**3GPP TSG-RAN WG2 Meeting #113-e R2-210xxxx**

**Electronic, 25 January – 5 February 2021**

**Agenda item: 6.11.3**

**Source: Ericsson (Rapporteur)**

**Title: Report of [AT113-e][504][2sRA] CRs on 2sRA Control Plane (Ericsson)**

**Document for: Discussion and decision**

# Introduction

The Session Chair decided to use the following email discussion to gather feedback and put forward suggestions for the CRs and papers submitted to the Rel-16 2-Step RA agenda item.

**[AT113-e][504][2sRA] CRs on 2sRA Control Plane (Ericsson)**

**Scope:**

* + - Discuss submitted CRs in the CP AI. Rapporteur will do preliminary assessment on criticality and need to have the CRs and companies can provide their views.

**Intended outcome:**

* + - Agreeable CRs

**Deadline for providing comments:**

* + - Companies comments/text suggestions and on need/criticality of the CRs– Jan. 20th
    - Rapporteur to make suggestions on which CRs should be pursued further and any possible merges – Jan. 21st
    - Updated CRs (the ones agreed to be pursued) from responsible companies Jan. 22nd

|  |  |
| --- | --- |
| Company | Contact Name, Email |
|  |  |
| Samsung | [anilag@samsung.com](mailto:anilag@samsung.com) |
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| Qualcomm  Xiami | [rzheng@qti.qualcomm.com](mailto:rzheng@qti.qualcomm.com)  wuyumin@xiaomi.com |

# Discussion

In this section, we discuss each document submitted to Agenda Item 6.11.3, which are as follows:

[R2-2101059](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_113-e/Docs/R2-2101059.zip)Corrections to conditions for 2-step RA Lenovo, Motorola Mobility

[R2-2101165](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_113-e/Docs/R2-2101165.zip) Correction for 2-step CFRA ZTE Corporation, Sanechips

[R2-2101812](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_113-e/Docs/R2-2101812.zip) Correction on C-RNTI replacement for 2-step RA Huawei, HiSilicon

**Corrections to conditions for 2-step RA Lenovo, Motorola Mobility**

Summary of Changes from the CR:

1. IE MsgA-PUSCH-Config: in the description of msgA-HoppingBits-r16 the condition has been moved to a real condition and in ASN.1 the Need code “Need R” for msgA-HoppingBits-r16 has been replaced by “Cond FreqHopConfigured”.
2. In IE RACH-ConfigCommonTwoStepRA and IE RACH-ConfigGenericTwoStepRA the description of condition “2StepOnly” has been completed by adding “optionally present, Need S”.
3. A number of editorial issues have been fixed (by adding missing “TS”, correcting field names, etc.).

Rapporteur opinion: The CR proposes some useful editorial corrections although not essential and can be subject to merging. The addition of a condition may have more impact to implementations although it does not constitute as a functional change.

**Do you agree with the changes proposed in this CR?**

|  |  |  |
| --- | --- | --- |
| **Company** | **Response** | **Comments** |
| Samsung |  | Agree with Rapporteur |
| Nokia, Nokia Shanghai Bell | Y |  |
| ZTE | Y | Agree with Rapporteur |
| Intel | Y, but | Agree with Rapporteur |
| OPPO | Y |  |
| HW | N | Not essential |
| Qualcomm | Y | Agree with Rapporteur |
| Xiaomi | Y |  |
| LG | Y |  |

**Summary:**

**Proposal:**

**R2-2101165 Correction for 2-step CFRA ZTE Corporation, Sanechips**

Summary of Changes from the CR:

1. Add “release dedicated msgA PUSCH resources provided in rach-ConfigDedicated, if configured” under the case that T304 of the SCG expires in 5.3.5.8.3.

Rapporteur opinion: The CR is useful as it corrects the discrepancy in SCG reconfiguration with sync failure as compared to the release of MCG MSGA PUSCH resources.

**Do you agree with the changes proposed in this CR?**

|  |  |  |
| --- | --- | --- |
| **Company** | **Response** | **Comments** |
| Samsung | Agree |  |
| Nokia, Nokia Shanghai Bell |  | To our understanding, so far, we did not agree the usage of 2-step CFRA for anything else than HO. |
| ZTE | Agree  (CR author) | To Nokia: so, we need to clarify what HO means given that the signalling in stage3 applies this for reconfigurationWithSync (which is the case in both MAC and RRC).  If companies want to restrict this only for PCell change, then we need a (artificial) restriction in RRC to say that this is only for PCell change case. e.g is like below (if such restriction is not added, then we need change as proposed in this CR).   |  | | --- | | *RACH-ConfigDedicated* field descriptions | | ***cfra***  Parameters for contention free random access to a given target cell. If this field and *cfra-TwoStep* are absent, the UE performs contention based random access. | | ***cfra-TwoStep***  Parameters for contention free 2-step random access type to a given target cell. Network ensures that *cfra* and *cfra-TwoStep* are not configured at the same time. If this field and *cfra* are absent, the UE performs contention based random access. This field may only be present if *msgA-ConfigCommon* is configured on the BWP. The network only configures this for PCell change. | | ***ra-prioritization***  Parameters which apply for prioritized random access procedure to a given target cell (see TS 38.321 [3], clause 5.1.1). | | ***ra-PrioritizationTwoStep***  Parameters which apply for prioritized 2-step random access type procedure to a given target cell (see TS 38.321 [3], clause 5.1.1). The network only configures this for PCell change. | |
| Intel |  | I think we only allow 2-step RACH for handover. For example, the following is from the MAC spec:  2> if the Random Access procedure was initiated for handover; and  2> if *rach-ConfigDedicated* is configured for the selected carrier: |
| OPPO | No | CFRA 2-step RACH only applies to HO case as agreed, which might be further clarified in RRC. |
| HW | No | 2-step CFRA is not allowed to other cases than HO, and it has been reflected in both Stage-2 and MAC spec. |
| Qualcomm | No |  |
| Xiaomi | No | 2-step CFRA is only for HO. |
| LG | No |  |

**Summary:**

**Proposal:**

**M Correction on C-RNTI replacement for 2-step RA Huawei, HiSilicon**

Summary of Changes from the CR:

In clause 5.3.8, update descriptions on the C-RNTI replacement for 2-step RA.

Rapporteur opinion: A corrections seems to be needed in Rel-16 to avoid Integrity verification failure at the reception of successRAR. However, the proposed change impacts legacy as existing procedure use of “Temporary RNTI” terminology is replaced by a generic reference to 38.321. This should be avoided and an alternative correction, e.g. 2-step RA specific Rel-16 addition is preferred.

Rapporteur suggested alternative correction:

4> replace the C-RNTI with the temporary C-RNTI or C-RNTI (see TS 38.321[3]) in the cell the UE has received the RRCRelease message;

**Do you agree with the issue and that a change is needed as described in this CR? If so, what is your suggested correction in Rel-16 if other than above?**

|  |  |  |
| --- | --- | --- |
| **Company** | **Response** | **Comments** |
| Samsung | Agree with comments | Prefer text change proposed by Rapporteur |
| Nokia, Nokia Shanghai Bell | Y | It seems the legacy text is similarly wrong as TC-RNTI has already been promoted to C-RNTI before the RRC processing. The TC-RNTI is promoted upon receival of contention resolution which is the earliest message that can include the RRCRelease message. This should be also corrected in Rel-15.  We could use storing instead of replacing:  4> store the C-RNTI (see TS 38.321 [3]). |
| ZTE | Y | Although the change could be correct if implemented from Rel-15 as noted by Nokia, it seems the existing text (i.e. temporary C-RNTI) will not result in any problem until Rel-16 (since both T C-RNTI and C-RNTI of the cell will eventually be the same at this point in Rel-15). So, a change from Rel-16 is sufficient in our view.  We could perhaps simplify the wording as follows (no strong view on exact wording though):  4> replace the C-RNTI with the C-RNTI used in the cell the UE has received the *RRCRelease* message (see TS 38.321 [3]); |
| Intel | Agree | Update is needed, still think the rapporteur’s suggestion is preferred so that the legacy text is not touched. But no strong view. |
| OPPO | Change is needed | Seems ZTE’s wording is proper. |
| HW | Y | We would prefer the original wording from HW since Temporary C-RNTI is only maintained by the MAC entity during RA procedure. With the additional wording on the “C-RNTI maintained in the MAC entity”, it would be a good echo in RRC spec which makes the sentence logically correct. But we are also okay with the simplified wording from ZTE as long as it is clear to all. |
| Qualcomm | Y with comments | Prefer the text change from Rapporteur. |
| Xiaomi | Y with changes | We slightly prefer ZTE’s wording. |
| LG | Y | Prefer the rapporteur’s text change. |

**Summary:**

**Proposal:**

# Conclusion

This report captures the feedback for the Control Plane contributions submitted for 2-step RA and, based on feedback from the companies, the following are proposed: