3GPP TSG-RAN WG1 Meeting #113 R1-23xxxxx

Incheon, Korea, May 22 – 26, 2023

Agenda Item: 9.17

Source: Ericsson

Title: Editor’s summary on draft CR 38.211 for NR\_LessThan\_5MHz\_FR1-Core

Document for: Discussion, Decision

# 1 Introduction

This document is intended to facilitate the review process of the draft CR 38.211 for NR\_LessThan\_5MHz\_FR1-Core.

# 2 Discussion – first round

Please provide your comments on **the latest version of the draft CR on 38.211** available in this folder.

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| **Company** | **Comment** |
| **Qualcomm** | 1) Based on the RAN1 agreement ‘In Case of 15 PRBs, the 𝑁RB CORESET = 24 CORESET#0 is punctured’, we slightly prefer ‘puncturing’ than ‘removing’. Also some minor typos are fixed as below:**“**if the CORESET is obtained by applying the description above with interleaved or non-interleaved mapping as defined in clause 13 of [5, TS 38.213], followed by puncturing the 9 resource blocks in each OFDM symbol to obtain the 15 resource blocks forming the CORESET 0.**”**For clarification, we think which ‘9 resource blocks in each OFDM symbol’ are punctured will be further discussed in RAN1, although there is no editor note.2) Since this is already there applied to all CORESET 0, we suggest adding ‘Table 13-0’ for the new CORESET 0 with as below:‘For CORESET 0 configured by the *ControlResourceSetZero* IE:- and are defined by clause 13 of [5, TS 38.213];…For CORESET 0 on a carrier with :- and are defined by Table 13-0 in clause 13 of [5, TS 38.213]’ |
| Huawei, HiSilicon | **//Comment#1**To identify the carrier requiring a new CORESET#0 for 3MHz channel bandwidth, carrier bandwidth is not a feasible condition because is indicated through SIB1 by IE *carrierBandwidth*, which is received after the determination of the CORESET#0. The new sync raster introduced in RAN4 for 3MHz CBW can be used as the condition according to the following RAN4 agreement and RAN plenary LS,* The new sync raster is designed not to overlap with the legacy sync raster by the frequency shift A kHz and the different frequency interval 600kHz. As a result, when the UE perform cell search with the new sync raster and identify a SS/PBCH, the UE has already known the carrier is with 3MHz channel bandwidth.

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| [**R4-2310408**](file:///D%3A%5CRAN4%23107%5CDocs%5CR4-2310408.zip) **WF on system parameters for less than 5MHz channel bandwidth** *Type: other For: Approval Source: Nokia***Decision: Approved.****…****Issue 1-1: The value of A in N \* 600kHz + M \* 50 kHz + A kHz, N ϵ {1:2499}, M ϵ {1,3,5}*** Proposals
	+ Option 1: 300
	+ Option 2: 345
* Agreement
	+ Agree on 300.

**…****Issue 1-3: Finer synchronization raster design for 3 MHz channel bandwidth*** Proposals
	+ Option 1: Use N \* 600 kHz + M \* 50 kHz + A kHz, N ϵ {1:4998}, M ϵ {1,3,5} for 12 PRBs PBCH transmission bandwidth, use N \* 100 kHz + B kHz, N ϵ {9206:1:9232} for 15 PRBs PBCH transmission bandwidth
	+ Option 2: Use N \* 600 kHz + M \* 50 kHz + A kHz
* Agreement
	+ Do not consider Option 1
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| **R1-2302276**:…RAN Plenary has discussed question 1 on legacy bands and UE operation, and concluded the following:* In some bands where the <5MHz feature is planned to be deployed there may be legacy NR UEs, whereas in others there are no legacy NR UEs.
* In order to limit the impact to any legacy UEs in the same frequency range, it would be helpful if the sync raster can be differentiated for the less-than-5MHz channels.
* It is assumed that UE support of the <5MHz feature is band-specific and optional.

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**Suggested changes:**For CORESET 0 on a carrier detected in cell search procedure with synchronization raster specific to 3MHz channel bandwidth [14, TS 38.101-1]:- and are defined by clause 13 of [5, TS 38.213]- if the CORESET is obtained by applying the description above assuming interleaved mapping- if the CORESET is obtained by applying the description above with interleaved or non-interleaved mapping as defined in clause 13 of [5, TS 38.213], followed by removing 9 resource blocks in each OFDM symbol to obtain the 15 resource blocks forming the CORESET.…For cell search with synchronization raster specific to 3MHz channel bandwidth [14, TS 38.101-1], the UE is not expected to receive subcarriers 0 to 47 and 192 to 239 in any of the 4 OFDM symbols of the SS/PBCH block.**//Comment#2**Similar to other company comment, “puncturing” is better than “removing” for 15-PRB CORESET#0. |
| ZTE | **Comment#1:** We suggest making it clear that CORESET 0 is configured by the *ControlResourceSetZero* IE as legacy. Regarding it can be changed to ‘minimum channel bandwidth 3 MHz’ similar as the texts in 38.213. ‘For CORESET 0 configured by the *ControlResourceSetZero* IE on a carrier with minimum channel bandwidth 3 MHz:**Comment#2:** In legacy, the interleaving of CORESET 0 is defined in TS 38.211. Similarly, we suggest capturing how to determine interleaved or non-interleaved mapping in TS 38.211. If it is to be captured in 38.213, at least the following revision should be considered for better clarity. - if the CORESET is obtained by applying the description above with interleaved or non-interleaved mapping according to index configured by the *ControlResourceSetZero* IE as defined in clause 13 of [5, TS 38.213], followed by removing 9 resource blocks in each OFDM symbol to obtain the 15 resrouce blocks forming the CORESET.’ |
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