3GPP TSG-RAN WG1 Meeting #108-e Tdoc R1- 2202543

E-meeting, February 21st – March 3rd, 2022

Agenda Item: 8

Source: Moderator (Ericsson)

Title: Summary of Email discussion on Rel-17 RRC parameters for LS to RAN2

Document for: Discussion, Decision

# 1 Introduction

This document summarizes the discussions in input contributions and during RAN1#108-e under the following email thread assigned by RAN1 Chair:

[108-e-R17-RRC] LS to RAN2 on updated Rel-17 RRC parameters – Sorour (Ericsson)

* First LS to be finalized by February 25
* If necessary, second LS on any remaining issues to be finalized by March 4

The LS [1][2][3] with Rel-17 consolidated higher layer parameters were sent to RAN2/RAN3 since post RAN1#106bis-e meeting. The discussions on RRC parameters in RAN1#107bis-e were conducted only for the six WIs, namely as 60 GHz, IIoT&URLLC, Power saving, Coverage enh., Sidelink and MBS. In this meeting, the corresponding discussions on RRC parameters involve all WIs under [108-e-R17-RRC].

The Chair has provided the following guidelines when conducting the discussions:

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| RAN1 Chair: With regards to the RRC email threads that we have under each Rel-17 work item, I would like to clarify one thing.Although there are RRC parameter email threads under each Rel-17 work item, it is only to complete any leftover RRC parameter related discussions. Especially for the WIs that we treated in RAN1#107bis-e, the bar for making changes to RAN2 or RAN3 specs should be much higher. The principle should be no change unless essential from **maintenance point of view**. Having said this, I understand that there are still some open issues on RRC parameters (such as range of values and a few yellow colored fields). RAN1 will focus on such aspect. |

Similar to the previous meetings, aiming for a consistent and efficient approach for preparing RRC parameters in RAN1, the set of recommendations and guidelines in [4] is used.

The coordination between RRC email discussions per WI and this email discussion is considered as the following:

* The Moderator of each WI RRC email discussion [108-e-R17-RRC-WI] has provided the “WI input RRC list”. These lists are collected in an Excel sheet by the Moderator of [108-e-R17-RRC].
* The collective Excel sheet is reviewed under [108-e-R17-RRC] email discussion using section 2.1 below.
* Each WI input RRC list includes a column at the end for “Status” to identify most importantly the “stable” rows in the list. Please note that this column is for RAN1 information only and will not be included in the LS to RAN2.

Please note that similarly to the previous meetings, the content of a row, including its status, would be subject to potential change on demand basis. Otherwise, no change would be applied.

Companies are encouraged to consider the discussion in the following section and provide their input, if any.

# 2 Discussion

## 2.1 RRC parameter lists of Rel-17 WIs

The sub-sections below are organized for collection of comments on RRC parameters per WI. Please provide your comments, if any, for the input RRC list of a WI in the corresponding sub-section using the **latest version of Excel sheet** available at folder [Collection of RRC parameters](https://www.3gpp.org/ftp/tsg_ran/WG1_RL1/TSGR1_108-e/Inbox/drafts/8/%5B108-e-R17-RRC%5D/Collection%20of%20RRC%20parameters/R1-22xxxxx%20Collection%20of%20updated%20higher%20layers%20parameter%20list%20-%20v000.xlsx).

### 2.1.1 feNR-MIMO (WI code: NR\_FeMIMO)

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| **If you have any comment for a row in the Sheet corresponding to this WI, please provide your comment below by indicating the Row number.**  |
| **Company** | **Comment** |
| Moderator | No update as compared to the list in the previous LS. Moderator will announce when/if the list is updated. |
| Moderator | **@All:** For feMIMO, the corresponding RRC parameters are updated by FL and available now in the last version **(i.e. v009)** at folder [Collection of RRC parameters](https://www.3gpp.org/ftp/tsg_ran/WG1_RL1/TSGR1_108-e/Inbox/drafts/8/%5B108-e-R17-RRC%5D/Collection%20of%20RRC%20parameters/R1-22xxxxx%20Collection%20of%20updated%20higher%20layers%20parameter%20list%20-%20v000.xlsx) for review. |
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### 2.1.2 60GHz (WI code: NR\_ext\_to\_71GHz)

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| **If you have any comment for a row in the Sheet corresponding to this WI, please provide your comment below by indicating the Row number.**  |
| **Company** | **Comment** |
| Moderator | The updated list is not ready for review and discussion in this thread. Moderator will announce when the list is ready to be reviewed and discussed in this email thread. |
| Moderator | **@All:** For 60 GHz, the corresponding RRC parameters are updated by FL and available now in the last version **(i.e. v002)** at folder [Collection of RRC parameters](https://www.3gpp.org/ftp/tsg_ran/WG1_RL1/TSGR1_108-e/Inbox/drafts/8/%5B108-e-R17-RRC%5D/Collection%20of%20RRC%20parameters/R1-22xxxxx%20Collection%20of%20updated%20higher%20layers%20parameter%20list%20-%20v000.xlsx) for review. Changes are the following:* **Row 9 and Row 10:** updated to remove 16 from the list of Q supported
* **Row 11:** Removed (spare not needed to indicate Q)
* **Row 44:** Added (CGB transmission configuration)
 |
| LG Electronics | **Row 9** seems to need further modification, considering that ‘spare’ bit cannot be used for indicating N\_SSB^QCL parameter. To be specific, **column J** can be updated as follows (with green texts):For FR2-2, only same SCS for SSB and coreset 0 is supported~~together with 'spare' the two bits~~ This parameter will indicate {~~reserve, 16,~~ 32, 64} for N\_SSB^QCL parameter |
| Ericsson | Agree with LGE that Row 9 needs updating. The relevant agreement (working assumption) is shown below. To be consistent with the agreement we prefer the following update to Column J to also capture that this is for shared spectrum channel access as clarified in the agreement:For FR2-2, only same SCS for SSB and coreset 0 is supported.~~together with 'spare' the two bits will~~ For operation with shared spectrum channel access, the field indicates {~~reserve, 16,~~ 32, 64} for N\_SSB^QCL parameter.Working assumption* Use 1 bit for Q in MIB
	+ SubcarrierSpacingCommon field will be used to convey value of {32, 64} for operation with shared spectrum channel access

* + Note that this is revising the working assumption made in RAN1#107-e on “use 2 bits for Q, {SubcarrierSpacingCommon, spare bit in MIB}”
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| Moderator | **@All:** For 60 Ghz, in the last version **(i.e. v007)** at folder [Collection of RRC parameters](https://www.3gpp.org/ftp/tsg_ran/WG1_RL1/TSGR1_108-e/Inbox/drafts/8/%5B108-e-R17-RRC%5D/Collection%20of%20RRC%20parameters/R1-22xxxxx%20Collection%20of%20updated%20higher%20layers%20parameter%20list%20-%20v000.xlsx), the following changes are applied:* **Row 9:** Column (J) is updated based on LG and Ericsson comment, with Ericsson’s additions, i.e.

For FR2-2, only same SCS for SSB and coreset 0 is supported.~~together with 'spare' the two bits will~~ For operation with shared spectrum channel access, the field indicates {~~reserve, 16,~~ 32, 64} for N\_SSB^QCL parameter. |
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### 2.1.3 IIoT&URLLC (WI code: NR\_IIOT\_URLLC\_enh)

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| **If you have any comment for a row in the Sheet corresponding to this WI, please provide your comment below by indicating the Row number.**  |
| **Company** | **Comment** |
| Moderator | No update as compared to the list in the previous LS. Moderator will announce when/if the list is updated. |
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### 2.1.4 NR-NTN (WI code: NR\_NTN\_solutions)

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| **If you have any comment for a row in the Sheet corresponding to this WI, please provide your comment below by indicating the Row number.**  |
| **Company** | **Comment** |
| Moderator | No update as compared to the list in the previous LS. Moderator will announce when/if the list is updated. |
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### 2.1.5 Positioning (WI code: NR\_pos\_enh)

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| **If you have any comment for a row in the Sheet corresponding to this WI, please provide your comment below by indicating the Row number.**  |
| **Company** | **Comment** |
| Moderator | **@All:** For Positioning, the corresponding RRC parameters are updated by FL and available now in the last version **(i.e. v001)** at folder [Collection of RRC parameters](https://www.3gpp.org/ftp/tsg_ran/WG1_RL1/TSGR1_108-e/Inbox/drafts/8/%5B108-e-R17-RRC%5D/Collection%20of%20RRC%20parameters/R1-22xxxxx%20Collection%20of%20updated%20higher%20layers%20parameter%20list%20-%20v000.xlsx) for review. |
| Moderator | **@All:** For Positioning, the corresponding RRC parameters are updated by FL and available now in the last version **(i.e. v008)** at folder [Collection of RRC parameters](https://www.3gpp.org/ftp/tsg_ran/WG1_RL1/TSGR1_108-e/Inbox/drafts/8/%5B108-e-R17-RRC%5D/Collection%20of%20RRC%20parameters/R1-22xxxxx%20Collection%20of%20updated%20higher%20layers%20parameter%20list%20-%20v000.xlsx) for review. |
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### 2.1.6 RedCap (WI code: NR\_redcap)

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| **If you have any comment for a row in the Sheet corresponding to this WI, please provide your comment below by indicating the Row number.**  |
| **Company** | **Comment** |
| Moderator | No update as compared to the list in the previous LS. Moderator will announce when/if the list is updated. |
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### 2.1.7 Power saving (WI code: NR\_UE\_pow\_sav\_enh)

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| **If you have any comment for a row in the Sheet corresponding to this WI, please provide your comment below by indicating the Row number.**  |
| **Company** | **Comment** |
| Moderator | No update as compared to the list in the previous LS. Moderator will announce when/if the list is updated. |
| Moderator | **@All:** For Power saving, the corresponding RRC parameters are updated by FL and available now in the last version **(i.e. v005)** at folder [Collection of RRC parameters](https://www.3gpp.org/ftp/tsg_ran/WG1_RL1/TSGR1_108-e/Inbox/drafts/8/%5B108-e-R17-RRC%5D/Collection%20of%20RRC%20parameters/R1-22xxxxx%20Collection%20of%20updated%20higher%20layers%20parameter%20list%20-%20v000.xlsx) for review.FL has provided following clarifications:* **Row 9:** Columns J and K: The last sentence in Column J is moved to replace the TBD in Column K.
* **Row 10:** Column M: “per ~~TRS-ResourceSet~~ TRS resource set”
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### 2.1.8 Coverage (WI code: NR\_cov\_enh)

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| **If you have any comment for a row in the Sheet corresponding to this WI, please provide your comment below by indicating the Row number.**  |
| **Company** | **Comment** |
| Moderator | No update as compared to the list in the previous LS. Moderator will announce when/if the list is updated. |
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### 2.1.9 UL Tx switching (WI code: NR\_RF\_FR1\_enh-Core)

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| **If you have any comment for a row in the Sheet corresponding to this WI, please provide your comment below by indicating the Row number.**  |
| **Company** | **Comment** |
| Moderator | The updated list is not ready for review and discussion in this thread. Moderator will announce when the list is ready to be reviewed and discussed in this email thread. |
| Moderator | **@All:** For UL Tx Switching, the corresponding RRC parameters are updated by FL and available now in the last version **(i.e. v003)** at folder [Collection of RRC parameters](https://www.3gpp.org/ftp/tsg_ran/WG1_RL1/TSGR1_108-e/Inbox/drafts/8/%5B108-e-R17-RRC%5D/Collection%20of%20RRC%20parameters/R1-22xxxxx%20Collection%20of%20updated%20higher%20layers%20parameter%20list%20-%20v000.xlsx) for review.FL has provided following clarifications:* **Row 2:** For the square brackets in row 2 and Columm l, as RAN2 has already discussed the range value and default value in the running CR, no further update is needed from RAN1 perspective.
* **Row 3:** Updated and stable now.
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### 2.1.10 Small data (WI code:NR\_SmallData\_INACTIVE-Core)

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| **If you have any comment for a row in the Sheet corresponding to this WI, please provide your comment below by indicating the Row number.**  |
| **Company** | **Comment** |
| Moderator | No update as compared to the list in the previous LS. Moderator will announce when/if the list is updated. |
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### 2.1.11 NB-IoT&eMTC (WI code: NB\_IOTenh4\_LTE\_eMTC6)

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| **If you have any comment for a row in the Sheet corresponding to this WI, please provide your comment below by indicating the Row number.**  |
| **Company** | **Comment** |
| Moderator | No update as compared to the list in the previous LS. Moderator will announce when/if the list is updated. |
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### 2.1.12 eIAB (WI code: NR\_IAB\_enh)

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| **If you have any comment for a row in the Sheet corresponding to this WI, please provide your comment below by indicating the Row number.**  |
| **Company** | **Comment** |
| Moderator | No update as compared to the list in the previous LS. Moderator will announce when/if the list is updated. |
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### 2.1.13 Sidelink (WI code: NR\_SL\_enh)

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| **If you have any comment for a row in the Sheet corresponding to this WI, please provide your comment below by indicating the Row number.**  |
| **Company** | **Comment** |
| Moderator | No update as compared to the list in the previous LS. Moderator will announce when/if the list is updated. |
| Moderator | **@All:** For Sidelink, the corresponding RRC parameters are updated by FL and available now in the last version **(i.e. v010)** at folder [Collection of RRC parameters](https://www.3gpp.org/ftp/tsg_ran/WG1_RL1/TSGR1_108-e/Inbox/drafts/8/%5B108-e-R17-RRC%5D/Collection%20of%20RRC%20parameters/R1-22xxxxx%20Collection%20of%20updated%20higher%20layers%20parameter%20list%20-%20v000.xlsx) for review.As FL has indicated above, the follwong changes are made:* **Row 6:** The lower bound value is updated based on the agreement made in this meeting.
* **Row 7**: Removed because IE of minNumCandidateSlotsAperiodic is duplicated in Row 7 and 13.
* **Row 11**: The square bracket of lower bound value is removed considering that the chairman already confirmed in Thursday’s GTW session that removing the square bracket of lower bound value is allowed based on the current working assumption.
* **Row 35:** The value range including its granularity is updated based on the agreement made in this meeting.
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### 2.1.14 MBS (WI code: NR\_MBS)

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| **If you have any comment for a row in the Sheet corresponding to this WI, please provide your comment below by indicating the Row number.**  |
| **Company** | **Comment** |
| Moderator | No update as compared to the list in the previous LS. Moderator will announce when/if the list is updated. |
| CMCC (FL) | * In Row 23, default value of *dl-DataToUL-ACK-MulticastDciFormat4\_1* is updated to {1, 2, 3, 4, 5, 6, 7, 8} based on the following agreement.

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| **Agreement**A list of up to 8 k1 values can be configured by higher layer parameter *dl-DataToUL-ACK-MulticastDciFormat1\_0* to be applied to multicast DCI format 1\_0 for RRC\_CONNECTED UEs. If the higher layer parameter *dl-DataToUL-ACK-MulticastDciFormat1\_0* is not provided, k1 list {1, 2, 3, 4, 5, 6, 7, 8} is applied to multicast DCI format 1\_0.* The size of ‘PDSCH-to-HARQ\_feedback timing indicator’ field of multicast DCI format 1\_0 is fixed at 3 bits.
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* In Rows 62 and 63, *rateMatchPatternLTE-CRS* and *mbsControlResourceSet* are added to reflect the following agreements:

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| **Agreement***RateMatchPatternLTE-CRS* can be configured in PDSCH-Config-MCCH or PDSCH-Config-MTCH for RRC\_IDLE/RRC\_INACTIVE UEs*.***Agreement**For broadcast reception, if the frequency resources of the CFR for broadcast is larger than CORESET0, a CORESET larger than CORESET0 can be configured in the CFR when no CORESET is configured by c*ommonControlResourceSet.* |

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| Moderator | **@All:** For MBS, the corresponding RRC parameters are updated by FL and available now in the last version **(i.e. v004)** at folder [Collection of RRC parameters](https://www.3gpp.org/ftp/tsg_ran/WG1_RL1/TSGR1_108-e/Inbox/drafts/8/%5B108-e-R17-RRC%5D/Collection%20of%20RRC%20parameters/R1-22xxxxx%20Collection%20of%20updated%20higher%20layers%20parameter%20list%20-%20v000.xlsx) for review.As FL has indicated above, the follwong changes are made:* **Row 23**: Default value of *dl-DataToUL-ACK-MulticastDciFormat4\_1* is updated to {1, 2, 3, 4, 5, 6, 7, 8}.
* **Rows 62 and 63**: *rateMatchPatternLTE-CRS* and *mbsControlResourceSet* are added.
 |
| CMCC(FL) | @Moderator, the following agreements for MBS has RRC impact, please include them in the LS to inform RAN2 about them.**Agreement**Send an LS to inform RAN2 that the following parameters are NOT needed for PDCCH-Config-Multicast:* + downlinkPreemption
	+ tpc-PUCCH
	+ tpc-PUSCH
	+ tpc-SRS
	+ uplinkCancellation-r16
	+ monitoringCapabilityConfig-r16 (the default is *R15monitoringcapablity*)
	+ searchSpaceSwitchConfig-r16

**Agreement**Send an LS to inform RAN2 that the following parameters are NOT needed for PDSCH-Config-Multicast:* *minimumSchedulingOffsetK0-r16*
* *antennaPortsFieldPresenceDCI-1-2-r16, aperiodicZP-CSI-RS-ResourceSetsToAddModListDCI-1-2-r16, aperiodicZP-CSI-RS-ResourceSetsToReleaseListDCI-1-2-r16, dmrs-DownlinkForPDSCH-MappingTypeA-DCI-1-2-r16, dmrs-DownlinkForPDSCH-MappingTypeB-DCI-1-2-r16, dmrs-SequenceInitializationDCI-1-2-r16, harq-ProcessNumberSizeDCI-1-2-r16, mcs-TableDCI-1-2-r16, numberOfBitsForRV-DCI-1-2-r16, pdsch-TimeDomainAllocationListDCI-1-2-r16, prb-BundlingTypeDCI-1-2-r16, priorityIndicatorDCI-1-2-r16, rateMatchPatternGroup1DCI-1-2-r16, rateMatchPatternGroup2DCI-1-2-r16, resourceAllocationType1GranularityDCI-1-2-r16, vrb-ToPRB-InterleaverDCI-1-2-r16, referenceOfSLIVDCI-1-2-r16, resourceAllocationDCI-1-2-r16,*
* *dataScramblingIdentityPDSCH2-r16*
* *repetitionSchemeConfig-r16, repetitionSchemeConfig-v1630*
 |
| Moderator | **@All:** The agreements above are included in draft LS. Please review section 2.2 and comment, if any additional update is needed. |
| ZTE | Thanks for the discussion. We are fine to add the two agreements provided by CMCC (FL) above. In addition to that, we propose to add the following new agreements just reached in AI8.12.1. RAN2 may need to update their signaling design to support multicast on SCell.**Agreement**If UE supports carrier aggregation for unicast, multicast reception on an activated SCell with self-scheduling is supported subject to UE capability in Rel-17.* UE is not expected to be configured simultaneously with more than one component carrier for multicast reception.
* Cross-carrier scheduling for multicast reception is not supported in Rel-17.
* The capability of supporting MBS multicast on SCell is a separate capability from the CA capability for unicast.
	+ The granularity of UE reporting the capability of supporting MBS multicast reception is per FSPC
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### 2.1.15 DSS (WI code: NR\_DSS)

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| **If you have any comment for a row in the Sheet corresponding to this WI, please provide your comment below by indicating the Row number.**  |
| **Company** | **Comment** |
| Moderator | No update as compared to the list in the previous LS. Moderator will announce when/if the list is updated. |
| Moderator | **@All:** For DSS, the corresponding RRC parameters are updated by FL and available now in the last version **(i.e. v010)** at folder [Collection of RRC parameters](https://www.3gpp.org/ftp/tsg_ran/WG1_RL1/TSGR1_108-e/Inbox/drafts/8/%5B108-e-R17-RRC%5D/Collection%20of%20RRC%20parameters/R1-22xxxxx%20Collection%20of%20updated%20higher%20layers%20parameter%20list%20-%20v000.xlsx) for review. |
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### 2.1.16 MR-DCs Scell Act (WI code: LTE\_NR\_DC\_enh2)

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| **If you have any comment for a row in the Sheet corresponding to this WI, please provide your comment below by indicating the Row number.**  |
| **Company** | **Comment** |
| Moderator | No update as compared to the list in the previous LS. Moderator will announce when/if the list is updated. |
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### 2.1.17 IoT NTN (WI code: LTE\_NBIOT\_eMTC\_NTN)

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| **If you have any comment for a row in the Sheet corresponding to this WI, please provide your comment below by indicating the Row number.**  |
| **Company** | **Comment** |
| Moderator | No update as compared to the list in the previous LS. Moderator will announce when/if the list is updated. |
| Moderator | **@All:** For IoT NTN, the corresponding RRC parameters are updated by FL and available now in the last version **(i.e. v006)** at folder [Collection of RRC parameters](https://www.3gpp.org/ftp/tsg_ran/WG1_RL1/TSGR1_108-e/Inbox/drafts/8/%5B108-e-R17-RRC%5D/Collection%20of%20RRC%20parameters/R1-22xxxxx%20Collection%20of%20updated%20higher%20layers%20parameter%20list%20-%20v000.xlsx) for review. |
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### 2.1.18 5G-Broadcast (WI code: LTE\_terr\_bcast\_bands\_part1)

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| **If you have any comment for a row in the Sheet corresponding to this WI, please provide your comment below by indicating the Row number.**  |
| **Company** | **Comment** |
| Moderator | No update as compared to the list in the previous LS. Moderator will announce when/if the list is updated. |
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## 2.2 Draft LS to RAN2 on RRC parameters

A draft for LS to RAN2 is provided and available at folder [Draft LS](https://www.3gpp.org/ftp/tsg_ran/WG1_RL1/TSGR1_108-e/Inbox/drafts/8/%5B108-e-R17-RRC%5D/Draft%20LS/R1-22XXXXX%20DRAFT%20LS%20on%20Re-17%20NR%20higher-layers%20parameter%20list%20%E2%80%93%20v000.docx). Please provide your comments, if any, on the **latest version of draft LS**.

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| **Company** | **Comment** |
| Moderator | **@All:** In the latest version of draft LS (i.e. **v001**), Moderator has made the following change with the view of be more accurate and avoid unnecessary information.* In addition, RAN1 may see the need for additional update of the higher layer parameters. RAN1 will continue working on consolidating them and will share the corresponding updates with RAN2 and RAN3 in the next ~~week~~ LS if needed.
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| Moderator | **@All:** In the latest version of draft LS (i.e. **v002**), Moderator has included the agreements made for NR MBS as requested by FL in section 2.1.14. |
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## 2.3 Improve RRC parameters preparation activity

The document in [4] is an attempt to address our challenges in RAN1 for the task of RRC parameters preparation based on our previous experiences. Please consider this section to share your questions, comments and suggestions that could help to further improve our WoW within RAN1, as well as inter-action with RAN2 with respect to RRC parameter preparation. The more we know, the more we can improve. Thank You!

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| **Company** | **Comment** |
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# 3 Conclusion

TBD

# 4 References

1. R1-2110575 LS on Re-17 LTE and NR higher-layers parameter list; RAN1
2. R1-2112977 LS on updated Rel-17 LTE and NR higher-layers parameter list; RAN1
3. R1-2200700 LS on updated Rel-17 NR higher-layers parameter list; RAN1
4. R1-2111193 Recommendations for RAN1 RRC Parameter Preparation; Moderator (Ericsson)