**3GPP TSG-RAN2 Meeting #117- e R2-22xxxxx**

**e-Meeting, xxx, 2022**

**Source: email discussion Rapporteur (ZTE Corporation)**

**Title: UP open issues list for common RACH (email: [POST116bis-e][514])**

**Agenda item:** **xxx**

**Document for:** **Discussion and Decision**

# Introduction

This document contains summary of open issues and proposed resolutions for UP aspects of Common RACH partitioning:

* [POST116bis-e][514][RA Part] UP open issues (ZTE)

Scope:

- List of critical open issues to be resolved for WI completion

- Updated CR 38.321 for information and review

NOTE: NO contributions on these critical open issues are expected

Deadline:

- Open issues list Jan. 28th

- Company inputs Feb. 15th

Proposed format for comments is as below:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| # | Description | Criticality  (Essential / Optional / Enhancement) | Company comments/Preference  Companies can use company ID and enter comment (see example) | Proposed resolution (to be updated by Rapporteur) |
| Zxxx | XXX is missing/wrong/open etc | Essential | ZTE: We think this is not needed  XXX: We agree with YYY etc | Rapp: Will be implemented in the next revision |

# Discussion

## Procedural open issues

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| # | Description | Criticality  (Essential / Optional / Enhancement) | Company comments/Preference | Proposed resolution (to be updated by Rapporteur) |
| Z001 | Align the parameter names between MAC and RRC specs | Essential |  | Rapp: To be done before/during next meeting (after the RRC CR is stable) |
|  |  |  |  |  |

## UP/MAC open issues

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| # | Description | Criticality  (Essential / Optional / Enhancement) | Company comments/Preference | Proposed resolution (to be updated by Rapporteur) |
| Z002 | What is the order of carrier selection and RACH partition selection  Options:   1. Carrier selection happens before RACH partition selection 2. RACH partition selection happens before carrier selection | Essential |  |  |
| Z003 | If RACH partition selection is performed after carrier selection, how to configure separate carrier selection threshold for CE and SDT etc? (e.g. should we undo these agreements or should we design something else?) | Essential |  |  |
| Z004 | How to capture RECAP BWP selection?  Options:   * In REDCAP CR * In Common RACH CR | Essential |  |  |
| Z005 | Can the rsrp-Threshold-Msg3Rep and RSRP threshold for SSB selection for CE be configured differently in different RACH partitions? If so, how to select the correct value (before selecting the RACH partition)? | Essential |  |  |
| Z006 | How to refer to the “legacy RACH partition”? Can we use the name of some RRC IE etc? | Essential |  | Propose to finalise this after the RRC structure is finalized. |
| Z007 | Is RACH partitioning applicable in dedicated BWP (i.e. RRC\_CONNECTED)? | Essential |  |  |
| Z008 | Is RACH partitioning applicable to CFRA? | Essential |  |  |
| Z009 | Is RACH partitioning applicable when CFRA fallsback to CBRA? How does the overall procedure look like in this case? | Essential |  |  |
| Z010 | Can we assume that there is default RACH resource without feature combination in REDCAP initial BWP, which is similar as the legacy RACH resource on legacy initial BWP and can be selected if there is no available RACH partition can be selected on the REDCAP initial BWP? (otherwise we may need to specify some BWP switching procedure for this case) | Essential |  |  |
| Z011 | Do we need to handle the issue of RNTI collision? I.e. which option is preferred?  Option 1: Do nothing (i.e. leave to network implementation)  Option 2: the network should be able to (optionally) configure a specific search space for RAR/MSGB monitoring per RACH resource partition  Option 3: Option 3: the network should be able to (optionally) configure a specific search space for RAR/MSGB monitoring per RACH resource partition (as was already agreed anyway for some features – e.g. SDT) | Optimisation | [Huawei] We think this is essential to address this issue. With all the RACH partitions that we may now have, it is impossible for the network to deal with this by implementation and a solution is needed if RACH efficiency is to be kept. We propose not to rediscuss other solution, but focus on Option 2, which is simple and straightforward.  [Rapp] Agree with the comment above. But since option 1 seems to be on the table still, it seems it is an optimisation (at least according to some companies). So, marked it as optimisaiton for now. |  |
| Q001 | What is the rule for UE to select BWP when RACH is triggered in a dedicated BWP? E.g. UE performs RACH in the current BWP as long as it is eligible to use at least one RACH partition configured in that BWP or something else? | Essential | [Rapp] see also Z007 |  |
| ~~S001~~ | ~~Do we need to handle the issue of RNTI collision? I.e. which option is preferred?~~  ~~Option 1: Do nothing (i.e. leave to network implementation)~~  ~~Option 2: A custom offset, signalled through RRC and associated to each PRACH configuration, is added in the formula for RA-RNTI and/or MSGB-RNTI. The legacy PRACH configuration it is assumed to have offset = 0.~~  ~~Option 3: the network should be able to (optionally) configure a specific search space for RAR/MSGB monitoring per RACH resource partition (as was already agreed anyway for some features – e.g. SDT)~~ | ~~Optional~~ | [Rapp] deleted this since this did not attract much support. But since we did not conclude at the last meeting, I am okay to add it back as an option. Let us discusss it as part of Z011 though (I added this as an option again). |  |
| H001 | The RSRP threshold for selecting CE or non-CE can be configured differently on NUL and SUL. If RACH partition is selected before carrier selection, which threshold should UE use to perform CE/ non-CE selection? | Essential | The current agreement to treat CE as part of feature combination brings issues to CE design. We can either revert this decision or the overall design will actually get more complicated instead of being less complicated (e.g. if we start treating carrier as part of feature combination as well). This is especially true if we would also decide to perform carrier selection before RACH partition selection – in this case it would be impossible to have even feature specific carrier selection threshold. |  |

# Conclusion and proposals

# References

1. R2-2201664, Report for Rel-17 Small data, URLLC/IIoT and RACH partitioning

# Annex (contact details for email discussions)

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