in TS 38.213 is also applicable to a being-activated SCell, the following two options can be considered. Among them, Opt 2 is preferred as UE will not monitor any PDCCH for the SCell or use any information indicated in PDCCHs for the SCell during SCell activation.*** **Opt 1: Section 11 in TS 38.213 is applied for a active cell and a being activated SCell**
* **Opt 2: Section 11 in TS 38.213 is only applied for a active cell**

**Proposal 4: If RAN1 can reach a consensus on Alt 1 and Opt 2, the same answer can be adopted for answering Q1~Q4 from RAN4, that is, UE proceeds with the p/sp-CSI-RS measurement in the set of symbols of the slot during SCell activation as in Rel-15.**R1-2105416 (LG):**Proposal #1: For a UE on a being-activated SCell, before the SCell is activated,*** **The UE does not monitor any DCI on the SCell.**
* **The UE does not monitor a DCI on other activated cell (e.g., PCell) that can schedule PDSCH on the being-activated SCell.**
* **The UE is not required to use information of the being-activated SCell in DCI format 2\_0 that is transmitted on other activated cell.**
* **The UE is not required to use information of the being-activated SCell in UL grant that is transmitted on other activated cell and that can trigger aperiodic CSI-RS on the being-activated SCell.**

**Proposal #2: When RRC parameter *csi-RS-ValidationWithDCI-r16* is configured, but *CO-DurationsPerCell* and *SlotFormatCombinationsPerCell* are not configured for a UE on a being-activated SCell, before the SCell is activated, UE is not required to receive P/SP-CSI-RS for the being-activated SCell.****Proposal #3: When one of *CO-DurationsPerCell* and *SlotFormatCombinationsPerCell* is configured for a UE on a being-activated SCell, before the SCell is activated, UE is not required to receive P/SP-CSI-RS for the being-activated SCell.**From the preparation phase discussion (comment by Ericsson):This issue has been extensively discussed in the last 2 meetings. Consensus has not been achieved due to differing views on some fundamental aspects of UE behavior that touch on Rel-15 carrier aggregation implementations. It is very hard to make progress in NR-U until these are resolved. As we indicated in the last meeting, the fundamental UE behavior aspects need to be discussed in Rel-15 maintenance first. Once discussion has occured there, then further progress can be made in NR-U. Unless/until that discussion happens in Rel-15 maintenance, we will object to sending an LS reply back to RAN4 as we did in the last meeting. |

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| Company  | Comments |
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