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

|  |  |
| --- | --- |
| Company | Email |
| Ericsson (Tony) | antonino.orsino@ericsson.com |
| MediaTek | Chun-Fan.Tsai@mediatek.com |
| Huawei, HiSilicon | caozhenzhen@huawei.com |
| Apple (Naveen) | naveen\_palle@apple.com |
| QUALCOMM | [mambriss@qti.qualcomm.com](mailto:mambriss@qti.qualcomm.com)  chengp@qti.qualcomm.com |
| CATT | erlin.zeng@catt.cn |
| Samsung | [himke.vandervelde@samsung.com](mailto:himke.vandervelde@samsung.com) |
| ZTE | [liu.jing30@zte.com.cn](mailto:liu.jing30@zte.com.cn) |
| NEC | hisashi.futaki[at]nec.com |
| Intel | Sudeep.k.palat@intel.com |

# 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

|  |  |  |
| --- | --- | --- |
| 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. |
| Huawei, HiSilicon | No | We think the agreed intention in the last meeting was that the first active DL/UL BWPs have to be configured upon reconfiguration with reconfigurationWithSync, which can be further clarified if not clear yet. |
| Apple | Yes | We think this is obvious, but ok to provide more clarificaiton |
| QUALCOMM | - | It’s an expected behavior, not sure if need any clarification … will go with majority |
| CATT | Yes, but | It seems useful to clarify this point. But we suggest to further modify as the following, for that in the current configuration there is no such field as ***firstActiveUplinkBWP.***  Random access configuration to be used for the reconfiguration with sync (e.g. handover). The UE performs the RA according to these parameters in the BWP corresponding to the *firstActiveUplinkBWP-Id**~~firstActiveUplinkBWP~~* ~~(see~~ *~~UplinkConfig~~*~~)~~ if *~~firstActiveUplinkBWP-Id~~* the field is present in the current *RRCReconfiguration* message, otherwise according to the parameters in the UE’s current active UL BWP. |
| Samsung | No | We think there is no real ambiguity. If needed, we could instead introduce a restriction i.e. that network configures rach-ConfigDedicated only if firstActiveUplinkBWP-Id is configured |
| NEC | Yes | fine with some updates |
| LG | No | We can rely on network implementation to avoid the issue as mentioned by Samsung. |
| ZTE | Yes  (Proponent) | Thanks the comments from CATT, and the revision suggested seems fine for us.  Response to MediaTek, the reason we have firstActiveUplinkBWP here is that we need to inform UE on which BWP the rach-ConfigDedicated resource is located.  Reply to Huawei: In agreed RP-201937 CR1748, it states that the field firstActiveUplinkBWP-Id is optionally present upon reconfiguration with reconfigurationWithSync to the same SpCell, but it is not clear how to understand the rach-ConfigDedicated in case the firstActiveUplinkBWP-Id is not included.  Reply to Samsung: The intention of the CR is to clarify two things that whether the rach-ConfigDedicated can be configured in case the firstActiveUplinkBWP-Id is not. And if such configuration is allowed, how to determine the BWP on which the rach-ConfigDedicated is located. Although we think the configuration of rach-ConfigDedicated without firstActiveUplinkBWP-Id should be allowed, it also acceptable for us to clarify that rach-ConfigDedicated can only be configured in case the firstActiveUplinkBWP-Id is included in the same message, in which case one condition can be added for the rach-ConfigDedicated to make it clear. |
| Intel | Yes (with comments) | We agree in principle with the changes. However, the proposed text is confusing as it says „otherwise according to the parameters in the UE’s current active UL BWP“ but the parameters are still configured by this field. Hence suggest to update text to: otherwise according to these parameters in the UE’s current active UL BWP“ |

## 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

|  |  |  |
| --- | --- | --- |
| 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). |
| Huawei, HiSilicon | Not sure | Not sure we should put a limitation that only one SCell in a sTAG can be configured with rach-ConfigCommon. Or any limitation in other specs? |
| Apple | Yes | We think that RACH for SCell is only sTAG purposes and it is not necessary to have multiple RACH configurations in a TAG when all of the serving cells will have the same UL timing. It also creates additional verification effort at the UE and we agree with MediaTek’s views on the usefulness of this clarification. |
| Qualcomm | No strong view | We agree it can reduce UE complexity for monitoring PDCCH ordered RACH in SCell if this CR is agreed. But we also think it will put restriction on Network configuration, which was not in Rel-15. So, we agree with MediaTek that if it is agreed, the CR should start from Rel-15. |
| CATT | Not sure | It seems safe to leave this to implementation. Not sure about the benefit to specify such restriction. Regarding the possible PDCCH monitoring reduction we are not sure as it is more about blind detection numbers but not an extra RA-RNTI.  So we tend to think this CR is not necessary. |
| Samsung | No | We see no need i.e. can be left to (sensible) network implementation |
| ZTE | No | We think this can be ensured by network implementation.  For sTAG, since SCell may be deactivated, we think the NW should be allowed to configure RACH resource on multiple SCells. Otherwise, there will be no RACH resource available in case the SCell with RACH resource is deactivated. |
| NEC | No | If clarification is necessary, this can be captured in Stage 2. |
| Ericsson | No | We agree with others this should be left to network impl. |
| LG | No | This can be left to network implementation. |
| Intel | No | Agree with the logic, but do not see the need for the change. To our understanding, the network can configure RACH configuration for multiple SCells, but the UE/network should only trigger RACH on a cell of the cell group, i.e. not multiple RACH. Therefore do not need to restrict the configuration. |

## 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?**

|  |  |  |
| --- | --- | --- |
| 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 |  |
| Huawei, HiSilicon | Yes | The proposals can be observed from the specification. No change seems needed. |
| Apple | Yes | We do not think those observations are relevant to the reestablishPDCP and resestablishRLC settings when SRB1 configuration is present in the first RRCReconfiguration message. So, no changes to the spec are needed. |
| QUALCOMM | Yes | Carry the same understanding. |
| CATT | Yes |  |
| Samsung | Yes |  |
| ZTE | Yes |  |
| NEC | Yes |  |
| Intel | Yes | Agree with the proposals and it is line with the current specification. |

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:

|  |
| --- |
| ***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. |

|  |
| --- |
| ***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? )**

|  |  |  |
| --- | --- | --- |
| 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. |
| Huawei, HiSilicon | Not required | For SRB1, PDCP and RLC have been re-established upon initiation of RRC re-establishment. No need to include PDCP/RLC re-establishment in the first RRCReconfiguration after re-establishment, which is already clear in specification. |
| Apple | Not Required | Agree with Ericsson. |
| QUALCOMM | Not required | Carry the same understanding |
| CATT | Not required | For the same reasons mentioned by above companies. |
| Samsung | No | UE performs re-establishment of PDCP and RLC for SRB upon initiating re-establishment, so there seems no real need for network to set the bit |
| ZTE | Not required | Same view as above companies.  In addition, we are wondering for RRCResume case, whether network is requried to set reestablishPDCP and reestablishRLC to true? |
| NEC | Not required |  |
| Intel | Not required and do not agree | As in proposal 1 and 2, the PDCP is already re-established and data sent over it. It should not be re-established again. |

**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?**

|  |  |  |
| --- | --- | --- |
| 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. |
| Huawei, HiSilicon | No | As clarified above, the current specification is already clear to support the above proposals. |
| Apple | Yes | We are fine to add some clarification in the specification about this issue. |
| QUALCOMM | Yes | Fine to clarify it. |
| CATT | Maybe no | Tend to agree with Huawei. |
| Samsung | No | We see no real need to introduce any clarification |
| ZTE | Yes | We are fine to clarify it. |
| NEC | Yes | nice to have |
| LG | No | We think it is already clear but no strong view. |
| Intel | No strong view | As mentioned above, the current specification is clear on UE performing PDCP re-establishment for SRB1. This should be clear but if companies prefer to clarify, that is also acceptable. |

## 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?)**

|  |  |  |
| --- | --- | --- |
| 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.  [ZTE] Sorry for the misleading, the sentence “assume the field is still absent” was trying to imply the UE will re-apply the default value after handover, not inherit the value from source cell.  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. |
| Huawei, Hisilicon | Agree | It is a basic principle. |
| Apple |  | We basically agree that UE considers the fields as absent, if the earlier parent (with M) did not configure this, and the current message does not have the parent field.  But the proposal is not clear. Pls see our comments for the actual CR below. |
| QUALCOMM | May be not | Not sure why the Need R is also considered for scrambling ID IE, when IEs listed in the discussion paper are all Need S.  [ZTE] The hoppingId in PUCCH-ConfigCommon is defined as Need R. We were also wondering why those similar fields use different Need codes.  If needed, we can simply add in the description of the IE, that default value is the PCI of the current serving cell. |
| CATT | No | Agree with MTK and Apple on the need of clarification. |
| ZTE | Yes  (Proponent) | The wording of the proposal may not be clear, but the intention is same as what companies commented. That is:  If the field (e.g. hoppingId) is not provided before, and network does not signal the parent field (Need M) in handover command, then after handover, the UE will apply default value of “current” serving cell (i.e. target PCI), not source PCI. |
| NEC |  | agree with the clarification in P1. No strong view for the CR |
| Ericsson | Yes | We agree with the principle expressed in the Proposal 1 (I think this is the porpose of the Q1) |
| Samsung | No | We agree that in general if parent is absent, need code of subfield is not applied by UE. This should be clear from 6.1. Some further remarks regarding this particular case:  1. intention was probably that UE maintains default behavior and applies PCI of target cell for hopping  2. we are not sure if we can assume all UEs actually support this intended behavior  3. network can however avoid any potential problems by always signaling the field upon HO/ PCell change  4. the additional signaling is marginal, so it seem no issue for network to always apply this safe approach  [ZTE] For bullet 3, it means for handover/PSCell change, network can never do delta configuration for those parent fields (and parent of parent fields…). This is exactly what we want to avoid. But it worth checking whether all UEs actually support this intended behaviour. |
| LG | Maybe or not | Agree with the intention.  If companies think that anything needs to be done, we prefer to clarify that the default value is the PCI of the “current” serving cell. But we need to check if this is acceptable from the observation that in RRC we normally assume a static parameter rather than a running parameter. The alternative is to resolve this by network implementation. |
| Intel | Yes (with comments) | The basic principle of Need codes is that they apply only if the parent field is included.  But we understand that the issue here is specific for this field in that the default value is specific to the current serving cell there is an ambiquity (another reason why default values and use of Need S for it should be avoided!). We are OK to clarify further for this case without changing the basic use of Need fields. |

[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?**

|  |  |  |
| --- | --- | --- |
| 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. |
| Huawei, HiSilicon | No | The principle in Question 1 should be already clear in specification, e.g. in “For downlink messages, the need codes, conditions and ASN.1 defaults specified for a particular (child) field only apply in case the (parent) field including the particular field is present.”  [ZTE] We are afraid the current sentence is not sufficient to cover this scenario, because it requires the parent field to be signalled. And people can interpretate that the “Need Code of child field only applies when parent field is present”. Then for the case we described, the parent field is absent (Need M), then the Need code of child field won’t work, and UE will remain the value used in source cell. |
| Apple | No | We think the original text is clear enough. Also for ‘S’, the behaviour would be specified in the description and so cannot generalize with ‘R’. |
| QUALCOMM | May be | Again, I’m afraid that generalizing the behavior (Need S, Need R) might break other procedures in the spec.  if clarification is needed, it can be done for a specific IE (scrambingID). |
| CATT | No | Agree with MTK and Apple. |
| ZTE | Yes  (Proponent) | Response to Nokia’s question: Yes, we bring the contribution for clarification, because we faced the problem during IoT test.  But we are glad to see (so far) companies have the same understanding on how UE should behave in such scenario. As we reponsed to HW’s comment, we think the current spec cannot cover this case well. But if majority companies prefer not to change the spec. We would suggest to just confirm this understanding in the Chairman Notes. Such as:   * RAN2 confirms that for scrambling ID related fields (i.e. whose default value is defined as PCI of current serving cell). In case network does not signal the field before (e.g. UE applies default value: PCI), during handover procedure, if the parent field (Need M) is not included in handover command, then for those child scrambling ID fields, the UE will apply default value of “current” serving cell (i.e. PCI of target cell), not the PCI of source cell.   Hope this approach is acceptable to all. (Any wording improvement suggestion are welcome) |
| NEC |  | no strong view |
| Ericsson | No | We agree with the concern raised by Qualcomm on the common guidance text. If clarification is needed, it can be done for a specific IE (scrambingID). But we do not see a need for this.  Today they read  ***pdcch-DMRS-ScramblingID***  PDCCH DMRS scrambling initialization (see TS 38.211 [16], clause 7.4.1.3.1). When the field is absent the UE applies the value of the physCellId configured for this serving cell.  For hoppingId, it is a bit more complicated, since the default value assignment is in RAN1 spec. But should not really matter, since there is a reference in 38331 field description.  Need R should be changed to Need S. This can be done in Rapp/Misc CR. |
| LG | No | Please see our comments for the previous question |
| Intel | No | We should not change the overall Need code handling in this manner as it can have unforeseen consequences. Any clarification shoulbe be in the corresponding field descriptions. |

## 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):

|  |  |
| --- | --- |
| *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):

|  |  |
| --- | --- |
| *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):

|  |  |
| --- | --- |
| *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):

|  |  |
| --- | --- |
| *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)**

|  |  |  |
| --- | --- | --- |
| 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 |  |
| Huawei, Hisilicon | ServingCellConfigCommonSIB | No strong view, and slightly prefer using the IE name in this case as it is more descriptive and would not cause any confusion. |
| Apple | No clarification needed, but if companies prefer, then we agree with the Ericsson approach |  |
| CATT | ServingCellConfigCommonSIB | For the sake of clarity. |
| Samsung | NA | We see no real need to change i.e. seems no real confusion. If majority prefers, maybe this can be in RapCR |
| ZTE | ServingCellConfigCommonSIB |  |
| NEC | ServingCellConfigCommonSIB |  |
| LG | NA | We do not see any confusion |
| Intel | NA | We don’t see a real need to clarify further. The usage is only in a condition and the intention should be sufficiently clear already. Using an IE name here is also a bit confusing. |

**Question: Any comments to the other changes in R2-2009698/9699?**

|  |  |  |
| --- | --- | --- |
| 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 |
| Huawei, Hisilicon |  | Agree with Nokia, and prefer to merge the changes to the rapporteur CR, as it does not have functional changes. |
| Apple | Neutral | We are ok if majority wants the change. |
| QCOM | - | Go with the majority |
| CATT | No much strong view |  |
| Samsung | No | We see no real need to change (see previous) |
| ZTE | No strong view | Same view as Nokia and HW, we prefer to merged it into rapporteur’s CR. |
| NEC |  | we are fine with CR contents, which could be in Rapp CR |
| LG |  | *We can agree with the yellow part added in R2-2009698*  ***supplementaryUplink***  Network may configure this field only when *supplementaryUplinkConfig* is configured in *ServingCellConfigCommon* or *supplementaryUplink* is configured in *ServingCellConfigCommonSIB*. |
| Intel | No | We don’t see a real need to change (see previous response) |

## 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

|  |  |  |
| --- | --- | --- |
| 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. |
| Huawei, Hisilicon | No | Agree with MediaTek. |
| Apple | No strong view | We are ok to clarify if majority prefer, but this is also already evident as *smtc* is optional. |
| QUALCOMM | Alternative solution | We understand ZTE intention and we see MediaTek and Hawei concern.  the CR will create a confusion, as the SMTC if not provided, UE assumes that no SSB is broadcasted and bail out and will not use the SMTC in the MeasObject (as indicated in the description of the IE).  Alternative solution:  if no SMTC is provided (absent) in the SCellConfig and if no MeasObject with same SSB arfcn is configured with an SMTC, then UE can assume no SSB is broadcasted and bail out.  [ZTE] We may not fully understand word “bail out”, could you please clarify a bit more? We understand the UE can know whether SSB is broadcasted based on the presence of *absoluteFrequencySSB* in *FrequencyInfoDL*. Not by the presence of *smtc* and MO. |
| CATT | No | Agree with MTK and Huawei. Network implementation can handle this and thus no need to change. |
| Samsung | Yes | We are fine to clarify, but no strong view |
| ZTE | Yes  (Proponent) | Based on the comments from companies, seems companies all agree that NW is allowed to not signal the smtc field (based on “optional” attribution) together without providing MO.  Then our question is, whether it is a wrong configuration, if network includes the smtc field, e.g. set it to the SMTC of sPCell, because it has the same timing reference. If companies consider this is a wrong configuration, then we think it worth clarify the field is anyway not applicable to “SCell w/o SSB” case. |
| NEC | Yes | it is good to clarify this |
| Ericsson | No | We agree with others no CR is needed. |
| LG | Maybe | We are fine with this clarification, only if this is merely to restrict IOT cases. Otherwise, we think this CR is not needed. |
| Intel | May be | We agree with MediaTek’s comments. But we are open to consider a clarification if others feel it is needed. |

## 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

|  |  |  |
| --- | --- | --- |
| 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.  [ZTE] It would be good if an example (of NOTE) can be provided. ; ) |
| Huawei, Hisilicon | No, but | It is to remove the reference and merge into rapporteur CR. |
| Apple | No | change not needed. The essential information, as shown in 5.2.2.5, only contains MIB and SIB1. Any additional SIBs are not absolutely needed. |
| Qualcomm | - | No doubt there is ambiguity when it comes to the essential system information. It would be good if clarification can be added to the spec.  I second MediaTek comment on adding a “Note” |
| CATT | No strong view | Currently the text refers to a more general part of the section, which may not be that accurate but nothing is wrong and the current behavior should be quite clear in SI reception. |
| Samsung | Yes |  |
| NEC |  | we share the intention (understanding), while Mediatek approach sounds better |
| Ericsson | Maybe | If we would like to clarify anything and make the specification more clear, we should perhaps explicitly say that UE has to have (valid) MIB/SIB1 before accessing the system. |
| LG | No | Essential information is already clear from the section 5.2.2.5 “Essential system information missing“. And the section 5.2.2.1 does not say anything about “essential” SI. So we do not think there is confusion. |
| ZTE | Yes (Proponent) | The reason we bring this CR is that we have a sentence in 5.2.2.1 that “The UE in RRC\_IDLE and RRC\_INACTIVE shall ensure having a valid version of (at least) the MIB, SIB1 through SIB4 and SIB5 (if the UE supports E-UTRA).”, and based on the sentence, there may be different understandings.  Alt1: The 5.2.2.1 is a correct reference and the essential system information shall be replaced by necessary information   * The UE initiates the procedure when upper layers request establishment of an RRC connection while the UE is in RRC\_IDLE and it has acquired ~~essential~~necessary system information as described in 5.2.2.1.   Alt2: The 5.2.2.1 is a wrong reference   * The UE initiates the procedure when upper layers request establishment of an RRC connection while the UE is in RRC\_IDLE and it has acquired essential system information as described in ~~5.2.2.1~~5.2.2.3.1.   We think clarification is needed to understand which one of the above is the correct understanding. |
| Intel | No | The referenced sentence in 5.2.2.1 does not make the other SIBs „essential“ system information in our view. The essential SI is listed in section 5.2.2.5.  While we agree that the current reference to 5.2.2.1 is not that helpful, changing the reference in itself does not add clarity here in our view.  If felt essential, a NOTE to list the essential SIBs is a better approach. |

## 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

|  |  |  |
| --- | --- | --- |
| 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 |
| Huawei, HiSilicon |  | Not sure the added NOTE is aligned with the reason of change. We don’t see a big need of the NOTE itself. |
| Apple | Yes  (Proponent) | The same issue exists in LTE. In TS 36.331 for HO procedure 5.4.2.3, a NOTE is used to avoid the case that UE may not apply the full configuration upon the RACH procedure successful completion. We think the same NOTE is needed in 38.331 spec to ensure the UE to apply the parameters received in the RRCReconfiguration. |
| Qualcomm | Yes | We think the cover sheet is not well written so that some companies may misunderstand. Let me clarify our understanding of the issue:  *2>  apply the parts of the CSI reporting configuration, the scheduling request configuration and the sounding RS configuration that do not require the UE to know the SFN of the respective target SpCell, if any;*  *2>  apply the parts of the measurement and the radio resource configuration that require the UE to know the SFN of the respective target SpCell (e.g. measurement gaps, periodic CQI reporting, scheduling request configuration, sounding RS configuration), if any, upon acquiring the SFN of that target SpCell;*  The 1st bullet specifies UE behavior on how to handle configuration which doesn’t require SFN of target cell. Howeve, it doesn’t use “for example” or “e.g.”, so it will restrict the UE behaviors to only the 3 cases (i.e. only *the CSI reporting configuration, the scheduling request configuration and the sounding RS configuration*). Then, it may not be entirely clear what the UE does with other configurations that do not require SFN beyond the 3 ones. The note is intended to clarify UE behavior on how to handle these, which is aligned with our understanding.  Please note that 36.331 has the same note captured:  1> if MAC indicates the successful reception of a PDCCH transmission addressed to C-RNTI and if *rach-Skip* is configured:  2> stop timer T304;  2> release *rach-Skip*;  2> apply the parts of the CQI reporting configuration, the scheduling request configuration and the sounding RS configuration that do not require the UE to know the SFN of the target PCell, if any;  2> apply the parts of the measurement and the radio resource configuration that require the UE to know the SFN of the target PCell (e.g. measurement gaps, periodic CQI reporting, scheduling request configuration, sounding RS configuration), if any, upon acquiring the SFN of the target PCell;  NOTE 3: Whenever the UE shall setup or reconfigure a configuration in accordance with a field that is received it applies the new configuration, except for the cases addressed by the above statements. |
| CATT | No strong view |  |
| Samsung | No |  |
| ZTE | Yes | We think this is not an essential correction. However, since we have similar NOTE in LTE, we are fine to add it in NR. |
| NEC |  | according to the explanation by QC, it seems the change is just similar to what LTE spec describes. Fine to add the Note but cover page should be updated to clarify the issue e.g. refer to 36.331? |
| LG | No strong view | We do not see any confusion for now. But considering QC explanation, only if there is other function not covered by the listed 3 functionalities (CSI, SRS, SR), then the note may be beneficial. |
| Intel | May be | The explanation from Qualcomm was helpful in understanding the issue. The text in the NOTE is quite difficult to understand, and also the reference to „above statements“ does not indicate which of the above (could the whole section). Considering the NOTE is also present in LTE, we are OK to add it here as well. |

# Conclusion

In the previous sections we made the following observations:

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

# References

[1]