**3GPP TSG-RAN WG4 Meeting #116 R4-2512133**

**Bengaluru, India, 25 – 29 August, 2025**

**Agenda item:** 7.21.4

**Source:** Huawei, HiSilicon

**Title:** WF on RRM requirements for NR\_duplex\_evo

**Document for:** Approval

# Agreements

Topic #1: UE-to-UE CLI handling

### Sub-topic 1-1: General issues

#### Issue 1-1-1: Requirement applicability for basic UE operation

* Agreement
	+ For UE not supporting simultaneous DL reception in 2 DL subbands, if RAN1 agrees such basic UE operation exists in maintenance phase, RAN4 will further the corresponding requirements in maintenance phase.

#### Issue 1-1-2: L1 CLI measurement in non-SBFD symbols

* Agreement (Monday online session)
	+ Define requirements for L1 UE-to-UE CLI measurements based on valid symbol type.
* Agreement
	+ Re-use NR-U approach for defining measurement period extension due to invalid symbol type.
	+ Detailed requirements are discussed directly in draftCRs.

### Sub-topic 1-2: L1-SRS-RSRP

#### Issue 1-2-1: Collision between Method #1 and Method #2

* Agreement (Tuesday AH session)
	+ UE does not expect to be configured with L1-CLI-RSSI measurements resources within DL subband(s) and L1-SRS-RSRP measurement resources on the same symbol.
	+ Note: this can be revised if RAN1 have different agreement for this Collision between Method#1 and Method#2.

### Sub-topic 1-3: L1-CLI-RSSI

#### Issue 1-3-1: Measurement period

* Agreement (Tuesday AH session)
	+ Based on 1 sample if timeRestrictionForChannelMeasurement is configured;
	+ Based on 3 samples if timeRestrictionForChannelMeasurement is not configured.

#### Issue 1-3-2: Measurement restriction

* Agreement
	+ Measurement requirements do not apply for L1-CLI-RSSI when CLI resources and resources for L1/L3 RRM measurements overlap in time for FR1

Topic #2: SBFD operation impacts

### Sub-topic 2-1: RRM impacts of SBFD operation

#### Issue 2-1-1b: CSI-RS L1 measurement – puncturing in frequency domain

* Agreements (Monday online session)
	+ For UE supporting simultaneous DL reception in 2 DL subbands,
		- For measurement period:
			* For UE indicating CSI processing time scaled by 2,
				+ Add a lower bound of 8ms on top of existing measurement period, if the CSI-RS resource is across 2 DL subbands and UE indicates CSI processing time is scaled by 2.
			* For UE not indicating CSI processing time scaled by 2,
				+ Lower bound is not needed and existing measurement period applies
		- Further discuss the measurement accuracy requirements in Perf part of the WI
			* For UE indicating CSI processing time scaled by 2
				+ Option 1: existing accuracy requirements based on 48 RB for Case 3 apply.
				+ Option 2: accuracy requirements based on 24 RB for Case 3 apply.
			* For UE not indicating CSI processing time scaled by 2
				+ Option 1: accuracy requirements based on 24 RB for Case 3 apply.
	+ For UE not supporting simultaneous DL reception in 2 DL subbands, if RAN1 agrees such basic UE operation exists in maintenance phase, RAN4 will further the corresponding requirements in maintenance phase.

#### Issue 2-1-1d: Lmax in NR-U approach

* Agreements
	+ Option 1: define Lmax and related UE behaviour
		- For L1-RSRP and L1-SINR, UE shall/may restart the measurement when L exceeds Lmax.
		- For RLM and BFD, UE shall/may not send any in-sync or out-of-sync indication to higher layers when L exceeds Lmax.
		- For CBD, UE shall/may assume no new candidate beams are found for this evaluation period when L exceeds Lmax.
		- Lmax = 7 for Max(TDRX,TCSI-RS) ≤ 40ms, Lmax=5 for 40ms < Max(TDRX, TCSI-RS) ≤ 320ms, Lmax=3 for TDRX > 320ms
	+ Option 2: define absolute time as upper bound for measurement and related UE behaviour
		- For L1-RSRP and L1-SINR, UE shall/may restart the measurement when the measurement period exceeds 5s.
		- For RLM and BFD, UE shall/may not send any in-sync or out-of-sync indication to higher layers when the evaluation period exceeds 5s.
		- For CBD, UE shall/may assume no new candidate beams are found for this evaluation period when the evaluation period exceeds 5s.
	+ Option 3: define Lmax as applicability condition of the requirements
		- The requirements for L1-RSRP/L1-SINR/RLM/BFD/CBD apply provided that L does not exceed Lmax
		- Lmax = 7 for Max(TDRX,TCSI-RS) ≤ 40ms, Lmax=5 for 40ms < Max(TDRX, TCSI-RS) ≤ 320ms, Lmax=3 for TDRX > 320ms

#### Issue 2-1-2: Requirements for RACH

* Agreements
	+ Discuss whether and how to update RACH requirements based on RAN2 spec in maintenance phase.

#### Issue 2-1-3: SCell activation

* Agreements (Monday online session)
	+ The existing SCell activation delay requirement apply when activating a SBFD SCell. Further discuss whether any clarification is needed in the CR.
	+ Note: the agreement can be revised if not aligned with RAN1 existing and future agreements.

#### Issue 2-1-4: Condition for SSB based measurement with basic UE operation

* Agreements
	+ For UE not supporting simultaneous DL reception in 2 DL subbands, if RAN1 agrees such basic UE operation exists in maintenance phase, RAN4 will further the corresponding requirements in maintenance phase.

Potential issues for further discussion

# Topic #3: Performance part

### Sub-topic 3-1: Accuracy requirements

#### Issue 3-1-1: L1-SRS-RSRP – side condition on time offset

#### Issue 3-1-2: L1-SRS-RSRP – side condition on SRS BW

#### Issue 3-1-3: L1-SRS-RSRP – side condition on SRS Es/Iot

#### Issue 3-1-4: L1-SRS-RSRP – accuracy requirements

#### Issue 3-1-5: L1-CLI-RSSI – accuracy requirements

#### Issue 3-1-6: L1-RSRP and L1-SINR – accuracy requirements

### Sub-topic 3-2: Report mapping

#### Issue 3-2-1: Absolute report mapping

#### Issue 3-2-2: Differential report mapping

### Sub-topic 3-3: Test cases

#### Issue 3-3-1: General test setup

#### Issue 3-3-2: Test case list

#### Issue 3-3-3: Test case details and test purpose

#### Issue 3-3-4: Test case scenarios

#### Issue 3-3-5: Test applicablity