3GPP TSG-RAN WG1 Meeting #112bis-e Tdoc R1- 23xxxxx

E-meeting, April 17th – 26th, 2023

Agenda Item: 9.18

Source: Moderator (Ericsson)

Title: Summary of Email discussion on Rel-18 RRC parameters for LS to RAN2/RAN3

Document for: Discussion, Decision

# 1 Introduction

This document summarizes the discussions in input contributions and during RAN1#112bis-e under the following email thread assigned by RAN1 Chair:

[112bis-e-R18-RRC-01] Email discussion on RRC signalling by April 26 – Sorour (Ericsson)

* For eDSS, NCR, MC-Enh, BWP without restriction (details in RP-230805), and endorsed TEI proposals

The WoW described in Appendix is used for coordinating the activities under this email discussion. Companies are encouraged to follow the WoW for discussion and exchanging views.

# 2 Discussion

## 2.1 RRC parameter lists of Rel-18 WIs

The sub-sections below are organized for collection of comments on RRC parameters per WI. Please provide you comments, if any, for the input RRC list of a WI in the corresponding sub-section using the **latest version of Excelsheet** available at folder [Collection of RRC parameters](https://www.3gpp.org/ftp/tsg_ran/WG1_RL1/TSGR1_112b-e/Inbox/drafts/9.18(Other)/%5B112b-e-R18-RRC%5D/Collection%20of%20RRC%20parameters/draft_Rel-18_higher_layers_parameters_list%20-%20v000.xlsx).

Please note that the grayed-out sub-sections are not activated for discussion at this meeting.

### 2.1.1 NCR (WI code: NR\_netcon\_repeater-Core)

|  |  |
| --- | --- |
| **Please see [1] for information provided by Rapporteur/Moderator of this WI.**  **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** |
|  |  |
|  |  |
|  |  |

### 2.1.2 eDSS (WI code: NR\_DSS\_enh)

|  |  |
| --- | --- |
| **Please see [2] for information provided by Rapporteur/Moderator of this WI.**  **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** |
|  |  |
|  |  |
|  |  |

### 2.1.3 MCE (WI code: NR\_MC\_enh)

|  |  |
| --- | --- |
| **Please see [3] for information provided by Rapporteur/Moderator of this WI.**  **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** |
| NTT DOCOMO (as MCE WI rapporteur) | In addition to your comment/feedback (if any) on rows in rapporteur’s initial version of RRC parameter list, please also provide your comment/feedback on companies’ proposals on other additional RRC parameters in their contributions (e.g., configurations on VRB-to-PRB mapping, PRB bundling size indicator, Frequency hopping flag, Rel-18 dynamic waveform switching, etc. for multi-cell scheduling).  Based on your feedbacks by 19th UTC 9:00, I will update the RRC parameter list for MCE and upload it to [ForRapporteursUseOnly/[112b-e-R18-RRC-MCE]](https://www.3gpp.org/ftp/tsg_ran/WG1_RL1/TSGR1_112b-e/Inbox/drafts/9.18(Other)/%5B112b-e-R18-RRC%5D/ForRapporteursUseOnly/%5B112b-e-R18-RRC-MCE%5D).  If there has been no comment/feedback on a row in rapporteur’s version of RRC parameter list by the deadline, I will propose to mark it as “stable”. |
| ZTE | **Issue#1:**  One question for clarification regarding the following value range for BandPriority.  Since both “INTEGER (0..3)” and “[TBD in RAN2]” are provided in the column, does it mean that the “INTEGER (0..3)” is just example value range and it should be decided by RAN2 in the end?  If yes, we propose something like “TBD in RAN2, one example is: INTEGER (0..3)”.     |  | | --- | | INTEGER (0..3)   [TBD in RAN2] |   Similar comments for value range for uplinkTxSwitchingOption-bandPair.  **Issue#2:**  It seems that at least for uplinkTxSwitchingOption-bandPair and associatedBand, RAN2 has already started their work to define the corresponding RRC signalling. Not sure whether we need to send this two in the RRC list to RAN2.  We don’t have a strong view on this. If companies can reach common understanding on these two rows, we are happy to include them. However, if companies can not reach common understanding quickly, we propose to leave it to RAN2 anyway. |
|  |  |

### 2.1.4 MIMO (WI code: NR\_MIMO\_evo\_DL\_UL)

|  |  |
| --- | --- |
| **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** |
|  |  |
|  |  |
|  |  |

### 2.1.5 SL (WI code: NR\_SL\_enh2)

|  |  |
| --- | --- |
| **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** |
|  |  |
|  |  |
|  |  |

### 2.1.6 POS (WI code: NR\_pos\_enh2)

|  |  |
| --- | --- |
| **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** |
|  |  |
|  |  |
|  |  |

### 2.1.7 RedCap (WI code: NR\_redcap\_enh)

|  |  |
| --- | --- |
| **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** |
|  |  |
|  |  |
|  |  |

### 2.1.8 NES (WI code: Netw\_Energy\_NR)

|  |  |
| --- | --- |
| **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** |
|  |  |
|  |  |
|  |  |

### 2.1.9 CovEnh (WI code: NR\_cov\_enh2)

|  |  |
| --- | --- |
| **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** |
|  |  |
|  |  |
|  |  |

### 2.1.10 UAV (WI code:NR\_UAV)

|  |  |
| --- | --- |
| **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** |
|  |  |
|  |  |
|  |  |

### 2.1.11 XR (WI code: NR\_XR\_enh-Core)

|  |  |
| --- | --- |
| **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** |
|  |  |
|  |  |
|  |  |

### 2.1.12 Mobility (WI code: NR\_Mob\_enh2)

|  |  |
| --- | --- |
| **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** |
|  |  |
|  |  |
|  |  |

### 2.1.13 FR1<5MHz (WI code: NR\_FR1\_lessthan\_5MHz\_BW)

|  |  |
| --- | --- |
| **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** |
|  |  |
|  |  |
|  |  |

### 2.1.14 BWP w/out Restriction (WI code: BWP\_wor)

|  |  |
| --- | --- |
| **Please see [4] for information provided by Rapporteur/Moderator of this WI.**  **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** |
|  |  |
|  |  |
|  |  |

### 2.1.15 NR-NTN (WI code: NR\_NTN\_enh)

|  |  |
| --- | --- |
| **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** |
|  |  |
|  |  |
|  |  |

### 2.1.16 IoT-NTN (WI code: IoT\_NTN\_enh)

|  |  |
| --- | --- |
| **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** |
|  |  |
|  |  |
|  |  |

### 2.1.17 TEI (WI code: TEI18)

|  |  |
| --- | --- |
| **Please see [5] for information provided by Moderator of this TEI.**  **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** |
|  |  |
|  |  |
|  |  |

## 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_112b-e/Inbox/drafts/9.18(Other)/%5B112b-e-R18-RRC%5D/Draft%20LS). Please provide your comments, if any, on the **latest version of draft LS**.

|  |  |
| --- | --- |
| **Company** | **Comment** |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

## 2.3 Improve RRC parameters preparation activity

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!

|  |  |
| --- | --- |
| **Company** | **Comment** |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

# 3 Conclusion

TBD

# 4 References

1. R1-2303292 Discussion on the higher layer parameters for NCR; Rapporteur (ZTE)
2. R1-2303765 Initial higher layer parameter list for Rel18 DSS Enhancements WI; WI Rapporteur (Ericsson)
3. R1-2303739 Draft RAN1 higher layer parameters list for Rel-18 Multi-carrier enhancements for NR; NTT DOCOMO, INC.
4. R1-2303383 Preliminary Higher Layer Parameters list for BWP Without Restriction for Rel-18 NR; Vodafone Italia SpA, vivo
5. R1-2303284 On the agreed TEI proposal of 1-symbol PRS; ZTE
6. R1-2202913 Recommendations for RAN1 RRC Parameter Preparation; Moderator (Ericsson)

# 5 Appendix

The following WoW is based on the approach used in Rel-17 for coordination to prepare the RRC parameter list. The examples below are based on activities during **RAN1#112bis-e.** The same approach is going to be used in RAN1 meetings in Rel-18.

The description below is structured as the following:

* First, the structure of the folders are explained.
* Then, WoW procedures are explained in three steps.
* Finally, the instructions for updating the list at each step are explained at the end.

## 5.1 Folders Structure

The following folders are created under draft folder created in RAN1#112bis-e:

|  |
| --- |
| * **9.18 (Other)**   + **[112b-e-R18-RRC]**      - **Information and Instructions**     - **Collection of RRC parameters**     - **Draft LS**     - **Final output**     - **ForRapporteursUseOnly**       * **[112b-e-R18-RRC-NCR]**       * **[112b-e-R18-RRC-eDSS]**       * **[112b-e-R18-RRC-MCE]**       * **[112b-e-R18-RRC-BWPwoRestriction]**       * **[112b-e-R18-RRC-TEI]** |

The following folders are updated only by Over-all Rel-18 RRC moderator (e.g., [112bis-e-R18-RRC-01] (Ericsson (Sorour)).

* **Information and Instructions**
  + This folder includes this document. As well as information about WI and Rapporteurs, and the template for RRC list.
* **Collection of RRC parameters**
  + This folder is used to update and share the updated overall RRC parameter list.
* **Draft LS**
  + This folder is used for sharing and reviewing the draft LS.
* **Final output**
  + This folder is used to share the submitted tdocs as the outcome for this meeting.

The following folder is updated **only** by WI Rapporteur/Moderator for updating the RRC parameter list. A folder is dedicated to each WI Rapporteur/Moderator.

* **ForRapporteursUseOnly**
  + **[112b-e-R18-RRC-NCR]**
  + **[112b-e-R18-RRC-eDSS]**
  + **[112b-e-R18-RRC-MCE]**
  + **[112b-e-R18-RRC-BWPwoRestriction]**
  + **[112b-e-R18-RRC-TEI]**
  + **….**

The Main folder will be used for delegates’ review of the Consolidated higher layer parameters.

* **[112b-e-R18-RRC]**
  + The Summary document for review will be provided **in this folder** to facilitate exchange views and discussions.

## 5.2 Procedures for updating the RRC list

The procedures include three steps as explained below, using the instructions for marking stable/unstable and using color-coding in the next section.

### 5.2.1 Initial step (Initial RRC list to kick-out activity):

* An Excel sheet with v000 in Collection of RRC parameters is provided by Sorour.
  + For example: draft\_Rel-18\_higher\_layer\_parameters\_list\_v000.xls
  + Note: In case of revision, Sorour announces the latest version to be used.
* The WI Rapporteur uses V000 (or later revision if announced) and applies the updates in the RRC parameter list, if any.
* The WI Rapporteur uses the updated RRC parameter list for submission to the meeting.
* The WI Rapporteur uploads the submitted RRC parameter list in the respective WI RRC folder as V000.
* For convenience, please include the corresponding label for the WI in Excel sheet.
  + For example: higher\_layer\_parameters\_NCR\_v000.xls in folder [112b-e-R18-RRC-NCR]
* Note: Please see the instructions in section 5.3 for how to mark stable/unstable and use color-coding.

### 5.2.2 Intermediate step (Update and review process of RRC list):

* Review per WI phase:
  + The WI Rapporteur has full freedom to use the dedicated WI folder for any update of the corresponding RRC parameter list based on the discussion during the meeting.
* Over-all review phase:
  + The WI Rapporteur informs Sorour the files that Sorour can use to update the existing file in Collection of RRC parameters to the next version.
    - For example: higher\_layer\_parameters\_NCR\_v015.xls
  + Sorour updates the overall RRC parameter list with the updates received from the WI Rapporteurs and kicks off the over-all RRC list review.
    - For example: draft\_higher\_layer\_parameters\_v001.xls
* All delegates can review and further updates are applied to the list, if needed using [112b-e-R18-RRC] folder.
  + The WI Rapporteur can provide additional updates if needed during this step, for example based on the comments received during the review process.
    - The WI Rapporteur can use the dedicated folder, similarly to Intermediate Step, and inform Sorour on the needed updates. The best way is to create a new version that can REPLACE the old version.
    - Note: It is crucial that Sorour and WI Rapporteurs coordinate tightly to remain in sync and avoid any inconsistently in the list.
  + Note: Sorour consults WI Rapporteur to apply technical changes.
* Note: Please see the instructions in section 5.3 for how to mark stable/unstable and use color-coding.

### 5.2.3 Final step (LS and backlog RRC list):

* When the review is completed, Sorour uses the latest version in Collection of RRC parameters.
  + For example: draft\_higher\_layer\_parameters\_v005.xls
* Sorour provides two files of the latest RRC parameter list:
  + **Backlog-list:**
    - This list, includes the entries in ALL rows and will be submitted to RAN1 as backlog.
    - For example: Backlog-list = draft\_higher\_layer\_parameters\_v005.xls
  + **Output-list:** 
    - This list, includes only entries in rows that are STABLE and can be sent to RAN2/RAN3. If this list is endorsed by Chair, a draft LS in Draft LS folder is prepared by Sorour to be reviewed for sending the RRC list to RAN2/RAN3.
  + Note: Output-list is sub-set of Backlog-list. Output-list is RAN1 official output. Backlog-list is RAN1 backlog for continuation of work, if needed.
* **Sorour submits the following from Final Output folder:**
  + LS including Output-list (Official output to RAN2/RAN3)
  + Backlog-list (For RAN1 use only)
  + Summary of discussion (For information)
* This Backlog-list is used in the next meeting as “The Excel sheet with v000 in Collection of RRC parameters to be provided by Sorour” for the Initial Step.
* Note: Please see the instructions in section 5.3 for how to mark stable/unstable and use color-coding.

## 5.3 Instructions for updating the entries in the RRC list:

The description below is based on the approach used in Rel-17 is used for coordination and regular update of RRC parameter list:

**Important note:** Please consider the Recommendation guidelines provided in [R1-2202913](http://3gpp.org/ftp/tsg_ran/WG1_RL1/TSGR1_108-e/Docs/R1-2202913.zip).

It is beneficial to consider only stable (not necessarily complete) RRC parameters in the LS to RAN2/RAN3 (please see motivations in [R1-2202913](http://3gpp.org/ftp/tsg_ran/WG1_RL1/TSGR1_108-e/Docs/R1-2202913.zip)). The remaining RRC parameters can be discussed further in RAN1 at the next meetings to be included in the earliest LS to RAN2/RAN3, when identified as stable.

**Hence, the following stable/unstable marking approach is used similarly to Rel-17:**

### 5.3.1 How to mark Stable/Unstable

* For each sheet dedicated to a WI RRC parameter list, a column at the end of the list is included for “Status”. This column is used to identify whether the content of a row in the list is stable or not by using {stable, unstable}, respectively.
  + This column is for RAN1 information only and will not be included in the Output-list for LS to RAN2/RAN3.
* The Output-list for LS to RAN2/RAN3 includes Only the rows that are indicated as “stable”.
* The Backlog-list contains all rows and columns, including Rows indicated as unstable and the Status column, for discussion in next RAN1 meeting.
  + The unstable rows will be discussed further in RAN1 at the next meetings to be included in the earliest LS to RAN2/RAN3 when stable.

**Important note:** Proper color-coding is crucial to properly indicate to RAN2/RAN3 the changes in the list as compared to previous version. The basic principle is as the following:

When an LS is sent to RAN2/RAN3 using the Output-list:

* The updates in the Output-list as compared to the previous lists sent to RAN2/RAN3 are shown with **blue**.
* The unchanged part of the Output-list as compared to the previous lists sent to RAN2/RAN3 are shown with **black**.

**Hence, the following color-coding approach is used similarly to Rel-17:**

### 5.3.2 How to use color coding

* **In Initial step:**
  + Sorour: draft\_higher\_layer\_parameters\_v000.xls is based on Backlog-list from previous meeting, if any. Note that Backlog-list includes Output-list, if any.
    - All rows corresponding to Output-list in the previous LS if any, are shown in **black.**
    - The remaining rows are highlighted in yellow in **a colored font** (preferably **blue**). Note that **black is NOT** used.
  + WI Rapporteur (e.g. NCR): higher\_layer\_parameters\_NCR\_v000.xls
    - All rows corresponding to Output-list in the previous LS are shown in **black.**
    - The remaining rows are highlighted in yellow in **a colored font** (preferably **blue**). Note that **black is NOT** used.
* **In Intermediate step:**
  + Any text that was in Initial Step **black** and **remains unchanged**, is shown in **black.**
  + The remaining texts are shown in **a colored font** (preferably **blue**). Note that **black is NOT** used.
* **In Final Step:**
  + In Backlog-list, rows identified as stable, use only **black** and **blue** colors without yellow highlight.
    - Any font color except **black** is changed to **blue**.
  + Then, Output-list is prepared using only stable rows of Backlog-list, with removing the status column.