3GPP TSG-RAN WG2 Meeting #111e R2-2008184

Online, August 17th - 28th *R2-20xxxxx*

**Agenda item: 6.12**

**Source: Nokia**

**Title: Summary of [AT111][104][PRN] Stage 3 Corrections**

**WID/SID: NG\_RAN\_PRN-Core - Release 16**

**Document for: Decision**

# 1 Introduction

This document is the summary of the following email discussion

**[AT111e][104][PRN] Stage 3 Corrections (Nokia)**

Scope: Discuss the CRs in R2-2006634, R2-2006852, R2-2007841, R2-2008114, R2-2006633, R2-2007842, R2-2006853, R2-2007411 and R2-2008016

Initial intended outcome: summary of the offline discussion with e.g.:

  List of CRs that can be agreed as is

  List of CRs that can be agreed with some changes (with an indication of the needed changes)

  List of CRs that require online discussion

  List of CRs that should not be pursued

Initial deadline (for companies' feedback): Wednesday 2020-08-19 07:00 UTC

Initial deadline (for rapporteur's summary in R2-2008184):  Wednesday 2020-08-19 09:00 UTC

CRs listed as "can be agreed as is" in R2-2008184 and not challenged until Wednesday 2020-08-19 13:00 UTC will be declared as agreed by the session chair. For the other ones, the discussion will continue online.

# 2 Discussion

## 2.1 38.304 corrections

### 2.1.1 [R2-2006634](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2006634.zip) Correction on Naming of the List of Forbidden Tracking Areas (CATT)

**Q1.1 Companies are invited to provide their views (including revision proposals) on this CR**

|  |  |
| --- | --- |
| **Company** | **Comment** |
| Huawei | The first change is not correct. According to TS 23.122, "list of 5GS forbidden TAs for roaming" and "list of forbidden tracking areas for roaming" correspond to NG-RAN and E-UTRAN respectively. Therefore, in clause 5.2.4.4, these two wordings are respectively used for the intra-RAT case and inter-RAT case, which is correct and no changes are needed. (PS. a typo in clause 5.2.4.4 is found: an inter-frequency or inter-frequency cell -> an intra-frequency or inter-frequency cell) |
| CATT | The first change is necessary. Even for NR cell, the naming for forbidden TA list is not used consistently. "list of 5GS forbidden TAs for roaming" is used in 5.2.4.4 while "Forbidden Tracking Areas” is used to determine suitable cell. |
| ZTE | The first change is not correct. There are 2 forbidden tracking area types:1. 5GS forbidden tracking areas for roaming
2. 5GS forbidden tracking areas for regional provision of service

These two types are from different reject Causes as below:#12 (Tracking area not allowed). The UE shall store the current TAI in the list of "5GS forbidden tracking areas for regional provision of service" #13 (Roaming not allowed in this tracking area). The UE shall store the current TAI in the list of "5GS forbidden tracking areas for roaming" #15 (No suitable cells in tracking area); The UE shall store the current TAI in the list of "5GS forbidden tracking areas for roaming" For the first type, as specified in the current 38.304, the UE can get the limited service:**reserved cell:**- camped on a cell that belongs to a registration area that is forbidden for regional provision of service; a cell that belongs to a registration area that is forbidden for regional provision service (TS 23.122 [9], TS 24.501 [14]) is suitable but provides only limited service.In the clause 5.2.4.4, if we change to “forbidden tracking areas”, the cells that belong to the “5GS forbidden tracking areas for regional provision of service” was also included, then the UE will bar this frequency for 300s, which means the UE even can’t get the limited service, which is conflict with the above description on the reserved cell.For the second change, we agree. |
| Qualcomm | Agree with second change. First change is not necessary. |
| Intel | Agree with Huawei the first change is not correct. Otherwise the other changes on CAG-ID is editorial. |
| Nokia | 1) The first change (5.2.4.4 on forbidden TAs) is not fully correct as commented above.2) Agree in the corrections of terms for CAG-ID (editorial correction that can be merged in any other agreed CR). |
| Lenovo | We agree with other that first change is not needed.The editorial corrections related to “CAG ID” are ok. |
| Ericsson | Agree with others.The "CAG ID"-fix can be merged to a rapporteurs' CR if there will be one. |
| China Telecom | Agree with Huawei for the first change. The second change is OK. |
| Asia Pacific Telecom | For the first change, we agree with others that it is unnecessary. For the second change, it is editorial, and we suggest aligning with TS 38.300 and TS 38.331. TS 38.300 uses “CAG ID”, while TS 38.331 uses “CAG ID” and “CAG-ID”. If we agree to use “CAG-ID”, TS 38.300 and TS 38.331 should be revised. If we agree to use “CAG ID”, TS 38.331 should be revised.  |
| Samsung | Only editorial change (i.e. alignment of CAG-ID) is acceptable to us and it can be merged to Rap CR. |

### 2.1.2 [R2-2006852](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2006852.zip) Cell selection and reselection corrections for NPNs (Nokia, Nokia Shanghai Bell)

**Q1.2 Companies are invited to provide their views (including revision proposals) on this CR**

|  |  |
| --- | --- |
| **Company** | **Comment** |
| Huawei | 1) The first change is not needed. It is captured in clause 5.1.1.2 that “If NAS has selected a CAG and provided this selection to AS, the UE shall search for an acceptable or suitable cell belonging to the selected CAG to camp on”, which is enough. Besides, the similar chapter in 36304 does not mention this either.2) The change on “inter-RAT” is contradicting the R15 text. Directly adding "Inter-RAT" to the sentence is not correct due to the "list of 5GS forbidden TAs for roaming" issue (same issue as we commented the CATT CR) 3) We prefer not to delete the descriptions related to SNPN AM, because the behavior is not exactly the same with PLMN. |
| CATT | Agree with comments from Huawei on 1) and 3). For 2),may be rewording is needed |
| ZTE | (1)For the first change, for that the chapter 5.2.3.1mainly wants to clarify the difference between the initial cell selection with and without stored information, it’s not suitable to give such kind of Detail Manual CAG ID selection description in this chapter. Besides, as Huawei mentioned this detail info has been included in 5.1.1.2.(2)For the second change Generally, we are Ok, for the issue point by Huawei, maybe it can be solved by adding the “list of forbidden tracking areas for roaming” to this sentence inter-frequency or inter-RAT cell which is not suitable due to being part of the "list of 5GS forbidden TAs for roaming" or “list of forbidden tracking areas for roaming” |
| Qualcomm | First change: Agree with Huawei, CATT and ZTE that this is not needed.Second change: Agree on changes except the “inter-RAT” change. The “inter-RAT” issue was not discussed as part of PRN work. |
| Intel | 1) No strong view. 2) Agree with Huawei that it is not the correct in just adding “inter-RAT”3) The removed text for SNPN is not equivalent to the PLMN text. Not sure why this is the case. |
| Lenovo | On 1) Referring to table 4.2-1 manual CAG selection is included as part of PLMN selection. Therefore, we see no need to add description in 5.2.3.1. On 2) It is not clear to us what the problem with the description in 5.2.4.4 is and what kind of redundant text it contains. |
| China Telecom | 1. There is no need to repeat in 5.2.3.1.
2. We prefer the original statement.
 |
| Asia Pacific Telecom | 1. It is acceptable since manual CAG selection is performed after PLMN selection.
2. The “inter-RAT” change is unnecessary since the relationship between “the inter-RAT cell” and “the list of 5GS forbidden TAs for roaming” in the same sentence is incorrect. Furthermore, it is unclear why the texts are redundant. Thus, we suggest not to pursue the second change.
 |
| Samsung | The first change is not needed as it is already clear in 5.1.1.2.The second change seems OK but we can also remove the last sentence "if the UE is redirected under NR control…" as it is also duplicated. |

### 2.1.3 [R2-2007841](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2007841.zip) Correction to 38.304 on any cell seletion in NPN (Huawei, HiSilicon)

**Q1.3 Companies are invited to provide their views (including revision proposals) on this CR**

|  |  |
| --- | --- |
| **Company** | **Comment** |
| Huawei | Agree |
| CATT | Not impact if this CR is not approved. It does not make sense to perform any cell selection for SNPN. All emergency services including emergency call,CMAS/ETWS are not on SNPN cell in R16 |
| ZTE | We agree with the change, but we think it’s minor modifications, it can be merged into the rapporteur’s version if have. |
| Qualcomm | This CR is not needed. The behavior regarding emergency calls are already captured in SA2 specs. No need to capture the same thing in RAN2 specs. |
| Intel | Agree |
| Nokia | Disagree with proposal: Decoupling normal PLMN selection and SNPN one is intentional, as an acceptable cell is never selected in SNPN AM in Rel-16. |
| Lenovo | Cover page issues: CR# is missing, RAN box can be unticked.On the change itself: UE enters “any cell selection state” if e.g. registration to an SNPN has been rejected or UE does not have an SNPN subscription. However, due to the fact that emergency services are not supported for SNPN, we think it makes no sense to specify that UE in SNPN AM shall search for an acceptable cell. |
| Ericsson  | The behavior this CR attempts to achieve is not crystal clear to us, two questions:1. a normal (non-NPN) UE seem to become forced to search also SNPN-cells? That is not wanted by any company, we assume.
2. will a UE in SNPN AM become allowed to camp on normal PLMN cells? Ericsson agrees to that intention, see [R2-2007404](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2007404.zip). But perhaps Sergio plans to discuss this online?
 |
| China Telecom | Since SNPN does not support emergency services, the CR is not necessary. |
| Asia Pacific Telecom | We agree with the intention but wonder whether it is in Rel-16 or Rel-17. In Rel-16, SNPN does not support emergency services. Thus, based on the CR, a UE in SNPN AM enters any cell selection state would target at camping an acceptable cell, which can support emergency services. It contradicts with the Rel-16 scope, but it can be accepted by Rel-17 SA2 scope “support for IMS and emergency services for SNPN.” |
| Samsung | We think the CR is not needed. Based on the two LSs (S2-2001400, S1-202220), SA1/2 confirmed emergency call and CMAS/ETWS are not supported on SNPN cell in R16. So, the UE will not search for an acceptable cell of any SNPN.  |

### 2.1.4 [R2-2008114](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2008114.zip) 38.304 Correction on UE behavior when the best cell is not suitable (vivo, Nokia, Nokia Shanghai Bell)

This is the revision of R2-2007902.

**Q1.4 Companies are invited to provide their views (including revision proposals) on this CR**

|  |  |
| --- | --- |
| **Company** | **Comment** |
| Huawei | The second change is ok to avoid using “SNPN cell”. However, we don’t see the necessity of the first change. |
| CATT | Agree with Huawei |
| ZTE | Agree with Huawei |
| Qualcomm | Agree with Huawei. The first change is not needed because the registered PLMN anyway only is valid for a UE not in SNPN AM. |
| Intel | Agree with Huawei |
| Nokia | Agree with CR as it is, but it is also acceptable without the 1st change. |
| Lenovo | Agree with Huawei |
| China Telecom | Agree with Huawei |
| Asia Pacific Telecom | Agree with Huawei. Alternatively, we can also define “SNPN cell” like “A cell broadcasting at least one Stand-alone Non-Public Network Identifier. |
| Samsung | Agree with Huawei. |

## 2.2 38.331 (RRC) corrections

### 2.2.1 [R2-2006633](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2006633.zip) Correction on First NPN-Identity Usage for SIB Validity (CATT)

**Q2.1 Companies are invited to provide their views (including revision proposals) on this CR**

|  |  |
| --- | --- |
| **Company** | **Comment** |
| Huawei | Basically OK, but the correction to *maxNPN* is unnecessary because the original text is mimicking *maxPLMN* and NPN index is involved in *RRCSetupComplete*. |
| CATT | Agree |
| ZTE | Most of the changes are ok except the following ones ( which are unnecessary).

|  |
| --- |
| 1> if the *cellAccessRelatedInfo* contains an entry of *npn-IdentityInfoList* with the NPN identity of the selected PLMN or SNPN:2> in the remainder of the procedures use *npn-IdentityList*, *trackingAreaCode*, and *cellIdentity* for the cell as received in the corresponding entry of *npn-IdentityInfoList* containing the selected PLMN or SNPN;***npn-IdentityList***The *npn-IdentityList* contains one or more NPN Identity elements. Only the same type of NPNs (either SNPNs or PNI-NPNs) can be listed in a *npn-IdentityList*. |

 |
| Qualcomm | Agree with Huawei and ZTE. Also, it is not necessary to move the description of NID to NID list (and thereby delete the row defining NID). Other parts of CR are ok. |
| Intel | We don’t have a strong view on the change from IE name – it is a matter of preference as we don’t have a field name to refer to. But we should be consistent and adopt the same approach for Rel-15 and Rel-16 - noting that there is also a Rel-15 CR proposal from CATT, agreement on that CR should be considered in this discussion.  |
| Nokia | 1) Changes in 5.2.2.4.2 are covered by R2-2006853 (we prefer that version)2) We do not understand why the NID should be removed in NPN-Identity field descriptions and NPN-IdentityInfo should be removed from NPN-IdentityInfoList. |
| Ericsson  | The CR makes a change to the PNI-NPN identity definition (compromising -> comprising), while that word-swap is only editorial, we think the current definition is not aligned with 23.501, which states:*“Public Network Integrated NPNs are NPNs made available via PLMNs e.g. by means of dedicated DNNs, or by one (or more) Network Slice instances allocated for the NPN. … … As network slicing does not enable the possibility to prevent UEs from trying to access the network in areas where the UE is not allowed to use the Network Slice allocated for the NPN,* ***Closed Access Groups may optionally be used*** *to apply access control.”*Given the above, perhaps RAN2 specs should not have used "PNI-NPN identity" in the first place, at least not in the current form. |
| China Telecom | Agree in general, except for deleting NID. |
| Asia Pacific Telecom | Agree with Nokia. |
| Samsung | We are OK to only agree the following changes:* NPN identity
* Editorial changes in SIB10
* Two editorial changes in the IE *NPN-Identity* i.e. cag-Identity, CAG-IDs.
* One editorial change in the field description of *cellReservedForOperatorUse*

Since NPN identity correction is covered by 7842, all above editorial changes can be merged to Rap CR. |

### 2.2.2 [R2-2007842](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2007842.zip) Correction to 38.331 on SIB validity and emergency services for NPN (Huawei, HiSilicon)

**Q2.2 Companies are invited to provide their views (including revision proposals) on this CR**

|  |  |
| --- | --- |
| **Company** | **Comment** |
| Huawei | Agree. |
| CATT | Agree |
| ZTE | We agree with the modifications. We also notice that part of the modifications are also mentioned in the above paper (R2-2006633 CATT), the other part on emergency supporting is also mentioned in [R2-2007411](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2007411.zip) Ericsson paper. |
| Qualcomm | Disagree with the changes to SIB1 regarding emergency calls (eCallOverIMS-Support and ims-EmergencySupport). It is already clear from SA2 specs that emergency calls are not supported by SNPN and hence this clarification is not needed in RAN2 specs. |
| Intel | We don’t agree with the change to IMS emergency bit usage. It indicates whether the cell supports IMS emergency call in limited service state. Whether an SNPN UE supports emergency calls or not does not change the bit definition. If an SNPN UE does not support emergency calls, it will ignore the bit anyway – we don’t normally capture that a UE not supporting a feature ignores the fields. |
| Nokia | Agree with the CR |
| Lenovo | Cover page issues: CR# is missing, “Source to TSG” should be “R2”.The handling of the emergency call flags as proposed by Ericsson in 7411 looks better to us.Other changes look ok. |
| Ericsson | **On the PNI-NPN identity**, as we indicated for the paper above, there is perhaps no need to include the PNI-NPN identity at all, or even talk about in RAN2 specs it actually. We started to use a “PNI-NPN identity” in the wrong way it seems. If we want to really change this PNI-NPN identity-parts, we could instead of PNI-NPN identity call it simply ClosedAccessGroup and have that as a possible “NPN-identity” in the NPN identity list. This would be a more correct way of doing it which is also aligned with SA2.**Emergency-services**: RRC is a UE-centric spec hence we suggest to capture this in UE behaviour. This CR seem to only say what the parameter is for, not what the UE actually does/does not do with it. We prefer to clarify the UE behaviour instead as in [R2-2007411](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2007411.zip). |
| China Telecom | Agree |
| Asia Pacific Telecom | For the first change, we are ok. For the second change, we prefer Ericsson’s approach in R2-2007411. |
| Samsung | We are fine with the changes except emergency issue.  |

### 2.2.3 [R2-2006853](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2006853.zip) Corrections for PNI-NPN related parameter selection (Nokia, Nokia Shanghai Bell)

**Q2.3 Companies are invited to provide their views (including revision proposals) on this CR**

|  |  |
| --- | --- |
| **Company** | **Comment** |
| Huawei | 1) For the first change, we don’t think the selection behavior of NAS needs to be embodied here. Besides, there is selected CAG ID for both automatic and manual selection, but the selection behavior is performed by NAS, so CAG ID here does not mean CAG ID selected by AS, rather, it is the CAG ID read by AS.2) 2nd change. We think “the PNI-NPN selected by upper layers” is not applicable to *RRCSetupComplete*, since the upper layers selected PNI-NPN may not be used during cell reselection. Therefore the added description “2>…” does not make sense.3) We think the logic with the current text is clear. There’s no reason that the UE will set the PLMN index to the PLMN in the PLMN list if it selects a CAG.4) We think the changes are making the spec less readable. |
| CATT | Changes are not necessary.agree with comments from Huawei |
| ZTE | Generally, we agree the motivation of this CR.This CR focus on the interaction between the NAS and AS, it includes the UE action upon receiving SIB1, on UAC parameters selection, and the selected PLMN Index determination in Msg 5. It has been determined that for a PLMN, different UACs/ selected PLMN Indexes may be adopted for Public network and PNI-NPN.With this background, the key problem is that for a PLMN, if both the UE and Network support Public and CAG cells but the NAS only indicate the selected PLMN, how does the UE determine the UAC parameters and the Selected PLMN index in the Msg5. According to the CR, if our understanding was right the PNI-NPN will have high priority, for that the UE will always check whether there is available Selected CAG/Allowed CAG list.Anyway, it mainly affects the UE side, thus we can left it to UE vendors. In addition, we also want to confirm what does the “selected PNI-NPN” mean? Is it for the manual mode? |
| Qualcomm | Changes are not necessary. The UE intended behavior is quite clear already. In the specific case of a PLMN being listed twice (once with CAG and once without), and with the UE being a member of the CAG, there is no requirement for the UE to access the cell via the PLMN-index corresponding to the CAG. This should be left to UE implementation and there is no need to mandate the UE selects the PLMN-index corresponding to the CAG. |
| Intel | 1) We think the existing text is sufficient2) and 3): Existing text looks sufficient to us. The added text actually makes it more confusing.4) We think the existing text is sufficient.  |
| Lenovo | We see no need to specify the interaction between NAS and AS in such detail. |
| Ericsson | The changes seem unnecessary. |
| Asia Pacific Telecom | 1. Regarding the first change, we think the text should be improved to capture the *trackingAreaCode* and *cellIdentity* are associated to *NPN-IdentityInfo* and *PLMN-IdentityInfo*, respectively.
2. Regarding the second change, tdo we agree for the UE to transmit RRCSetupComplete message including CAG ID to the serving cell?
3. Regarding the third change, do we agree for the UE to transmit RRCResumeComplete message including CAG ID to the serving cell?
4. The fourth change seems unnecessary.
 |
| Samsung | We think there is no ambiguity on the current procedure text so all changes are not needed. |

### 2.2.4 [R2-2007411](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2007411.zip) ims-EmergencySupport interpretation and clarification for SNPN (Ericsson)

**Q2.4 Companies are invited to provide their views (including revision proposals) on the draft CR included in the Annex of this paper**

|  |  |
| --- | --- |
| **Company** | **Comment** |
| Huawei | The change is correct. We have another version in our CR (our CR is in the perspective of cell whereas this CR is in the perspective of UE). |
| CATT | Agree |
| ZTE | We agree with the modification, and it was also mentioned in Huawei’s paper R2-2007842. |
| Qualcomm | This is already clear from SA2 specs. There is no need to capture this restriction in the inter-layer interactions within the UE. |
| Intel | We don’t agree with the change to IMS emergency bit usage. It indicates whether the cell supports IMS emergency call in limited service state. Whether an SNPN UE supports emergency calls or not does not change the bit definition. If an SNPN UE does not support emergency calls, it will ignore the bit anyway – we don’t normally capture that a UE not supporting a feature ignores the fields. |
| Nokia | Disagree. Change in 5.2.2.4.2 is not needed. CR in R2-2007842 covers the required clarification for SNPN case in SIB1 description. |
| Lenovo | We agree with P1+P2. On P3: proposed change in the concerned SIB1 field descriptions “Shall be ignored by UEs in SNPN access mode” can be misunderstood that it applies for the absent case. Therefore, it might be better to say “If present, it shall be ignored by UEs in SNPN access mode”. |
| Ericsson | @Nokia/Huawei: the RRC spec describes UE behavior so we think it makes more sense to have the CR from the UE perspective.@Qualcomm: We believe this clarification is needed in RRC specifications as the RRC spec is carrying the bits and the bits shall not be used by a UE when in SNPN AM.@Intel: Note that we say that a UE in SNPN AM. A UE may be in normal access mode and should then forward these flags if received, but if that same UE is in SNPN AM the UE should not.@Lenovo, your suggested improvement makes sense. |
| China Telecom | Agree. SNPN UE does not need to react to the indications. |
| Asia Pacific Telecom | Agree. |
| Samsung | We agree with the intention and we prefer Lenovo's rewording which seems more clearer. |

### 2.2.5 [R2-2008016](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2008016.zip) Corrections to IntraFreqCAG-CellPerPLMN and InterFreqCAG-CellList in SIB3 and SIB4 (Samsung Electronics Co., Ltd)

**Q2.5 Companies are invited to provide their views (including revision proposals) on this CR**

|  |  |
| --- | --- |
| **Company** | **Comment** |
| Huawei | Editorial. There’s no real issue if the change is not approved. |
| CATT | Agree. Nice to have this change. |
| ZTE | We agree with the change, but we think it’s minor modifications, it can be merged into the rapporteur’s version if have. |
| Qualcomm | Good to have this change. Can be merged with another CR as the change is quite small. |
| Intel | No strong view. |
| Nokia | Agree. Valid editorial correction that can be merged in any agreed CR. |
| Lenovo | Changes are ok. However, as they are minor they can be merged either to the rapporteur CR or single PRN RRC CR. |
| Ericsson | Fine to align. Can be merged in RRC Rapporteurs CR. |
| China Telecom | No strong view. |
| Asia Pacific Telecom | Agree. |
| Samsung | We are OK to merge it into Rap CR. |

# 3 Conclusions

## 3.1 CRs that can be agreed as is

## 3.2 CRs that can be agreed with some changes

## 3.3 CRs that require online discussion

## 3.4 CRs that should not be pursued