3GPP TSG-RAN WG4 Meeting #112 R4-2414320

Maastricht, Netherlands, August 19th – 23rd, 2024

**Agenda item:** 8.4.4

**Source:** Intel Corporation

**Title:** WF on UE RF requirements for Rel-19 NR channel BW less than 5MHz for FR1 Phase 2

**Document for:** Approval

# Topic #2: UE RF requirements for inter-band NR CA/DC with less than 5MHz CBW

### Issue 2-1: Support of 5MHz CBW in band n100

* Agreement (online session)
	+ 5MHz channel bandwidth in band n100 included in CRs but with square brackets, and brackets can be removed after the update is approved in the revised WID

### Issue 2-2: UE capability signaling

* WF for discussion
	+ Option 1: Request RAN2 to introduce UE capability signaling to enable less than 5MHz CBW operation for CA/DC
		- The following Rel-18 capabilities for NR less than 5MHz CBW operation need to be extended to enable CA/DC operation scenario with one or more component carriers with less than 5MHz CBW
			* support12PRB-CORESET0-r18
			* support3MHz-ChannelBW-Asymmetric-r18
			* support3MHz-ChannelBW-Symmetric-r18
			* support5MHz-ChannelBW-20PRB-CORESET0-r18
			* support12PRB-CORESET0-GSCN-41637-r18
		- UE capability signalling granularity
			* Option 1A: reuse the respective UE capability signalling granularity from Rel-18 capabilities
		- The respective capabilities shall be early-implementable from Rel-18
		- The details including whether to update existing Rel-18 capabilities or introduce new Rel-19 capabilities are up to RAN2

### Issue 2-3: Network signaling on Scell transmission bandiwdth

* Agreement (online session)
	+ No new signalling from network to inform UE the number of PRB transmission is required in the RF scope of this item

### Issue 2-4: Sync raster applicability

* WF for discussion
	+ Option 1: Require less than 5 MHz PCell/SCell to be associated with the sync raster points for less than 5MHz
		- TS 38.101-1 update

5.4A.3  Synchronization raster for CA

For inter-band and intra-band contiguous carrier aggregation, the synchronization raster requirements in clause 5.4.3 apply for each operating band. SSB associated with less than 5 MHz Scell is restricted to the same frequency positions as Pcell according to Table 5.4.3.1-2 and Table 5.4.3.1-3.

* + Option 2: For CA case there is no need to add more requirements to associate Scell with the sync raster points for less than 5MHz
		- UE is aware of the SCell carrierBandwidth and frequency position (ARFCN values) via SCell configuration. The SSB bandwidth (12 PRB or 15 PRB) and transmission bandwidth can be derived based on the associated values.