3GPP TSG-RAN WG3 Meeting #116-e R3-223763

Online, 9-19 May 2022

**Agenda item: 9.3.9**

**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: # 58\_NPNOnlyCell**

**- Evaluate the solutions and make the decision**

(HW - moderator)

Summary of offline disc [R3-223763](https://telekom-my.sharepoint.de/personal/zimmermanng_telekom_de/Documents/Int_Gremien/3GPP/RAN3/2022/RAN3%23116-E/Inbox/Drafts/CB%20%23%2058_NPNOnlyCell/Inbox/R3-223763.zip)

# 2 For the Chair’s Notes

**Proposal: Agree the LS to RAN2 in R3-223928 on NPN only cell.**

# 4 Discussion (Phase 2)

Since not many comments are received in the first-round, as suggested by Deutsche Telekom, the moderator prepares a draft LS to RAN2 (uploaded in the draft folder), to move forward.

Companies can provide comments below, or directly revise the draft LS. Note that you can continue to comment to the questions raised in the first-round.

**Question 1: Do you agree to send LS to RAN2, or if any other comments/way forwards?**

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| **Company** | **Comments** |
| Huawei | Yes.  We can let RAN2 decide the feasibility of the “implementation” based solution, and check if there is any impact on RAN2 specification.  Then we can continue with our RAN3 based solution if RAN2 answers otherwise.  It would be appreciated we can go ahead for this meeting. |
| Ericsson | fine, but see suggested modifications |
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| Moderator Summary:   * See the proposal in section 2. | |

# 3. Discussion (Phase 1)

Based on the previous discussions, the following issue is very 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?**

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| Minutes in previous meetings:  No need to involve with RAN2 with the given analysis.  Down-select the two options at the next meeting.  Option 2: Add a note “In case of NPN-only cell, it is assumed that SIB1 contains the same value included in the CellIdentity in the first entry of the NPN-IdentityInfoList also in the first entry of the PLMN-IdentityInfoList.”;  Option 4: introduce a new NR CGI IE (including the first PLMN Identity and the first NR Cell Identity in SIB1) at Xn setup/RAN configuration update message.  To be continued at this basis… |

As indicated in R3-223462, there are two options below:

* **Option 2: introduce a note in the *Served Cell Information NR* IE**
  + “NOTE 2: In case of NPN-only cells the SIB1 configuration replicates the content of the cellIdentity-r16 of the first entry in the npn-IdentityInfoList-r16 into the cellIdentity of the first entry of the plmn-IdentityInfoList.”
* **Option 4: introduce a new IE in the *Served Cell Information NR* IE**
  + “Include the NR CGI of First PLMN in the Served Cell Information NR in case of NPN-only cell.”

Also in R3-223462, it provides some pros/cons analysis.

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|  | Pros | Cons |
| Option 2 -  A new Note | * no additional IEs to be defined | * may require RAN2 work and involvement * impose restrictions on the assignment of Cell IDs |
| Option 4 - Signalling | * no RAN2 work and involvement * allow flexible assignment of Cell IDs | * new IEs to be defined over the XnAP |

The moderator understands that companies views were already collected at the previous meeting, and appreciates your further input to close this topic.

**Question 1: which option is your preferred option, or which option is not acceptable, and why?**

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| **Company** | **Comments** |
| Huawei | Option 4 is preferred as indicated in R3-223462. |
| Deutsche Telekom | Due to reasons listed in the table above (taken from R3-223462), we have a preference for Option 4 to avoid any potential RAN2 involvement. |
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| Moderator Summary:   * see the discussion in 2nd round. | |

If the situation is not changed compared with the previous meeting, then we can consider potential way-forward, and close this topic.

Below provides possible way-forward for your consideration:

* **WF#1**: Leave as it is (i.e. no further action)
* **WF#2**: MCC minute in Chairman notes: It is up to network implementation to determine the target key for NPN only cell case in case of UE context retrieval procedure (maybe updated based on further input)
* **WF#3**: others?

**Question: Please provide your preference of way forward, or any other suggestions to be discussed at the 2nd round.**

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| **Company** | **Comments** |
| Deutsche Telekom | WF#1 and WF#2 are for us not the right ways to proceed. The note for Option 2 as listed in R3-223462 could be a compromise, but in that case RAN3 has to discuss how to proceed with RAN2 and possible change in TS 38.331 (LS to provide the discussion result?). |
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| Moderator Summary:   * See the discussion in 2nd round. | |

# 4 Discussion (Phase 2)

# 5 Conclusions, Recommendations

TBD

# References

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| [R3-223462](https://telekom-my.sharepoint.de/personal/zimmermanng_telekom_de/Documents/Int_Gremien/3GPP/RAN3/2022/RAN3%23116-E/Inbox/Drafts/CB%20%23%2058_NPNOnlyCell/Docs/R3-223462.zip) | Retrieve UE context for NPN only cell (Huawei, Deutsche Telekom, Orange, Nokia, Nokia Shanghai Bell) | Discussion  E///: Signaling solution is not acceptable  ZTE: Prefer Op2 without any signaling impact on RAN2 and RAN3  **CB: # 58\_NPNOnlyCell**  **- Evaluate the solutions and make the decision**  (HW - moderator)  Summary of offline disc [R3-223763](https://telekom-my.sharepoint.de/personal/zimmermanng_telekom_de/Documents/Int_Gremien/3GPP/RAN3/2022/RAN3%23116-E/Inbox/Drafts/CB%20%23%2058_NPNOnlyCell/Inbox/R3-223763.zip) |
| [R3-223463](https://telekom-my.sharepoint.de/personal/zimmermanng_telekom_de/Documents/Int_Gremien/3GPP/RAN3/2022/RAN3%23116-E/Inbox/Drafts/CB%20%23%2058_NPNOnlyCell/Docs/R3-223463.zip) | Retrieve UE context for NPN only cell (Huawei, Deutsche Telekom, Orange, Nokia, Nokia Shanghai Bell) | CR0734r3, TS 38.423 v16.9.0, Rel-16, Cat. F |
| [R3-223464](https://telekom-my.sharepoint.de/personal/zimmermanng_telekom_de/Documents/Int_Gremien/3GPP/RAN3/2022/RAN3%23116-E/Inbox/Drafts/CB%20%23%2058_NPNOnlyCell/Docs/R3-223464.zip) | Retrieve UE context for NPN only cell (Huawei, Deutsche Telekom, Orange, Nokia, Nokia Shanghai Bell) | CR0816r, TS 38.423 v17.0.0, Rel-17, Cat. A |