**3GPP TSG RAN WG3 Meeting # 114-e R3-215880**

**e-meeting, 1st – 11th November 2021**

**Title: CB: # 2001\_NTN\_General (1st round - summary)**

**Source: Thales (moderator)**

**Type: discussion**

**Document for: Agreement**

**Agenda Item: 20.1**

**Work Item: NR\_NTN\_solutions: Solutions for NR to support non-terrestrial networks (NTN)\**

# Introduction

This document aims at discussing and agree on BL CRs related to the Rel-17 WI NR\_NTN\_solutions.

Hereunder is recalled the description of the email discussion as defined by the RAN3 chair in its notes:

**CB: # 2001\_NTN\_General**

**- Endorse BL CRs?**

**- Can the Stage 2 and Stage 3 editorials be approved?**

(Thales - moderator)

Summary of offline disc [R3-215880](file:///C%3A%5CUsers%5Cchuberrn%5CDocuments%5C000_DATA_NICOLAS%5C02_3GPP%20Nicolas%5CRAN3%5CMeetings%5C211101_RAN3%23114-e%5CSatellite%20contributions%5CC_Comebacks%5CCB%20%23%202001_NTN_General%20-%20Thales%5CInbox%5CR3-215880.zip)

The following TDOCs are considered as part of this discussion:

|  |  |  |
| --- | --- | --- |
| [R3-214663](file:///D%3A%5C%E4%BC%9A%E8%AE%AE%E7%A1%AC%E7%9B%98%5CTSGR3_114-e%5CDocs%5CR3-214663.zip) | Support Non-Terrestrial Networks (Huawei, Thales, Ericsson, ZTE, Qualcomm Incorporated) | draftCR |
| [R3-215099](file:///D%3A%5C%E4%BC%9A%E8%AE%AE%E7%A1%AC%E7%9B%98%5CTSGR3_114-e%5CDocs%5CR3-215099.zip) | (TP for BL CR TS 38.300) NTN Stage 2 Update (Huawei) | other |
| [R3-214614](file:///D%3A%5C%E4%BC%9A%E8%AE%AE%E7%A1%AC%E7%9B%98%5CTSGR3_114-e%5CDocs%5CR3-214614.zip) | Clarification of NAS Node Selection Function for NTN nodes providing access over multiple countries (Qualcomm Incorporated, Nokia, Nokia Shanghai Bell, Huawei) | CR0029r5, TS 38.410 v16.4.0, Rel-17, Cat. C |
| [R3-214664](file:///D%3A%5C%E4%BC%9A%E8%AE%AE%E7%A1%AC%E7%9B%98%5CTSGR3_114-e%5CDocs%5CR3-214664.zip) | Support of NTN RAT identification and NTN RAT restrictions (Qualcomm Incorporated, Huawei, Thales, , Ericsson, Nokia, Nokia Shanghai Bell, CATT) | CR0490r7, TS 38.413 v16.7.0, Rel-17, Cat. B |
| [R3-215100](file:///D%3A%5C%E4%BC%9A%E8%AE%AE%E7%A1%AC%E7%9B%98%5CTSGR3_114-e%5CDocs%5CR3-215100.zip) | (TP for BL CR TS 38.413) stage 3 TP for mapped CGIs (Huawei) | other |
| [R3-214615](file:///D%3A%5C%E4%BC%9A%E8%AE%AE%E7%A1%AC%E7%9B%98%5CTSGR3_114-e%5CDocs%5CR3-214615.zip) | Support of NTN RAT identification and NTN RAT restrictions (Qualcomm Incorporated, Huawei, Thales, , Ericsson, Nokia, Nokia Shanghai Bell, CATT) | CR0488r6, TS 38.423 v16.7.0, Rel-17, Cat. B |

# For the Chairman’s Notes

Propose the following:

* **Endorse draft BL CR 38.300 in [R3-214663]**
* **Endorse draft BL CR 38.410 in [R3-214614]**
* **Endorse draft BL CR 38.413 in [R3-214664]**
* **Endorse draft BL CR 38.423 in [R3-214615]**
* **Agree proposals 1, 2, 3, 5, 7, 8, 9 and 10 of Text Proposal for the draft BL CR 38.300 in [R3-215099]**

Propose to capture the following:

* **Rapporteur of the BL CR 38.300 should remove changes on changes In 16.x.4.3 and 16.x.5 and 16.x.7 in the next version of the CR.**

# 1st round discussion

## BL CR to TS 38.300

The two below TDOCs, latest version BL CR for TS 38.300 as outcome of RAN3#113-e and a text proposal:

|  |  |  |
| --- | --- | --- |
| [R3-214663](file:///D%3A%5C%E4%BC%9A%E8%AE%AE%E7%A1%AC%E7%9B%98%5CTSGR3_114-e%5CDocs%5CR3-214663.zip) | Support Non-Terrestrial Networks (Huawei, Thales, Ericsson, ZTE, Qualcomm Incorporated) | draftCR |
| [R3-215099](file:///D%3A%5C%E4%BC%9A%E8%AE%AE%E7%A1%AC%E7%9B%98%5CTSGR3_114-e%5CDocs%5CR3-215099.zip) | (TP for BL CR TS 38.300) NTN Stage 2 Update (Huawei) | other |

**Question 3.1.1: Is the draft BL CR 38.300 in [R3-214663] agreeable ?**

|  |  |  |
| --- | --- | --- |
| **Company** | **Agree/not agree** | **Comment** |
| Thales | Agree |  |
| Ericsson | Agree |  |
| CATT | Agree |  |
| Qualcomm | Agree |  |
| Nokia | Agree |  |
| ZTE | Agree |  |
| Samsung | Agree |  |
| CMCC | Agree |  |
| Huawei | Agree |  |
| Vodafone | Agree with small comments | 1. In 16.x.4.3 and 16.x.5 and 16.x.7 there are changes on changes.
2. In 16.x.6, the following two “sentences” should be joined together:

*For a RRC\_CONNECTED UE, when the gNB is configured to ensure that the UE is using an AMF that serves the country in which the UE is located.If the gNB detects that the UE is in a different country to that served by the serving AMF, it should perform an NG handover to change to an appropriate AMF.*So that they say:*For a RRC\_CONNECTED UE, when the gNB is configured to ensure that the UE is using an AMF that serves the country in which the UE is located, if the gNB detects that the UE is in a different country to that served by the serving AMF, it should perform an NG handover to change to an appropriate AMF*. |

Summary of the discussion: Unanimous support to endorse the CR

Vodafone suggested

* To remove changes on changes In 16.x.4.3 and 16.x.5 and 16.x.7 => This can be cleaned by the rapporteur.
* To modify the following sentence as follow: *“For a RRC\_CONNECTED UE, when the gNB is configured to ensure that the UE is using an AMF that serves the country in which the UE is located, ~~.I~~if the gNB detects that the UE is in a different country to that served by the serving AMF, it should perform an NG handover to change to an appropriate AMF.”* => To be discussed in the second round of this discussion.

**Question 3.1.2: Is the Text Proposal for the draft BL CR 38.300 in [R3-215099] agreeable ?**

|  |  |  |
| --- | --- | --- |
| **Company** | **Agree/not agree** | **Comment** |
| Thales | Agree |  |
| Ericsson | Partially agree | All proposals OK except:P4: we should replace the current sentence in the BL CR with “An NCGI provided to the 5GC within the User Location Information is specified in subclause 16.x.5.”P6: Agree that referring to st3 protocols in st2 is not very nice, but neither is adding semantics for single IEs according to the st2ish usage scenario. A compromise proposal could be to simplify 16.x.5 in st2 to avoid the need to add semantics. |
| CATT | Agree | Agree with the changes, and Ericsson’s suggestions are reasonable. |
| Qualcomm | Agree with comments | Tend to agree with Ericsson. Also suggest we take the FFS out of the section heading. |
| Nokia | Agree with comments | P4: it states “An NCGI provided to the 5GC is specified in subclause 16.x.5.” In 16.x.5, the mapped cell ID can also be provided to the gNB. Since this section is only about the “new” NTN ID, so this bullet may simply say “ – A Mapped Cell ID”In 16.x.5, Please change 2 “mapped cell ID” to “Mapped Cell ID” |
| ZTE | Agree with comments | The comments from Ericsson and Nokia should be considered.And one more typo comment is that the structure of the following paragraph should be corrected, i.e. the NOTE should be moved to next paragraph. |
| Samsung | Agree |  |
| CMCC | Agree with comments | Agree with Ericsson’s suggestion. |
| Huawei | Agree | We are also fine about Ericsson’s suggestion regarding P4. OK to take the FFS out of section heading and change 2 “mapped cell ID” to “Mapped cell ID” in 16.x.5.As for P6, well we are still thinking add some text in semantic description, is correct, does not harm and help to read the specification. However, following the principle of people must read stage 2 and stage 3, we can just remove the reference of Stage 2 and keep the text as it is. At lease if company are not happy add “as defined in stage 3” in the stage 2 i.e.:“The Cell Identity, as defined in stage 3, used in following cases corresponds” |

Summary of the discussion:

* There has been unanimous support to agree Proposals 1, 2, 3, 5, 7, 8, 9 and 10 of Text Proposal for the draft BL CR 38.300 in [R3-215099]
* Other changes have been suggested instead of the proposals 4 & 6 of the same TDOC:
	+ In subclause 4.x Non-Terrestrial Networks, the following is modified as follow
		- “A Mapped Cell ID ~~An NCGI~~ provided to the 5GC within the User Location Information is specified in subclause 16.x.5. ~~as specified in TS 38.413 [26] is a mapped cell ID, which corresponds to a fixed geographical area~~”
	+ In subclause 16.x.5, the following changes are proposed:
		- “~~m~~Mapped ~~c~~Cell ID”
		- “16.x.5 Signalling ~~[FFS]~~”
		- following sentence should start as new line “NOTE: The Cell Identity used for RAN Paging is assumed to typically represent a Uu Cell ID.”
		- “The Cell Identity (as defined in TS 38.413 [26]) used in following cases corresponds to a mapped cell ID…”
		- Remove reference to stage 3 specification in the sub bullet points (i.e. TS 38.413).

These other changes need to be discussed in the second round.

## BL CR to TS 38.410

The TDOC in [R3-214614] below, includes latest version BL CR for TS 38.410 as outcome of RAN3#113-e.

|  |  |  |
| --- | --- | --- |
| [R3-214614](file:///D%3A%5C%E4%BC%9A%E8%AE%AE%E7%A1%AC%E7%9B%98%5CTSGR3_113-e%5CDocs%5CR3-213152.zip) | Clarification of NAS Node Selection Function for NTN nodes providing access over multiple countries (Qualcomm Incorporated, Nokia, Nokia Shanghai Bell, Huawei) | CR0029r5, TS 38.410 v16.4.0, Rel-17, Cat. C |

**Question 3.2: Is the draft BL CR 38.410 in [R3-214614] agreeable ?**

|  |  |  |
| --- | --- | --- |
| **Company** | **Agree/not agree** | **Comment** |
| Thales | Agree | Could it be possible to add Thales among the co-sources of this CR ? |
| Ericsson | Agree |  |
| CATT | Agree | A typo, the Tdoc number should be R3-214614. |
| Qualcomm | Agree | Guess this is [3], not [1]Adding Thales is no problem, but maybe can be done when the next revision is provided. |
| Nokia | Agree |  |
| ZTE | Agree |  |
| Samsung | Agree |  |
| CMCC | Agree |  |
| Huawei | Agree |  |
| Vodafone | agree | This is the [5]th meeting for this BL CR without any change -> should we remove the editor’s note?*When the NG-RAN node is configured to ensure that the selected AMF serves the country where the UE is located, as described in TS 23.501 [8], the NG-RAN node takes into account UE location information, if available, when determining the AMF.**Editor’s note: Text may need to be revised depending on RAN2/SA2/RAN3 progress.* |

Summary of the discussion: Unanimous support to endorse the CR

Vodafone suggests to remove the Editor’s note “Text may need to be revised depending on RAN2/SA2/RAN3 progress”. This is to be discussed during 2nd round.

## BL CR to TS 38.413

The two below TDOCs, latest version BL CR for TS 38.413 as outcome of RAN3#113-e and a text proposal:

|  |  |  |
| --- | --- | --- |
| [R3-214664](file:///D%3A%5C%E4%BC%9A%E8%AE%AE%E7%A1%AC%E7%9B%98%5CTSGR3_114-e%5CDocs%5CR3-214664.zip) | Support of NTN RAT identification and NTN RAT restrictions (Qualcomm Incorporated, Huawei, Thales, , Ericsson, Nokia, Nokia Shanghai Bell, CATT) | CR0490r7, TS 38.413 v16.7.0, Rel-17, Cat. B |
| [R3-215100](file:///D%3A%5C%E4%BC%9A%E8%AE%AE%E7%A1%AC%E7%9B%98%5CTSGR3_114-e%5CDocs%5CR3-215100.zip) | (TP for BL CR TS 38.413) stage 3 TP for mapped CGIs (Huawei) | Other |

**Question 3.3.1: Is the draft BL CR 38.413 in [R3-214664] agreeable ?**

|  |  |  |
| --- | --- | --- |
| **Company** | **Agree/not agree** | **Comment** |
| Thales | Agree |  |
| Ericsson | Agree |  |
| CATT | Agree |  |
| Qualcomm | Agree |  |
| Nokia | Agree |  |
| ZTE | Agree |  |
| Samsung | Agree |  |
| CMCC | Agree |  |
| Huawei | Agree |  |
| Vodafone | agree |  |

Summary of the discussion: Unanimous support to endorse the CR

**Question 3.3.2: Is the Text Proposal for the draft BL CR 38.413 in [R3-215100] agreeable ?**

|  |  |  |
| --- | --- | --- |
| **Company** | **Agree/not agree** | **Comment** |
| Thales | Agree |  |
| Ericsson | Disagree | This TP is not really needed if we can simplify Sec. 16.x.5 in the st2 description: then we could avoid adding semantics all over the place. See also our comment to 5099. |
| CATT | Disagree | The CR aims to link NR CGI to mapped NR cell for NTN in the stage 3, but there’s no such kind of definition on what’s the mapped NR cell. As in the stage 2 BL CR, it has clearly defined Mapped Cell ID, and specified how it should be used, thus, no need the duplication work in stage 3. |
| Qualcomm | So-so | My thought was « For NTN, identifies a mapped cell as defined in TS 38.300 »But also ok to avoid if possible to work from 38.300, as per Ericsson comments |
| Nokia |  | This seems a duplication to Stage-2. Suggest to just keep related text in Stage-2 (e.g. the text of current BL CR). Otherwise, whenever a change is made, e.g. use mapped cell ID in another NGAP message, we have to update both Stage-2 and Stage-3.  |
| ZTE |  | Agree with the majority, this TP may not needed. |
| Samsung |  | Agree with the majority. |
| CMCC |  | Agree with the majority, this TP may not needed. |
| Huawei |  | Just to make it clear, there is no duplication and the proposal is technically correct because the semantics of these IEs are not the same when you operate NTN.Say that we do not have problem with the majority to not help the specification reading.  |

Summary of the discussion: Given majority of disagreements, the **Text Proposal for the draft BL CR 38.413 in [R3-215100] is not approved**

## BL CR to TS 38.423

The TDOC in [[R3-214615](file:///D%3A%5C%E4%BC%9A%E8%AE%AE%E7%A1%AC%E7%9B%98%5CTSGR3_114-e%5CDocs%5CR3-214615.zip)] and below includes latest version BL CR for TS 38.423 as outcome of RAN3#112-e.

|  |  |  |
| --- | --- | --- |
| [R3-214615](file:///D%3A%5C%E4%BC%9A%E8%AE%AE%E7%A1%AC%E7%9B%98%5CTSGR3_114-e%5CDocs%5CR3-214615.zip) | Support of NTN RAT identification and NTN RAT restrictions (Qualcomm Incorporated, Huawei, Thales, , Ericsson, Nokia, Nokia Shanghai Bell, CATT) | CR0488r6, TS 38.423 v16.7.0, Rel-17, Cat. B |

**Question 3.4: Is the draft BL CR 38.423 in [R3-214615] agreeable ?**

|  |  |  |
| --- | --- | --- |
| **Company** | **Agree/not agree** | **Comment** |
| Thales | Agree |  |
| Ericsson | Agree |  |
| CATT | Agree  |  |
| Qualcomm | Agree |  |
| Nokia | Agree |  |
| ZTE | Agree |  |
| Samsung | Agree |  |
| CMCC | Agree |  |
| Huawei | Agree |  |
| Vodafone | Agree |  |

Summary of the discussion: Unanimous support to endorse the CR

# 2nd round discussion

## BL CR to TS 38.300

* In draft CR 38.300, the following changes are proposed:
	+ In subclause 4.x Non-Terrestrial Networks, the following is modified as follow
		- “A Mapped Cell ID ~~An NCGI~~ provided to the 5GC within the User Location Information is specified in subclause 16.x.5. ~~as specified in TS 38.413 [26] is a mapped cell ID, which corresponds to a fixed geographical area~~”
	+ In subclause 16.x.5, the following changes are proposed:
		- “~~m~~Mapped ~~c~~Cell ID”
		- “16.x.5 Signalling ~~[FFS]~~”
		- following sentence should start as new line “NOTE: The Cell Identity used for RAN Paging is assumed to typically represent a Uu Cell ID.”
		- “The Cell Identity (as defined in TS 38.413 [26]) used in following cases corresponds to a mapped cell ID…”
		- “For a RRC\_CONNECTED UE, when the gNB is configured to ensure that the UE is using an AMF that serves the country in which the UE is located, ~~.I~~if the gNB detects that the UE is in a different country to that served by the serving AMF, it should perform an NG handover to change to an appropriate AMF.”

**Question 4.1: Are the proposed changes to the draft BL CR 38.300 in the endorsed [R3-214663] agreeable ?**

|  |  |  |
| --- | --- | --- |
| **Company** | **Agree/not agree** | **Comment** |
| Thales | Agree |  |
| Qualcomm | Looks ok | It’s beginning to be hard to check without an actual CR, but above generally looks ok |
| Nokia | Agree with comments | OK, except the changes to 4.x. The text is not correct. 4.x is about the new ID. The mapped cell ID is the new ID. The text only describe the new ID is the one in the ULI. But this mapped cell ID can be sent also from AMF to gNB. Please change it to: For NTN, the following applies in addition to Network Identities as described in clause 8.2: - A Tracking Area corresponds to a fixed geographical area. Any respective mapping is configured in the RAN; - A Mapped Cell ID specified in subclause 16.x.5~~n NCGI provided to the 5GC within the User Location Information as specified in TS 38.413 [26] is a mapped cell ID, which corresponds to a fixed geographical area~~. |
| Huawei | Agree | For better reading, we have uploaded a draft TP for review. As for Nokia’s concern, let’s check the opinions of other companies. If this is agreed, we will change as required for sure. |

## BL CR 38.410

**Question 4.2: Do you agree to remove the Editor’s note “Text may need to be revised depending on RAN2/SA2/RAN3 progress” from draft BL CR 38.410 in [R3-214614] ?**

|  |  |  |
| --- | --- | --- |
| **Company** | **Agree/not agree** | **Comment** |
| Thales | Agree |  |
| Qualcomm | Agree |  |
| Nokia | Agree |  |
| Huawei | Agree |  |

# Reference

[1] R3-214663 Support Non-Terrestrial Networks (Huawei, Thales, Ericsson, ZTE, Qualcomm Incorporated) draftCR

[2] R3-215099 (TP for BL CR TS 38.300) NTN Stage 2 Update (Huawei) other

[3] R3-214614 Clarification of NAS Node Selection Function for NTN nodes providing access over multiple countries (Qualcomm Incorporated, Nokia, Nokia Shanghai Bell, Huawei) CR0029r5, TS 38.410 v16.4.0, Rel-17, Cat. C

[4] R3-214664 Support of NTN RAT identification and NTN RAT restrictions (Qualcomm Incorporated, Huawei, Thales, , Ericsson, Nokia, Nokia Shanghai Bell, CATT) CR0490r7, TS 38.413 v16.7.0, Rel-17, Cat. B

[5] R3-215100 (TP for BL CR TS 38.413) stage 3 TP for mapped CGIs (Huawei) other

[6] R3-214615 Support of NTN RAT identification and NTN RAT restrictions (Qualcomm Incorporated, Huawei, Thales, , Ericsson, Nokia, Nokia Shanghai Bell, CATT) CR0488r6, TS 38.423 v16.7.0, Rel-17, Cat. B

***END***