**3GPP TSG RAN WG1 #106-e R1-210XXXX**

**e-Meeting, August 16th – 27th, 2021**

**Agenda Item:** 7.2.2

**Source:** Moderator (LG Electronics)

**Title:** Feature lead summary for NR-U wideband operations

**Document for:** Discussion and decision

# Introduction

This is the summary document for NR-U maintenance on wide-band operation, based on the contributions listed in reference section. Only one issue is identified and described in Section 2.

# Issue: CORESET configuration for wideband operation

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| **TDoc** | **CR summary** | **FL recommendation** |
| [R1-2107049](https://www.3gpp.org/ftp/TSG_RAN/WG1_RL1/TSGR1_106-e/Docs/R1-2107049.zip) [1][R1-2107712](https://www.3gpp.org/ftp/TSG_RAN/WG1_RL1/TSGR1_106-e/Docs/R1-2107712.zip) [2] | **RAN1 and RAN2 spec alignment when applying the default value ‘*rb-Offset* = 0’****Proposal [1]:** RAN1 to down-select to one of the following alternatives:* Alt-A (RAN1 Fix): Agree on draft CR to 38.213 Section 10.1 shown in Appendix B
* Alt-B (RAN2 Fix): No change to 38.213. Request RAN2 to make the above change to the field description of the parameter *rb-Offset* in the ControlResourceSet IE.

**<Alt-A>**\*\*\* Unchanged text omitted \*\*\*For each CORESET in a DL BWP of a serving cell, a respective *frequencyDomainResources* provides a bitmap - if a CORESET is not associated with any search space set configured with *freqMonitorLocations*, the bits of the bitmap have a one-to-one mapping with non-overlapping groups of 6 consecutive PRBs, in ascending order of the PRB index in the DL BWP bandwidth of $N\_{RB}^{BWP}$ PRBs with starting common RB position $N\_{BWP}^{start}$, where the first common RB of the first group of 6 PRBs has common RB index $6⋅\left⌈N\_{BWP}^{start}/6\right⌉$ if *rb-Offset* is not signaled by higher layers; otherwise, the first common RB of the first group of 6 PRBs has common RB index $N\_{BWP}^{start}+N\_{RB}^{offset}$ where $N\_{RB}^{offset}$ is provided by *rb-Offset.* - if a CORESET is associated with at least one search space set configured with *freqMonitorLocations*, the first $N\_{RBG,set0}^{size}$ bits of the bitmap have a one-to-one mapping with non-overlapping groups of 6 consecutive PRBs, in ascending order of the PRB index in each RB set $k$ in the DL BWP bandwidth of $N\_{RB}^{BWP}$ PRBs with starting common RB position $RB\_{s0+k,DL}^{start,μ} $ [6, TS 38.214], where the first common RB of the first group of 6 PRBs has common RB index $RB\_{s0+k,DL}^{start,μ}+N\_{RB}^{offset}$ and *k* is indicated by *freqMonitorLocations* if provided for a search space set; otherwise, $k=0$. $N\_{RBG,set0}^{size}=\left⌊(N\_{RB,set0}^{size}-N\_{RB}^{offset})/6\right⌋$, $N\_{RB,set0}^{size}$ is a number of available PRBs in the RB set 0 for the DL BWP, and $N\_{RB}^{offset}$ is provided by *rb-Offset* or $N\_{RB}^{offset}=0$ if *rb-Offset* is not provided.If a UE is provided RB sets in the DL BWP, the UE expects that the RBs of the CORESET are within the union of the PRBs in the RB sets of the DL BWP.\*\*\* Unchanged text omitted \*\*\***<Alt B>**

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| ***rb-Offset***Indicates the RB level offset in units of RB from the first RB of the first 6RB group to the first RB of BWP (see 38.213 [13], clause 10.1). ~~When the field is absent, the UE applies the value 0.~~ |

**Proposal [2]:** RAN1 to select one of these two alternatives to address the CORESET resource determination problem:* Alt.1: To align with RAN1's agreement, request RAN2 to change the field description of ‘*rb-Offset*’ as follows by sending LS

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| *rb-Offset*Indicates the RB level offset in units of RB from the first RB of the first 6RB group to the first RB of BWP (see 38.213 [13], clause 10.1).  |

* Alt.2: Adopt the following TP#1 for clause 10.1 of TS 38.213

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| ------------------------------------------ Text Proposal TP#1 for 38.213, Section 10.1------------------------\*\*\* Unchanged text omitted \*\*\*For each CORESET in a DL BWP of a serving cell, a respective *frequencyDomainResources* provides a bitmap * if a CORESET is not associated with any search space set configured with *freqMonitorLocations*, the bits of the bitmap have a one-to-one mapping with non-overlapping groups of 6 consecutive PRBs, in ascending order of the PRB index in the DL BWP bandwidth of $N\_{RB}^{BWP}$ PRBs with starting common RB position $N\_{BWP}^{start}$, where the first common RB of the first group of 6 PRBs has common RB index $6⋅\left⌈N\_{BWP}^{start}/6\right⌉$ if *rb-Offset* is not signalled by higher layer otherwise, the first common RB of the first group of 6 PRBs has common RB index $N\_{BWP}^{start}+N\_{RB}^{offset}$ where $N\_{RB}^{offset}$ is provided by *rb-Offset.*

\*\*\* Unchanged text omitted \*\*\*----------------------------------------------------------- End Text Proposal ---------------------------------------------------- |

 | 1) Discuss in RAN1#106-e |

# Reference

1. R1-2107049 Correction related to wideband operation Ericsson
2. R1-2107712 Correction on Wideband Operation for NRU Apple