**3GPP TSG RAN WG1 Meeting #103-e R1-200xxxx**

**Oct 26th – Nov 13th, 2020**

**Agenda item: 7.2.2**

**Source: Moderator (Qualcomm Incorporated)**

**Title: NR-U email discussion thread 07**

**Document for: Discussion and Decision**

# Introduction

This paper summarized the following email discussion

[103-e-NR-NRU-07] Email discussion/approval on editorial changes for issues IA-C, DL-Z1, DL-Z2, DL-Z3, UL-02, and WB04 in R1-2008888 until 10/29 – Jing (Qualcomm)

# Issue IA-C (On PRACH signal generation)

In R1-2007978 (Ericsson) and R1-2008125 (Samsung), a bug in PRACH signal generation in 38.211 section 5.3.2 is identified. The TP from R1-2007978 is listed below, which covers the TP from R1-2008125.

--------------------------------------- Text Proposal 2-1 for 38.211, Section 5.3.2 ---------------------------------------

Reason for changes

Error in equation for PRACH signal generation for the case of PRACH sequence lengths 571/1151.

Summary of changes

* Addition of the variable (number of subcarriers per RB) to the equation for PRACH signal generation
* Clarification to resolve differences in notation between 38.211 and 38.214.

Specs/Sections impacted

38.211 Section 5.3.2

Consequences if not approved

PRACH signal generation will be incorrect if sequence length 571 or 1151 is configured.

--------------------------------------- Start of Text Proposal for 38.211, Section 5.3.2 ---------------------------------------

\*\*\* Unchanged text omitted \*\*\*

5.3.2 OFDM baseband signal generation for PRACH

The time-continuous signal  on antenna port for PRACH is defined by

where  and

-  is given by clause 6.3.3;

-  is the subcarrier spacing of the initial uplink bandwidth part during initial access. Otherwise,  is the subcarrier spacing of the active uplink bandwidth part;

- is the largest value among the subcarrier spacing configurations by the higher-layer parameter *scs-SpecificCarrierList*;

-  is the lowest numbered resource block of the initial uplink bandwidth part and is derived by the higher-layer parameter *initialUplinkBWP* during initial access. Otherwise,  is the lowest numbered resource block of the active uplink bandwidth part and is derived by the higher-layer parameter *BWP-Uplink*;

- is the frequency offset of the lowest PRACH transmission occasion in frequency domain with respect to physical resource block 0 of the active uplink bandwidth part. The quantity is given by the higher-layer parameter *msgA-RO-FrequencyStart* if configured and a type-2 random-access procedure is initiated as described in clause 8.1 of [5, TS 38.213], otherwise by *msg1-FrequencyStart* as described in clause 8.1 of [5 TS 38.213];

-  is the PRACH transmission occasion index in frequency domain for a given PRACH transmission occasion in one time instance as given by clause 6.3.3.2;

-  is the number of resource blocks occupied and is given by the parameter allocation expressed in number of RBs for PUSCH in Table 6.3.3.2-1.

- is the start CRB index of uplink RB set corresponding to the quantity in [6, TS 38.214]

- is the index of the RB set which contains the lowest PRACH transmission occasion in frequency domain indicated by . The UE may assume that is configured such that each PRACH transmission occasion is fully contained within an RB set.

-  and  are given by clause 6.3.3

\*\*\* Unchanged text omitted \*\*\*

-------------------------------------------------------- End Text Proposal -----------------------------------------------------------

Please provide your view below:

|  |  |
| --- | --- |
| Company | View |
| OPPO | Fine with the TP |
| Nokia, NSB | support |
| LG Electronics | Fine with the TP |
| Qualcomm | Support the TP |
| Ericsson | Support the TP |

# Issue DL-Z1 (On CSI-RS measurements and averaging)

R1-2008041, P2 [LG]:

TP 3-2 for TS 38.214 section 5.2.1.4.2.

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| --- |
| For operation with shared spectrum channel access, if the UE is configured with a *CSI-ReportConfig* with higher layer parameter *reportQuantity* set to 'cri-RI-PMI-CQI ', 'cri-RI-i1', 'cri-RI-i1-CQI', 'cri-RI-CQI' or 'cri-RI-LI-PMI-CQI', the UE shall derive:  - the CSI parameters without averaging instances of any *nzp-CSI-RSResource* in the corresponding *nzp-CSI-RS-ResourceSet* for channel measurement or interference measurement located in different DL transmissions, where  - the *nzp-CSI-RSResource* is not in the same channel occupancy durations indicated by DCI format 2\_0 if the UE is provided at least one of *SlotFormatIndicator* or *CO-DurationList-r16*; or  - the set of symbols for PDSCH(s) and/or aperiodic CSI-RS(s) indicated by DCI formats, including indicating PDCCH(s), overlapped with *nzp-CSI-RSResource* is not continuous if the UE is provided *CSI-RS-ValidationWith-DCI-r16*, is not provided *CO-DurationPerCell-r16*, and is not provided *SlotFormatIndicator*  - the interference measurements for computing CSI value based on periodic/semi-persistent CSI-IM measured only in OFDM symbol(s) that fulfill the same conditions under which the UE is expected to receive periodic/semi-persistent CSI-RS as described in Clause 11.1 and Clause 11.1.1 of [6, TS 38.213]. |

R1-2008204, P3 [Nokia]:

TP 3-3 for 38.214 sub-clause 5.2.1.4.2

|  |
| --- |
| For operation with shared spectrum channel access, if the UE is configured with a *CSI-ReportConfig* with higher layer parameter *reportQuantity* set to 'cri-RI-PMI-CQI ', 'cri-RI-i1', 'cri-RI-i1-CQI', 'cri-RI-CQI' or 'cri-RI-LI-PMI-CQI', the UE shall derive:  - the CSI parameters without averaging instances of any *nzp-CSI-RSResource* in the corresponding *nzp-CSI-RS-ResourceSet* for channel measurement that do not occur ~~located in different DL transmission bursts (defined in [16, TS 37.213])~~.  - within remaining channel occupancy, or  - in a time duration for which all OFDM symbols are occupied by a set of PDSCH and/or CSI-RS(s) that are scheduled/triggered to the UE including the associated PDCCH(s).  - the interference measurements for computing CSI value based on periodic/semi-persistent CSI-IM measured only in OFDM symbol(s) that fulfill the same conditions under which the UE is expected to receive periodic/semi-persistent CSI-RS as described in Clause 11.1 and Clause 11.1.1 of [6, TS 38.213]. |

R1-2008664, P1 [vivo]:

TP 3-4 for section 5.2.1.4.2 of TS 38.214.

|  |
| --- |
| ----------------------------------------TP1: Start TP for Section 5.2.1.4.2 of TS 38.214 -------------------------------------  For operation with shared spectrum channel access, if the UE is configured with a *CSI-ReportConfig* with higher layer parameter *reportQuantity* set to 'cri-RI-PMI-CQI ', 'cri-RI-i1', 'cri-RI-i1-CQI', 'cri-RI-CQI' or 'cri-RI-LI-PMI-CQI', the UE shall derive:  - the CSI parameters without averaging instances of any periodic/semi-persistent *nzp-CSI-RSResource* in the corresponding *nzp-CSI-RS-ResourceSet* for channel measurement located in different DL transmissions ~~bursts (defined in [16, TS 37.213]).~~, where  - the *nzp-CSI-RS Resource* is not in the same channel occupancy durations indicated by DCI format 2\_0 if the UE is provided at least one of *SlotFormatCombinationsPerCell* or *CO-DurationList-r16*; or  - the set of symbols for PDSCH(s) and/or aperiodic CSI-RS(s) indicated by DCI formats overlapped with *nzp-CSI-RSResource* is not continuous if the UE is provided *CSI-RS-ValidationWith-DCI-r16*, is not provided *CO-DurationPerCell-r16*, and is not provided *SlotFormatCombinationsPerCell*.  - the interference measurements for computing CSI value  - based on periodic/semi-persistent CSI-IM measured only in OFDM symbol(s) that fulfill the same conditions under which the UE is expected to receive periodic/semi-persistent CSI-RS as described in Clause 11.1 and Clause 11.1.1 of [6, TS 38.213]; and  - without averaging instances of any periodic/semi-persistent *CSI-IM-Resource* in the corresponding *CSI-IM-ResourceSet* for interference measurement located in different DL transmissions, where  - the *CSI-IM-Resource* is not in the same channel occupancy durations indicated by DCI format 2\_0 if the UE is provided at least one of *SlotFormatCombinationsPerCell* or *CO-DurationList-r16*; or  - the set of symbols for PDSCH(s) and/or aperiodic CSI-RS(s) indicated by DCI formats overlapped with *CSI-IM-Resource* is not continuous if the UE is provided *CSI-RS-ValidationWith-DCI-r16*, is not provided *CO-DurationPerCell-r16*, and is not provided *SlotFormatCombinationsPerCell*.  ----------------------------------------TP1: End TP for Section 5.2.1.4.2 of TS 38.214 -------------------------------------- |

Please provide your view below for the above TPs:

|  |  |
| --- | --- |
| Company | View |
| Nokia, NSB | From these three TPs on the subject, we prefer the one which is technically correct (in terms of the RAN1#102 agreement) and the most compact |
| LG Electronics | Prefer the first TP as the proposing proponent. However, vivo’s one does not seem to correctly reflect previous agreement since the second bullet is for CSI-IM based interference measurement and is out of scope of the corresponding previous agreement. |
| Qualcomm | Prefer TP 3-2, which is more complete and concise |
| Ericsson | Prefer TP 3-2; however, I had trouble parsing it, particularly the 2nd sub-bullet. I have proposed an amendment below (TP 3-2a) that is hopefully easier to read. Also, it captures that this applies to periodic and semi-persistent CSI-RS corresponding to the agreements from last meeting. |

TP 3-2a for TS 38.214 section 5.2.1.4.2.

For operation with shared spectrum channel access, if the UE is configured with a *CSI-ReportConfig* with higher layer parameter *reportQuantity* set to 'cri-RI-PMI-CQI ', 'cri-RI-i1', 'cri-RI-i1-CQI', 'cri-RI-CQI' or 'cri-RI-LI-PMI-CQI', the UE shall derive:

- the CSI parameters without averaging two or more instances of any periodic or semi-persistant *nzp-CSI-RSResource* in the corresponding *nzp-CSI-RS-ResourceSet* for channel measurement or for interference measurement located in different DL transmissions, where

- the instances of the *nzp-CSI-RSResource* are not in the same channel occupancy duration indicated by DCI format 2\_0, if the UE is provided at least one of *SlotFormatIndicator* or *CO-DurationList-r16*; or

- the instances of the *nzp-CSI-RSResource* occur in a set of symbols which are not all occupied by PDSCH(s) and/or aperiodic CSI-RS(s) indicated by DCI formats and the corresponding PDDCH(s), if the UE is neither provided with *CO-DurationPerCell-r16* nor *SlotFormatIndicator*, but is provided with *CSI-RS-ValidationWith-DCI-r16*

- the interference measurements for computing CSI value based on periodic/semi-persistent CSI-IM measured only in OFDM symbol(s) that fulfill the same conditions under which the UE is expected to receive periodic/semi-persistent CSI-RS as described in Clause 11.1 and Clause 11.1.1 of [6, TS 38.213].

# Issue DL-Z2 (On introduction of new PDSCH Mapping Type B Durations)

R1-2007979, P1 [Ericsson]:

TP4-1 for 38.214 Section 5.1.6.2

Add missing procedure text related to UE assumptions on default DMRS positions for the case of PDSCH scheduled by DCI 1\_0 for the new Type B PDSCH mapping lengths {3,5,6,8,9,10,11,12,13}.

|  |
| --- |
| ----------------------------------------- Text Proposal (TP 4-1) for 38.214, Section 5.1.6.2 -----------------------------------  \*\*\* Unchanged text omitted \*\*\*  When receiving PDSCH scheduled by DCI format 1\_0 or receiving PDSCH before dedicated higher layer configuration of any of the parameters *dmrs-AdditionalPosition*, *maxLength* and *dmrs-Type,* the UE shall assume that the PDSCH is not present in any symbol carrying DM-RS except for PDSCH with allocation duration of 2 symbols with PDSCH mapping type B (described in clause 7.4.1.1.2 of [4, TS 38.211]), and a single symbol front-loaded DM-RS of configuration type 1 on DM-RS port 1000 is transmitted, and that all the remaining orthogonal antenna ports are not associated with transmission of PDSCH to another UE and in addition  - For PDSCH with mapping type A and type B, the UE shall assume *dmrs-AdditionalPosition*='pos2' and up to two additional single-symbol DM-RS present in a slot according to the PDSCH duration indicated in the DCI as defined in Clause 7.4.1.1 of [4, TS 38.211], and  ~~- For PDSCH with allocation duration of 7 symbols for normal CP or 6 symbols for extended CP with mapping type B, the UE shall assume one additional single-symbol DM-RS present in the 5th or 6~~~~th~~ ~~symbol when the front-loaded DM-RS symbol is in the 1~~~~st~~ ~~or 2~~~~nd~~ ~~symbol respectively of the PDSCH allocation duration, otherwise the UE shall assume that the additional DM-RS symbol is not present, and~~  ~~- For PDSCH with allocation duration of 4 symbols with mapping type B, the UE shall assume that no additional DM-RS are present, and~~  - For PDSCH with allocation duration of 2 symbols with mapping type B, ~~the UE shall assume that no additional DM-RS are present, and~~ the UE shall assume that the PDSCH is present in the symbol carrying DM-RS.  \*\*\* Unchanged text omitted \*\*\*  ----------------------------------------------------------- End Text Proposal ----------------------------------------------------------- |

Please provide your view below for the above TP:

|  |  |
| --- | --- |
| Company | View |
| Nokia, NSB | We support |
| LG Electronics | Support the TP. |
| Qualcomm | Support the TP |
| Ericsson | Support the TP (as proponent).  In case some companies wonder why some text is struck out in the TP, it is because this text duplicates what is already written in 38.211 Clause 7.4.1.1 which is now referenced for both Type A and Type B PDSCH mapping. |

# Issue DL-Z3 (Search space set switching behaviour)

R1-2008204, P2 [Nokia]:

TP 5-1 for 38.213 sub-clause 10.4. Follow Interpretation #1 for cross-carrier scheduling

|  |
| --- |
| If a UE is not provided *SearchSpaceSwitchTrigger-r16* for a serving cell,  - if the UE detects a DCI format by monitoring PDCCH according to a search space set with group index 0, the UE starts monitoring PDCCH according to search space sets with group index 1, and stops monitoring PDCCH according to search space sets with group index 0, ~~on~~for the serving cell at a first slot that is at least symbols after the last symbol of the PDCCH with the DCI format, the UE sets the timer value to the value provided by *searchSpaceSwitchingTimer-r16* if the UE detects a DCI format by monitoring PDCCH in any search space set  - if the UE monitors PDCCH ~~on~~for the~~a~~ serving cell according to search space sets with group index 1, the UE starts monitoring PDCCH on the serving cell according to search space sets with group index 0, and stops monitoring PDCCH according to search space sets with group index 1, ~~on~~for the serving cell at the beginning of the first slot that is at least symbols after a slot where the timer expires or, if the UE is provided a search space set to monitor PDCCH for detecting a DCI format 2\_0, after a last symbol of a remaining channel occupancy duration for the serving cell that is indicated by DCI format 2\_0 |

Please provide your view below for the above TP:

|  |  |
| --- | --- |
| Company | View |
| OPPO | Leave for editor to decide |
| Nokia, NSB | Again, our motivation is to clarify cross-carrier scheduling with Search space groups of scheduled cell on the scheduling cell |
| LG Electronics | Support the TP. |
| Qualcomm | Support the TP |
| Ericsson | Support the TP |

R1-2008247, P1 [OPPO]:

TP 5-2 for 38.213 11.1.1.

Avoid the inconsistency in TS38.213 for the cell group configured cases.

|  |
| --- |
| ----------------TP5-2 for TS 38.213 section 11.1.1--------------------  11.1.1 UE procedure for determining slot format  <omit unrelated text>  - a location of a search space set group switching flag field in DCI format 2\_0, by *SearchSpaceSwitchTrigger-r16*, that indicates a group from two groups of search space sets for PDCCH monitoring for scheduling on the serving cell or the set of serving cells, provided by *CellGroupsForSwitching-r16*, as described in Clause 10.4.  ----------------------END of the TP5-2------------------------------------------- |

Please provide your view below for the above TP:

|  |  |
| --- | --- |
| Company | View |
| OPPO | As explained in our Tdoc, there are some parts in TS 38.213 that explicitly write ‘one the serving cell or the set of serving cells’. To make them consistency, we support this TP. |
| Nokia, NSB | We are fine, but depending on above also here “PDCCH monitoring for ~~scheduling on~~ the serving cell…” would be more appropriate |
| LG Electronics | Support the TP. |
| Qualcomm | Support the TP and Nokia change |
| Ericsson | Support the TP and Nokia change. Suggest adjusting the commas to clarify that CellGroupsForSwitching-r16 only applies to the case when there is a set of serving cells.  … PDCCH monitoring for ~~scheduling on~~ the serving cell, or the set of serving cells~~,~~ provided by *CellGroupsForSwitching-r16*, as described in Clause 10.4. |

# Issue UL-02 (Starting SRS symbol index)

In Rel-15, it was only possible to configure an SRS resource to start within the last 6 symbols of the slot. In Rel-16, it was agreed to support an SRS resource starting at any symbol of the slot. This feature is optional with per-band UE capability signaling (FG 10-11). CATT (R1-2008521) proposes that 38.214 be corrected to capture that the configuration is subject to UE capability

=======TP 6-1 for 38.214==============

6.2.1 UE sounding procedure

<Unrelated part omitted>

Subject to UE’s capability, the UE may be configured by the higher layer parameter *resourceMapping* in *SRS-Resource* with an SRS resource occupying  adjacent OFDM symbols within the last 6 symbols of the slot or at any symbol location within the slot, where all antenna ports of the SRS resources are mapped to each symbol of the resource. When the SRS is configured with the higher layer parameter *SRS-PosResourceSet-r16* the higher layer parameter *resourceMapping* in *SRS-PosResource-r16* with an SRS resource occupying adjacent symbols anywhere within the slot.

<Unrelated part omitted>

===End of TP 6-1=========================

Please provide your view below for the above TP:

|  |  |
| --- | --- |
| Company | View |
| OPPO | Agree with the intention, but we propose the following amendments.  =======TP 6-1 for 38.214==============  6.2.1 UE sounding procedure  <Unrelated part omitted>  When the SRS is configured with the higher layer parameter *SRS-Resource,* the UE may be configured by the higher layer parameter *resourceMapping* in *SRS-Resource* with an SRS resource occupying  adjacent OFDM symbols within the last 6 symbols of the slot, or at any symbol location within the slot if *resourceMapping-r16* is provided, where all antenna ports of the SRS resources are mapped to each symbol of the resource. When the SRS is configured with the higher layer parameter *SRS-PosResourceSet-r16* the higher layer parameter *resourceMapping-r16* in *SRS-PosResource-r16* with an SRS resource occupying adjacent symbols anywhere within the slot.  ===End of TP 6-1========================= |
| Nokia, NSB | We are ok with the proposal |
| Qualcomm | Support the TP |
| Ericsson | Agree with the intention of the original TP; also agree with some of OPPO's amendments. They two TPs can be merged as follows:  =======TP 6-1a for 38.214==============  6.2.1 UE sounding procedure  <Unrelated part omitted>  The UE may be configured by the higher layer parameter *resourceMapping* in *SRS-Resource* with an SRS resource occupying  adjacent OFDM symbols within the last 6 symbols of the slot, or at any symbol location within the slot if *resourceMapping-r16* is provided subject to UE capability, where all antenna ports of the SRS resources are mapped to each symbol of the resource. When the SRS is configured with the higher layer parameter *SRS-PosResourceSet-r16* the higher layer parameter *resourceMapping* in *SRS-PosResource-r16* with an SRS resource occupying adjacent symbols anywhere within the slot.  <Unrelated part omitted>  ===End of TP 6-1========================= |

# Issue WB-04

From R1-2007777 (Fujitsu),

------------------------------------ Text Proposal 7-1 for Clause 7 of TS 38.214------------------------

\*\*\* Unchanged text omitted \*\*\*

For a carrier, the UE expects and where for a BWP i configured by ~~BWP-DownlinkCommon or BWP-DownlinkDedicated~~ *initialDownlinkBWP* or *BWP-Downlink* for the DL BWP, or ~~BWP-UplinkCommon or BWP-UplinkDedicated~~ *initialUplinkBWP* or *BWP-Uplink* for the UL BWP. Within the BWP i, RB sets are numbered in increasing order from 0 to where is the number of RB sets contained in the BWP i and RB set 0 within the BWP i corresponds to RB set in the carrier and RB set within the BWP i corresponds to RB set in the carrier.

\*\*\* Unchanged text omitted \*\*\*

---------------------------- End of TP 7-1 -------------------------

Please provide your view below for the above TP:

|  |  |
| --- | --- |
| Company | View |
| OPPO | Left for editor to decide |
| Nokia, NSB | I think it would be sufficient to keep only “BWP-DownlinkCommon”, since this IE contains generic parameters for any BWP (initial or dedicated), such as location  BWP-DownlinkCommon ::= SEQUENCE {  genericParameters BWP,  pdcch-ConfigCommon SetupRelease { PDCCH-ConfigCommon } OPTIONAL, -- Need M  pdsch-ConfigCommon SetupRelease { PDSCH-ConfigCommon } OPTIONAL, -- Need M  ...  }  BWP ::= SEQUENCE {  locationAndBandwidth INTEGER (0..37949),  subcarrierSpacing SubcarrierSpacing,  cyclicPrefix ENUMERATED { extended } OPTIONAL -- Need R  } |
| Qualcomm | Support the TP |
| Ericsson | I don't think this TP is needed; the orginal wording was sufficient to cover all cases of SpCell configuration and SCell addition for both SA and NSA deployments.  If *BWP-Downlink/UplinkDedicated* is removed, then SpCell configuration by dedicated signaling is not covered. |

From R1-2008386 (Sharp), it is proposed to align RRC parameter names.

The latest TS38.331 specifies RRC parameters for intra-cell guard bands as follows [1].

intraCellGuardBandsDL-List-r16 SEQUENCE (SIZE (1..maxSCSs)) OF IntraCellGuardBandsPerSCS-r16 OPTIONAL, -- Need S

intraCellGuardBandsUL-List-r16 SEQUENCE (SIZE (1..maxSCSs)) OF IntraCellGuardBandsPerSCS-r16 OPTIONAL, -- Need S

As above, intra-cell guard band configuration is updated to include configuration per SCS (*IntraCellGuardBandsPerSCS-r16*). The structure of *IntraCellGuardBandsPerSCS-r16* is as follows.

IntraCellGuardBandsPerSCS-r16 ::= SEQUENCE {

guardBandSCS-r16 SubcarrierSpacing,

intraCellGuardBands-r16 SEQUENCE (SIZE (1..4)) OF GuardBand-r16

}

Section 7 of TS38.214V16.3,0 doesn’t reflect this change. Therefore, we propose to update the spec. as follows. In addition, *intraCellGuardBandDL-r16* and *intraCellGuardBandUL-r16* are replaced by *intraCellGuardBands-r16*. This change should also be reflected.

TP 7-2

--------- beginning of text proposal for TS 38.214-----------------------

7 UE procedures for transmitting and receiving on a carrier with intra-cell guard bands

For operation with shared spectrum channel access, when the UE is configured with any of *intraCellGuardBands-r16* for UL carrier andfor DL carrier with SCS configuration , the UE is provided with intra-cell guard bands on a carrier with SCS configuration , each defined by start CRB and size in number of CRBs, and , provided by higher layer parameters *startCRB-r16* and *nrofCRBs-r16*, respectively, where . The subscript *x* is set to DL and UL for the downlink and uplink, respectively. Where there is no risk of confusion, the subscript *x* can be dropped. The intra-cell guard bands separate RB sets, each defined by start and end CRB, and , respectively. The UE does not expect that *nrofCRBs-r16* is configured with non-zero value smaller than the applicable intra-cell guard bands as specified in [8, TS 38.101-1] corresponding to SCS configuration and carrier size . The UE determines the start and end CRB indices for as

and

The RB set with index consists of resource blocks where . When the UE is not configured with *intraCellGuardBands-r16* for SCS configuration , the UE determines the CRB indices for the intra-cell guard band(s), if any, and corresponding RB set(s) according to the nominal intra-cell guard band and RB set pattern as specified in [8, TS 38.101-1] corresponding to SCS configuration and carrier size . For either or both DL and UL, if the nominal intra-cell guard band and RB set pattern as specified in [8, TS 38.101-1] contains no intra-cell guard bands, the number of RB sets for the carrier is .

For a carrier with SCS configuration , the UE expects and where for a BWP i configured by *BWP-DownlinkCommon* or *BWP-DownlinkDedicated* for the DL BWP, or *BWP-UplinkCommon* or *BWP-UplinkDedicated* for the UL BWP. Within the BWP i, RB sets are numbered in increasing order from 0 to where is the number of RB sets contained in the BWP i and RB set 0 within the BWP i corresponds to RB set in the carrier and RB set within the BWP i corresponds to RB set in the carrier.

When a UE is provided with *nrofCRBs-r16=*0 for all intra-cell guard band(s) on a carrier with SCS configuration , the UE is indicated that no intra-cell guard-bands are configured for the carrier and expects . For SCS configuration , the UE expects the number of RBs within a RB set is between 100 and 110. For SCS configuration , the UE expects the number of RBs within a RB set is between 50 and 55 except for at most one RB set which may contain 56 RBs.

-------- Unchanged contents are omitted

--------- end of text proposal

Please provide your view below for the above TP:

|  |  |
| --- | --- |
| Company | View |
| OPPO | Agree in principle, further discussing TP content is needed. |
| Nokia, NSB | We are fine with the TP, which generalizes text for DL and UL, and such simplifies the specification. |
| LG Electronics | Agree to   * Change * Add SCS configuration   For other changes, modification made by spec editor as in R1-2008292 seems sufficient. |
| Qualcomm | Support the TP |
| Ericsson | Agree to the change  For the rest of the TP, we prefer to just substitute the proper RRC parameter names for DL and UL separately rather than trying to achieve more compaction of the text. Besides the first paragraph is not correct anymore; "any of" doesn't make sense if only a single parameter is used.  It is not necessary to write everywhere "SCS configuration This can be handled once in the first paragraph as follows. Then all other changes can be removed. There is no risk of confusion, since all relevant variables have superscript  We propose the following simpler TP:  TP 7-2a  \*\*\* Unchanged text omitted \*\*\*  For operation with shared spectrum channel access, when the UE is configured with any of *intraCellGuardBandsUL-List-r16* for an UL carrier and *intraCellGuardBandsDL-List-r16* for a DL carrier, where each list entry corresponds to an SCS configuration , the UE is provided with intra-cell guard bands on a carrier, each defined by start CRB and size in number of CRBs, and , provided by higher layer parameters *startCRB-r16* and *nrofCRBs-r16*, respectively, where . The subscript *x* is set to DL and UL for the downlink and uplink, respectively.  \*\*\* Unchanged text omitted \*\*\* |