3GPP TSG-RAN WG4 Meeting #116-bis R4-2514821

**Prague, Czech Republic, Oct. 13-17, 2025**

**Agenda item:** 7.4.1

**Source:** Ericsson

**Title:** WF on NR\_RRM\_Ph6

**Document for:** Approval

# Topic #1: (e)RedCap UE enhancement requirements (AI 7.4.3.2)

**Issue 2-1-1: Scope for LT5 (e)RedCap UE**

Agreement:

* For (e)RedCap UE supporting LT5:
  + CSI-RS based measurement is out of scope.
  + RAN4 only defines the requirements for PCell.
  + RAN4 only defines the requirements for NR FR1.
  + Introduce support for only 15 PRB transmission bandwidth configuration and 12 PRB SSB

**Issue 2-1-2: LT5 for 2Rx (e)RedCap UE**

Agreement:

* The existing LT5 requirements for non-RedCap UE can be directly reused for 2Rx (e)RedCap UE with full-duplex FDD, TDD modes.
  + Handover
  + RLM/BFD
  + Intra-frequency/Inter-frequency measurement
* Further check for HD-FDD

**Issue 2-2-1: Scope of relaxed RLM/BFD for (e)RedCap UE**

Agreement:

RAN4 only considers the relaxed RLM/BFD requirements on PCell when the DRX cycle is no longer than 80 ms.

**Issue 2-2-2: Relaxed RLM/BFD for 2Rx (e)RedCap UE**

Agreement:

* Reuse the existing **R17** RLM/BFD relaxation requirements for both FR1 and FR2, and for full-duplex FDD and TDD.

**Sub-topic 2-3: Simulation assumption for LT5 1Rx (e)RedCap**

Agreement:

**Simulation Assumptions for SSB index reading and MIB reading Evaluation**

|  |  |  |
| --- | --- | --- |
| Parameter | Unit | Value |
| * Number of PRBs for PBCH |  | 12 PRBs |
| * Carrier frequency | * GHz | * 900MHz |
| * Subcarrier spacing | * kHz | * 15 kHz |
| * Number of Tx antennas | * - | * 1 * 2 |
| * Number of Rx antennas | * - | * 1 |
| * DMRS | * - | * PBCH DMRS |
| * Other assumptions |  | * Tx BW and SSB puncturing are known at the Rx side |
| * CP Length | * - | * Normal |
| * Number of transmitted SS block within a SS burst set period (K) | * - | * 1 |
| * SS burst set periodicity | * ms | * 20 |
| * Frequency Offset relative to UE frequency reference | * Hz | * 0 |
| * PBCH symbols within the SS block |  | * PSS-PBCH-SSS-PBCH |
| * Data and Control Power offset with respect to PSS and SSS | * dB | * Baseline 0 |
| * PBCH power offset with respect to PBCH-DMRS | * dB | * 0 |
| * PBCH-DMRS power offset with respect to PSS and SSS | * dB | * 0 |
| * PSS and SSS sequences | * - | * No changes expected |
| * PBCH-DMRS sequences | * - | * No changes expected |
| * PBCH-DMRS RE positions within the PBCH resource | * - | * No changes expected except for puncturing impact |
| * PBCH Channel coding |  | * No changes expected to actual Channel coding * (Polar code with 512 length and 24bit CRC) |
| * PBCH Modulation | * - | * QPSK |
| * PBCH Payload (including the CRC) | * bits | * 56bit (CRC 24bit) |
| * PBCH SNR | * dB | * -10 : 0 dB, with 1 dB spacing |
| * Propagation Condition / Channel models | * - | * For 3 km/h UE speed * TDL-C 300ns * Additional scenarios can be considered |
| * Detection Method |  | * Baseline: One shot detection (i.e. no combination for different PBCHs) * FFS whether to remove Soft Combining or keep Soft Combining as Optional |
| * Metrics |  | * TBA |
| * NOTE: the companies are encouraged to state channel model parameters together with the results, the parameters are to be further discussed and aligned. | | |

**Issue 2-1-4: RLM/BFD impact of LT5 for 1Rx (e)RedCap UE**

Agreement:

For discussing the PDCCH hypothetical parameters, RAN4 discuss whether it is feasible to target on coverage equivalence between 1Rx and 2Rx RedCap UEs.

**Issue 2-2-4: Entry and exit criteria, singling indication, applicability rules for 2Rx**

Agreement:

Reuse R17 RLM/BFD Entry and exit criteria from legacy UE as a baseline