**3GPP TSG-RAN WG4 Meeting # 107 R4-230xxxx**

**Incheon, KR, May 22nd – May 26th , 2023**

**Agenda item:** 5.2.5.2, 5.2.5.3

**Source:** Moderator (Ericsson)

**Title:** Adhoc minutes for [107][205] NR\_redcap

**Document for:** Information

# Topic #1: Core part

*Main technical topic overview. The structure can be done based on sub-agenda basis.*

## Open issues summary

### Sub-topic 1-1

**Issue 1-1-1: Handover to a BWP with unmeasured SSB of a known cell**

* Proposals
  + Option 1 (ZTE, vivo, Nokia, Qualcomm): UE may assume that the TX power of the SSB of the target cell’s active BW is same as that of the measured SSBs that belong to the same PCI
* Recommended WF
  + Moderator: *Discussed during the core-part and no agreements were reached .*
  + TBD

**Issue 1-1-2: Revision of the intra/inter-frequency definition in handover**

* Proposals

Handover for a RedCap UE is defined as intra-frequency handover if the center frequency and subcarrier spacing (SCS) of the reference SSB of the serving cell is same as the center frequency and SCS of the reference SSB of the target cell, where:

* + - The reference SSB of the target cell is the SSB configured in the *firstActiveBWP* of the target cell
  + Option 1 (ZTE, vivo, Nokia):
    - The reference SSB of the serving cell is the SSB configured in the *BWP-specific* *servingCellMO*, if configured, else the SSB configured in the *servingCellMO*
  + Option 2 (QC, Ericsson): The reference SSB of the serving cell is the SSB configured in the DL BWP of the serving cell
* Recommended WF
  + Moderator: *Offline discussions show option 2 is agreeable to most companies. Can we go with option 2?*
  + CRs are already submitted to capture the revised definition. Review the CR and provide comments directly to the CR if any.
  + TBD

**Issue 1-1-3: Intra-frequency cell measurement**

* Proposals
  + Option 1 (ZTE): UE is not required to perform intra-frequency cell detection if the intra-frequency cell is already detected, where an intra-frequency cell is regarded as already detected if it has been meeting the following conditions:

-The MO with the same SSB frequency has already be configured, and

-During 5s before BWP switching,

* the UE has sent a valid measurement report for the MO with the same frequency, and
* the SSB measured remains detectable according to the cee identification conditions specified in clause 9.2 and 9.3

* Recommended WF
  + TBD

**Issue 1-1-4: Intra-frequency cell definition for RRC re-establishment**

* Proposals
  + Option 1 (QC): A neighbor cell for RRC re-establishment procedures for a RedCap UE is defined as an intra-frequency cell if the center frequency (and subcarrier spacing (SCS)) of the reference SSB of the serving cell is same as the center frequency (and SCS) of the reference SSB of the neighbor cell; else it is considered as inter-frequency cell, where:
* The reference SSB of the target cell is the CD-SSB of the target cell
* The reference SSB of the serving cell is
  + Option 1: SSB configured in the *BWP-specific* *servingCellMO*, if configured, else the SSB configured in the *servingCellMO*
  + Option 2: CD-SSB of the serving cell
  + Option 3: SSB within the active BWP

This option is preferred as it’s consistent with the intra/inter-frequency HO definition

* Recommended WF
  + Check whether the same agreement from intra-frequency cell definition of HO can be applied for the RRC re-establishment.

# Topic #2: Performance part

## Open issues summary

### Sub-topic 2-1

**Issue 2-1-1: Offset for cell selection and not-at-cell-edge criteria thresholds**

Background: Not-at-cell-edge thresholds *are s-SearchThresholdP-r16, s-SearchThresholdQ-r16, s-SearchThresholdP2-r17* and s-*SearchThresholdQ2-r17*.

* Proposals
  + Option 1(E///, ZTE):
    - Remove the offset from all not-at-cell-edge thresholds (i.e. s-SearchThresholdP-r16, s-SearchThresholdQ-r16, s-SearchThresholdP2-r17 and s-SearchThresholdQ2-r17).
    - Keep the existing offset (-1 dB) to Qrxlevmin and Qqualmin
  + Option 2(Nokia):
    - Keep the existing offset (+1 dB) to all not-at-cell-edge thresholds (i.e. s-SearchThresholdP-r16, , s-SearchThresholdP2-r17).
    - Remove the offsets from s-SearchThresholdQ-r16 and s-SearchThresholdQ2-r17.
* Recommended WF
  + Discuss the options.

**Issue 2-1-2: Offset for missing thresholds: rsrp-ThresholdMsg3**

* Proposals
  + Option 1(ZTE, Ericsson, Nokia): Add +1 dB of offset to *rsrp-ThresholdMsg3*.
* Recommended WF
  + Discuss if option 1 can be agreed based on RAN2 recommendation.

**Issue 2-1-3: Offset for missing thresholds: rsrp-ThresholdSSB-SUL**

* Proposals
  + Option 1(Ericsson): Add +1 dB of offset to *rsrp-ThresholdSSB-SUL*.
  + Option 2 (Nokia): not to consider an offset for *rsrp-ThresholdSSB-SUL* as this threshold is not applicable to RedCap UE’s.
    - Option 2a (Nokia): RAN4 to inform RAN2 that RAN4 will not to consider an offset for *rsrp-ThresholdSSB-SUL* as this threshold is not applicable to RedCap UE’s
* Recommended WF
  + Discuss if option 1 can be agreed based on RAN2 recommendation.

# Topic #3: CRs

**AI 5.2.5.2**

*Highlighted CRs below have been flagged.*

R4-2308446 CR on NR RedCap Idle mode (TS36.133) Ericsson

R4-2308448 CR on NR RedCap L1-RSRP measurement Ericsson

R4-2308450 CR on NR RedCap HO Ericsson, Mediatek Inc.

R4-2309574 Formal CR to Rel-17 TS 38.133: on RedCap maintenance in TS 38.133 MediaTek inc.

R4-2309576 Formal CR to Rel-17 TS 36.133: on RedCap maintenance in TS 36.133 MediaTek inc.

R4-2309604 Corrections to RedCap Measurement Requirements Nokia, Nokia Shanghai Bel

**AI 5.2.5.3**

*Highlighted CRs below have been flagged.*

R4-2307440 Correction to performance part requirements for RedCap Ericsson

R4-2308294 Correction to FR1 RedCap test cases RMCs and side conditions Huawei, HiSilicon, Starpoint

R4-2308296 Correction to FR2 RedCap test cases\_R17 Huawei, HiSilicon, Starpoint

R4-2308422 CR: Correction of Measurement conditions for RedCap for 1Rx Ericsson, Anritsu

R4-2309578 Formal CR to Rel-17 TS 38.133: on RedCap Perf maintenance in TS 38.133 MediaTek inc.

R4-2309651 Correction to offset for cell specific RSRP thresholds for 1Rx Redcap UE in 38.133 Ericsson

R4-2309671 Corrections of SDT Test Case Parameters for RedCap Nokia, Nokia Shanghai Bel