3GPP TSG-RAN WG2 #112-e R2-20xxxxx

Electronic Meeting, 2nd – 13th November 2020

Agenda Item: 5.4.1.1

Source: ZTE Corporation

Title: [AT112-e][006][NR15] RRC Conn Control II (ZTE)

Document for: Discussion, Decision

# 1 Introduction

This document is to kick off the following email discussion:

* [AT112-e][006][NR15] RRC Conn Control II (ZTE)

Treat R2-2009580, R2-2009581, R2-20094~~5~~79, R2-2009697, R2-2009233, R2-2009234, R2-2009235, R2-2009698, R2-2009699, R2-2010492, R2-2010584, R2-2009236, R2-2009237, R2-2009582, R2-2009583, R2-2009478

Intended outcome: Intermediate: Determine agreeable parts. Final: For agreeable parts, agreed CRs.

Deadline: Intermediate deadline(s) by Rapporteur, Final: Discussion stop at Wed Nov 11, 1200 UTC

* Phase 1: collect companies’ view, by Friday 2020-11-06 12:00 UTC
* Phase 2: rapporteur will share summary report and TP based on input of phase 1 for review, by Monday 2020-11-11 12:00 UTC

Following the Guidelines of the chairman: “*For specific corrections when needed it may be valid to discuss whether to make such correction instead only for Rel-16. When/if applicable, email discussions shall determine Release applicablity for such corrections.*”

# Contact Information

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| Company | Email |
| Ericsson (Tony) | antonino.orsino@ericsson.com |
| MediaTek | Chun-Fan.Tsai@mediatek.com |
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# Discussion

Companies are requested to add their comments for each of the treated CRs of this email discussion in the boxes below (one for each CR to be treated).

## Correction on rach-ConfigDedicated

[R2-2009580](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_112-e\Docs\R2-2009580.zip) Correction on rach-ConfigDedicated ZTE Corporation, Sanechips CR Rel-15 38.331 15.11.0 2092 - F NR\_newRAT-Core

[R2-2009581](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_112-e\Docs\R2-2009581.zip) Correction on rach-ConfigDedicated(R16) ZTE Corporation, Sanechips CR Rel-16 38.331 16.2.0 2093 - A NR\_newRAT-Core

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| Company | Agree?  (Yes or No) | Comments |
| Nokia | Yes | Corrections do make sense. We support them. |
| Ericsson (Tony) | No | We think the CR is not needed. Our understanding is that this is probably a corner case and a smart network implementation can avoid it. Further, we agree in principle with the intention, but we think that there is no need for overclarifications of something that may be obvious. |
| MediaTek | Yes | Maybe it is easier to just remove the “in the *firstActiveUplinkBWP*”? Not sure why we have to emphasize this. |
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## Clarification on SCell RACH configuration

[R2-2009479](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_112-e\Docs\R2-2009479.zip) Clarification on the SCell RACH configuration Apple CR Rel-16 38.331 16.2.0 2183 - F NR\_newRAT-Core, TEI16

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| Company | Agree?  (Yes or No) | Comments |
| Nokia | No | No, why it would be restricted to configure such information? We should leave it up to the network. |
| MediaTek | Yes | We think that it is useful clarification and should be started from Rel-15 (if agreed). |
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## Clarification on RRC Reestablishment procedure

[R2-2009697](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_112-e\Docs\R2-2009697.zip) Clarification on RRC Reestablishment procedure Ericsson discussion Rel-15 NR\_newRAT-Core

In above contribution, it clarifies whether the first *RRCReconfiguration* message is required to re-configure SRB1. And whether the first *RRCReconfiguration* message after re-establishment needs to contain the *srb-Identity* value in the *srb-ToAddModList* for SRB1.

In the case of *fullConfig*, the UE is required to release/clear all current dedicated radio configurations. However, the NOTE 1 in TS 38.331 clearly says that the radio configuration does not include SRB1/SRB2 configurations i.e. SRB1 is not released. Moreover, when the text refers to the addition of an SRB, it says in NOTE 2 of TS 38.331 that this is to get the SRB2 for reconfiguration after re-establishment to a known state from which the reconfiguration message can do further configuration.

In the case of delta configuration, the srb-*ToAddModList* is OPTIONAL and is defined by the following condition *“-- Cond HO-Conn*” which says that the field is only mandatory when the *fullConfig* flag is included in the *RRCReconfiguration* message (but only for SRB2, as described above) and in *RRCSetup* for SRB1. In other words, SRB1 configuration is not required in the first *RRCReconfiguration* message after re-establishment.

**Proposal 1 RAN2 to confirm that SRB1 configuration is not required in the first RRCReconfiguration message after re-establishment in the case of fullConfig.**

**Proposal 2 RAN2 to confirm that SRB1 configuration is not required in the first RRCReconfiguration message after re-establishment in the case of delta signalling.**

**Question: Do companies agree with above Proposal 1 and Proposal 2?**

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| Company | Agree?  (Yes or No) | Comments |
| Nokia | Yes | Agree to both P1 and P2. |
| Ericsson (Tony) | Yes (Proponent) | Our intention here is to clarify the network actions (and what the UE expects) during the RRC re-establishment procedure. Our understanding is that, upon re-establishment, the UE setup the SRB1 with the default configuration and, for this reason, the network does not need to signaling (again) an SRB1 configuration in the first RRCReconfiguration message after re-establishment, unless the dafault SRB1 need to be changed/reconfigured. |
| MediaTek | Yes |  |
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In addition, it further clarifies whether PDCP and RLC needs to be re-established in the first RRCReconfiguration after re-establishment. The field description of reestablishPDCP and reestablishRLC are copied/pasted as below:

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| ***SRB-ToAddMod* field descriptions** |
| ***[…]*** |
| ***reestablishPDCP***  Indicates that PDCP should be re-established. Network sets this to *true* whenever the security key used for this radio bearer changes. Key change could for example be due to reconfiguration with sync, for SRB2 when resuming an RRC connection, or at the first reconfiguration after RRC connection reestablishment in NR. For LTE SRBs using NR PDCP, it could be for handover, RRC connection reestablishment or resume. Network doesn't include this field if any DAPS bearer is configured. |

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| ***RLC-BearerConfig* field descriptions** |
| ***[…]*** |
| ***reestablishRLC***  Indicates that RLC should be re-established. Network sets this to *true* at least whenever the security key used for the radio bearer associated with this RLC entity changes. For SRB2 and DRBs, it is also set to *true* during the resumption of the RRC connection or the first reconfiguration after reestablishment. |

As mentioned in the contribution, it should be clear that a key change does not necessarily happen at the first reconfiguration after RRC connection reestablishment in NR, but it happens before i.e. upon reception of the *RRCReestablishment* message. So the field description makes the requirement not clear, and leading to different interpretations.

**Proposal 3 If SRB1 is included in the first RRCReconfiguration after re-establishment, RAN2 to clarify whether reestablishPDCP is required to be set to true for SRB1.**

**Proposal 4 If SRB1 is included in the first RRCReconfiguration after re-establishment, RAN2 to clarify whether reestablishRLC is required to be set to true for SRB1.**

**Question: Companies are invited to express your opinion on Proposal 3 & Proposal 4? (i.e. whether reestablishPDCP or reestablishRLC are required to be set to true? )**

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| --- | --- | --- |
| Company | Required? or  Not required? | Comments |
| Nokia |  | See answer to P1 and P2 |
| Ericsson (Tony) | Not required (Proponent) | Similar to the previous comment, in current RRC specification the UE is requested to refresh the security already when receiving an RRCReestablishment by the network. According to this, our understanding ist hat the network is not requested to set the reestablishPDCP and reestablishRLC flags to *true* in the first RRCReconfiguration message after re-establishment.  This is would require the UE to unnecessary perform two consecutive security refreshes that are not needed. |
| MediaTek | Not required | The SRB1 has be re-established while initializing the re-establishment procedure. For 1st reconfiguration after reestablishment, it is not a must to re-establish again. |
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**Proposal 5 If network is not required to set reestablishPDCP and reestablishRLC to true, RAN2 to agree on the TP presented in Section 3.**

**Question: If you think network is not required to set reestablishPDCP and reestablishRLC to true, then any comments to the draft TP presented in section 3?**

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| --- | --- | --- |
| Company | Agree?  (Yes or No) | Comments |
| Nokia |  | See answer to P1 and P2 |
| Ericsson (Tony) | Yes (Proponent) | In our CR we just reused the teminology already in the field description for the SRB2, but we are open to suggestions for rewording or changes. |
| MediaTek | Yes | Thinking that it is already current behavior but fine to clarify if majorities prefer to have this. |
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## Clarify UE behaviour on Need S Need R fields

[R2-2009233](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_112-e\Docs\R2-2009233.zip) Clarify UE behaviour on Need S Need R fields ZTE Corporation, Sanechips discussion Rel-15 NR\_newRAT-Core

The above contribution discussed the ambiguity issue of scramblingID related fields. Based on current TS38.331, these fields are defined as Need R or Need S with default values. So UE will apply PCI when the field is not signalled in RRC message. However, during handove procedure, if network does not include the parent field (Need M) for delta configuration, it is unclear which value will be applied by UE for the child field.

For instance, the below “hoppingId” field, if network first sends RRCReconfiguration by not including hoppingId, the UE is supposed to apply the PCI of serving cell based on RAN1 spec. Then during handover procedure, if the target cell does not include PUCCH-ConfigCommon field (Need M) in handover command, for hoppingId field, will UE continue use source PCI? or the UE assumes the hoppingId field is still absent, and then applies the default value, e.g. PCI of target cell?

PUCCH-ConfigCommon ::= SEQUENCE {

pucch-ResourceCommon INTEGER (0..15) OPTIONAL, -- Cond InitialBWP-Only

pucch-GroupHopping ENUMERATED { neither, enable, disable },

hoppingId INTEGER (0..1023) OPTIONAL, -- Need R

p0-nominal INTEGER (-202..24) OPTIONAL, -- Need R

...

}

In order to support delta configuration for the parent field. In R2-2009233, it is proposed to clarify the UE shall assume the field is still absent, and then applies the default value after handover.

**Proposal 1: For the scramblingID related fields (e.g. defined as Need S or Need R with default values), in case the network does not signal the field before, during RRC reconfiguration, the UE shall assume the field is still absent if the parent field (Need M) is not included.**

**Question: Do companies agree with the clarification in Proposal1? (If no, please provide your comments?)**

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| Company | Agree?  (Yes or No) | Comments |
| Nokia | No | This is literally about how need codes are defined - if the parent is absent and Need M, nothing changes in the interpretation of the child fields. In this case, the Need R field is treated as being absent if it was before and Need S field refers to the current cell's PCI.  We don't think there's anything to correct in RRC for this, though. |
| MediaTek | No | The proposal 1 itself is unclear and does not really match the scenario (i.e. handover) describe by the CR context. The current ASN.1 guide clearly saying that the UE does not automatic release or reconfigure a child field while the parent file is absent.  And it unclear to me what is the UE behavior to “*assume the field is still absent*”, there is no new configuration on the field at all so of course it still absent.  For this particular case, the UE still apply the “default value” for the child field (*hoppingId*) after handover. The default value is changed due to handover but it is still default. We could clarify in the field description of *hoppingId* if really necessary. We think it should be already clear in current RAN1 SPEC that the default value is “current” serving cell PCID. |
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[R2-2009234](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_112-e\Docs\R2-2009234.zip) CR to clarify UE behaviour on Need S Need R fields ZTE Corporation, Sanechips CR Rel-15 38.331 15.11.0 2044 - F NR\_newRAT-Core

[R2-2009235](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_112-e\Docs\R2-2009235.zip) CR to clarify UE behaviour on Need S Need R fields ZTE Corporation, Sanechips CR Rel-16 38.331 16.2.0 2045 - A NR\_newRAT-Core

**Question: If the answer to above question is “Yes”, do you have any comments to the Rel15/16 CRs?**

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| Company | Agree?  (Yes or No) | Comments |
| Nokia | No | While the proposed change would be correct, it's already covered so we don't think the CR is needed. We would like to know if this was truly about IOT, and if UE it is that is malfunctioning.  So please provide some more background information about this. |
| MediaTek | No | As comment in previous one, we think that the original guide in ASN.1 is clear enough. The newly added sentence is difficult to understand. |
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## SUL terminology

[R2-2009698](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_112-e\Docs\R2-2009698.zip) Correction on terminology for when the UE is configured with SUL Ericsson CR Rel-15 38.331 15.11.0 2105 - F NR\_newRAT-Core

[R2-2009699](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_112-e\Docs\R2-2009699.zip) Correction on terminology for when the UE is configured with SUL Ericsson CR Rel-16 38.331 16.2.0 2106 - F NR\_newRAT-Core

[R2-2010492](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_112-e\Docs\R2-2010492.zip) Clarification on the terminology ‘serving cell is configured with a supplementary uplink’ Fujitsu discussion Rel-16 NR\_newRAT-Core

[R2-2010584](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_112-e\Docs\R2-2010584.zip) Clarification on the terminology ‘serving cell is configured with a supplementary uplink’ Fujitsu CR Rel-16 38.331 16.2.0 1772 1 F NR\_newRAT-Core R2-2007020

There are four contributions clarifing the terminology “when the UE is configured with SUL”, and “serving cell is configured with a supplementary uplink” in TS 38.331. In general, rapporteur thinks the motivations are the same.

Although [R2-2010584](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_112-e\Docs\R2-2010584.zip) is a Rel-16 CR, it is clarified in R2-2010492 that the 2nd change is also applied for Rel-15 specification. While, in [R2-2009698](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_112-e\Docs\R2-2009698.zip), it also includes other changes. Comparing the two set of CRs. For Rel-15 overlapping part, the main difference is:

--Modification on ***SI-SchedulingInfo*** in [R2-2009698](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_112-e\Docs\R2-2009698.zip):

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| --- | --- |
| *SUL-MSG-1* | The field is optionally present, Need R, if *supplementaryUplink* is configured in *ServingCellConfigCommonSIB*and if *si-BroadcastStatus* is set to *notBroadcasting* for any SI-message included in *SchedulingInfo*. It is absent otherwise. |

--Modification on ***SI-SchedulingInfo*** in [R2-2010584](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_112-e\Docs\R2-2010584.zip):

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| *SUL-MSG-1* | The field is optionally present, Need R, if *supplementaryUplink* is present in *servingCellConfigCommon* and if si-BroadcastStatus is set to *notBroadcasting* for any SI-message included in *SchedulingInfo*. It is absent otherwise. |

Similarly, for Rel-16 overlapping part in [R2-2009699](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_112-e\Docs\R2-2009699.zip) and [R2-2010584](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_112-e\Docs\R2-2010584.zip), the main difference is:

--Modification on ***PosSI-SchedulingInfo*** in [R2-2009699](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_112-e\Docs\R2-2009699.zip):

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| --- | --- |
| *SUL-MSG-1* | The field is optionally present, Need R, if *supplementaryUplink* is configured in *ServingCellConfigCommonSIB* and if *posSI-BroadcastStatus* is set to *notBroadcasting* for any SI-message included in *PosSchedulingInfo*. It is absent otherwise. |

--Modification on ***PosSI-SchedulingInfo*** in [R2-2010584](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_112-e\Docs\R2-2010584.zip):

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| --- | --- |
| *SUL-MSG-1* | The field is optionally present, Need R, if *supplementaryUplink* is present in *servingCellConfigCommon* and if *posSI-BroadcastStatus* is set to *notBroadcasting* for any SI-message included in *PosSchedulingInfo*. It is absent otherwise. |

As we can see, one refers to the field name, the other refers the name of IE definition. Companies are invited to show your preference to above two versions.

**Question: For the modification on SI-SchedulingInfo and PosSI-SchedulingInfo, which version do you prefer? (use ServingCellConfigCommonSIB, or servingCellConfigCommon)**

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| Company | Preferred name | Comments |
| Nokia | None | We don’t see the need to really clarify which is which as the cases for both EN-DC and NR SA use the different fields. Even without the naming the current specification is already clear.  For the editorial parts where the field description has to be referred, we would recommend moving this to rapporteur miscellaneous corrections. |
| Ericsson (Tony) | ServingCellConfigCommonSIB | The main reason why we decided to use ServingCellConfigCommonSIB is because we have a “field” and an “IE” that are called (s)ServingCellConfigCommon and the only difference is the capital letter at the beginning.  The main problem with (s)ServingCellConfigCommon is that the two name are referring to two different field/IEs and this may cause more confusion.  In fact, sevingCellConfigCommon if pointing to ServingCellConfigCommonSIB:  SIB1 ::= SEQUENCE {  [...]  servingCellConfigCommon ServingCellConfigCommonSIB OPTIONAL, -- Need R  But the fields that are pointing to ServingCellConfigCommon are called spCellConfigCommon and sCellConfigCommon.  ReconfigurationWithSync ::= SEQUENCE {  spCellConfigCommon ServingCellConfigCommon OPTIONAL, -- Need M  [...]  SCellConfig ::= SEQUENCE {  [...]  sCellConfigCommon ServingCellConfigCommon OPTIONAL, -- Cond SCellAdd  On top of this, in multiple parts of the specification we already refer to the IEs for the ServingCellConfigCommonSIB and ServingCellConfigCommon and we would like to align the terminology also here. |
| MediaTek | Prefer the name in Ericsson CR |  |
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**Question: Any comments to the other changes in R2-2009698/9699?**

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| Company | Agree?  (Yes or No) | Comments |
| Nokia | None | We don’t see the need to really clarify which is which as the cases for both EN-DC and NR SA use the different fields. Even without the naming the current specification is already clear.  For the editorial parts where the field description has to be referred, we would recommend moving this to rapporteur miscellaneous corrections. |
| Ericsson (Tony) | Yes (Proponent) | In our CR we just used the same teminology that is present in other parts of the specifications by we are open to suggestion of how to solve this possible conflict in the terminology for SUL. |
| MediaTek | Agree with comment | First we actually think it is not critical but fine to clarify this.  If we agree to clarify, we prefer to start from R15.  The CR from Ericsson is general ok with the following suggestion: Change in *PUSCH-TPC-CommandConfig* 🡪 Should use IE name *ServingCellConfig* (capital S) R15 Coversheet: should remove 6.3.1a in affected clauses |
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## Clarify smtc field in SCell addition w/o SSB

[R2-2009236](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_112-e\Docs\R2-2009236.zip) CR to clarify smtc field in case of SCell addition ZTE Corporation, Sanechips CR Rel-15 38.331 15.11.0 2046 - F NR\_newRAT-Core

[R2-2009237](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_112-e\Docs\R2-2009237.zip) CR to clarify smtc field in case of SCell addition ZTE Corporation, Sanechips CR Rel-16 38.331 16.2.0 2047 - A NR\_newRAT-Core

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| Company | Agree?  (Yes or No) | Comments |
| Nokia | Yes | This looks logical to us i.e. not to signal SMTC for Scell not having SSB. |
| MediaTek | No | The smtc field is optional and we also understand that the NW does not provide this for SCell without SSB. The UE should still try to find the SCell even without the smtc configuration (even it cannot find SMTC in MO, it still a valid configuration). The NW is not mandated to provide the smtc based on current SPEC. We think that the CR is not necessary. |
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## Clarify essential system information

[R2-2009582](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_112-e\Docs\R2-2009582.zip) Correction on essential system information ZTE Corporation, Sanechips CR Rel-15 38.331 15.11.0 2094 - F NR\_newRAT-Core

[R2-2009583](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_112-e\Docs\R2-2009583.zip) Correction on essential system information(R16) ZTE Corporation, Sanechips CR Rel-16 38.331 16.2.0 2095 - A NR\_newRAT-Core

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| Company | Agree?  (Yes or No) | Comments |
| Nokia | No | What is essential SI and how it relates to valid SIBs for a given RRC state was discussed before and the current text in 5.2.2.1 is a result of this discussion. UE, depending on the features supported may require additional SIBs as essential SIBs. If this discussion has to be re-opened, then we need further clarifications about the definition of essential SI/SIB in 5.2.2.1. We prefer to avoid using both essential and valid terms and just use the term "essential".  We don’t see anything broken here. |
| MediaTek | No | Changing the reference section does not clear identify the essential SIB and also not clarify only MIB/SIB1 is needed before RRC setup. We also understand the UE does not receive the SIB2 – SIB5 for connection setup but it is incorrect to clarify in this way. If something is needed, we could have a NOTE to clarify the behavior. |
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## Clarify AS configuration during HO

[R2-2009478](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_112-e\Docs\R2-2009478.zip) Clarification on AS configuration during HO Apple CR Rel-16 38.331 16.2.0 2082 - F NR\_newRAT-Core, TEI16

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| Company | Agree?  (Yes or No) | Comments |
| Nokia | No | This was followed as a practice even in Rel-15 and also in LTE. What is really broken is not clear. |
| Ericsson (Tony) | No | We are not enterely sure what is the main motivation for having this CR and what the change in the CR actually means. Our understanding is that the UE should indeed reconfigure the fields that are received in the RRCReconfiguration and this should be already clear from the procedural text.  We belive that this CR is not needed, unless is clarified what is the real issue that needs to be solved. |
| MediaTek | No | The newly added NOTE is confusing. We think the original text is clear enough on how the UE handle the configuration |
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# Conclusion

In the previous sections we made the following observations:

Based on the discussion in the previous sections we propose the following:

# References

[1]