3GPP TSG-RAN WG3 Meeting #114bis-e [R3-221105](file:///D:\My_work\TSGR1-108-eMeeting-20220110\RAN3-114bis\Inbox\R3-221105.zip)

Online, 17 – 26 January 2022

**Agenda item: 9.3.5.1**

**Source: Huawei (moderator)**

**Title: Summary of offline:** **Retrieve UE context for NPN only cell**

**Document for: Discussion and Decision**

# 1 Introduction

This paper summarizes the following email discussion:

**CB: # 95\_UEContextNPN**

**- Check the solutions from last meeting and try to converge on the solution, no matter in RAN3 or other group**

**- Close the topic in this meeting**

(HW - moderator)

Summary of offline disc [R3-221105](Inbox\R3-221105.zip)

# 2 For the Chair’s Notes

TBD

# 3 Discussion (Phase 1)

Based on the online discussion, the following issue seems clear to all companies (also captured at the previous meeting):

**The issue is acknowledged: How could the anchor NG-RAN node acquires the PCI and ARFCN information based on the first PLMN Cell ID to calculate the target key in case of the NPN-only cell?**

Then we can go directly to the candidate solutions, and down-select solutions within RAN3 remit. And then we can close this topic at this meeting.

* **Option 1:** Include the PCI/AFRCN-DL in the **Retrieve UE Context Request** message as proposed in R3-215160;
* **Option 2**: Set the dummy value to be the same as the first entry in the NPN list;
* **Option 3**: Update the procedure/semantics descriptions;
* **Option 4**: Introduce new indication at Xn setup/update procedures (either ***NR Cell Identity of First PLMN*** IE corresponding to the first PLMN Identity broadcasted in SIB1 or ***NR CGI*** IE including the cellIdentity corresponding to the first PLMN Identity and the first PLMN Identity in SIB1);
* **Option 5**: others, e.g., ask SA3 to update the security key generation in case of NPN only cell.
* ~~Option 6: Request RAN2 to use the cell corresponding to the first NPN Identity in SIB1 as the target physical cell.~~

The moderator intends to provide some initial analysis, based on the analysis in R3-220683

* The **first** option could work.
* The **second** option also could work. But this relies on the implementation (not defined in any specs), and this is not a standard solution. This cannot be always ensured by the inter-operation case. Importantly this solution has RAN2 impact: it mandates that NPN only cell broadcast the first cell identity in the *plmn-IdentityInfoList* the same as the first cell identity in the *npn-IdentityInfoList-r16*.
* The **third** option to update the semantic descriptions could not work. As given below, overall twelve PLMN/NIDs could be broadcasted. In case of an NPN-only cell, the first PLMN Identity is not considered as within the twelve PLMN/NIDs in the Broadcast PLMN Identity Info List NR IE.

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| --- | --- | --- | --- | --- | --- | --- |
| **Broadcast PLMN Identity Info List NR** |  | *0..<maxnoofBPLMNs>* |  | This IE corresponds to the *PLMN-IdentityInfoList* IE and the *NPN-IdentityInfoList* IE (if available) in *SIB1* as specified in TS 38.331 [8]. All PLMN Identities and associated information contained in the *PLMN-IdentityInfoList* IE and NPN identities and associated information contained in the *NPN-IdentityInfoList* IE (if available) are included and provided in the same order as broadcast in SIB1.  NOTE: In case of NPN-only cell, the PLMN Identities and associated information contained in the *PLMN-IdentityInfoList* IE are not included. | YES | ignore |

* The **fourth** option could work. And this issue can be resolved by RAN3 itself.
* The **fifth** option seems require other group involvement (e.g., SA3).

**Question 1: Please provide your preference for the above option(s), or any other solution.**

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| --- | --- |
| **Company** | **Comments** |
| Huawei | Both Option 4 and option 1 are fine to us.  For option 4, either the ***NR CGI*** IE or the ***NR Cell Identity of First PLMN*** IE is fine. |
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| Moderator Summary:   * TBD | |

# 4 Discussion (Phase 2), if needed

TBD

# 5 Conclusions, Recommendations

TBD

# References

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| [R3-220683](Docs\R3-220683.zip) | Retrieve UE context for NPN only cell (Huawei, Deutsche Telekom, Orange) | Discussion  Nok: Do not you need to add NCGI instead of CID? Another option is to update in TS33.501?  ZTE: No impact on RAN3, it can be discussed in RAN2  CATT: Prefer to let RAN2 check the issue  E///: Prefer to use option2  Qualcomm: Can work on dummy value solution and prefer to discuss this in RAN3  **CB: # 95\_UEContextNPN**  **- Check the solutions from last meeting and try to converge on the solution, no matter in RAN3 or other group**  **- Close the topic in this meeting**  (HW - moderator)  Summary of offline disc [R3-221105](Inbox\R3-221105.zip) |
| [R3-220684](Docs\R3-220684.zip) | Retrieve UE context for NPN only cell (Huawei, Deutsche Telekom, Orange) | CR0734r, TS 38.423 v16.8.0, Rel-16, Cat. F |