**3GPP TSG RAN Meeting #100 RP-23xxxx**

**Taipei, June 12-14, 2023**

## Status Report to TSG

**Agenda item:** **9.3.3.7**

|  |  |
| --- | --- |
| **WI / SI Name** | Non-Public Networks Phase 2: NG-RAN aspects |
| included in this status report | Study Item: No | Core part: Yes | Performance part:No | Testing part:No |
| **Acronym** | eNPN\_Ph2-NGRAN-Core |
| **Unique ID** | 991138 |
| **TSG Tdoc of latest approved WI/SI description (if any)** | RP-230788 |
| **Target Completion Date****(indicate if changed)** | Study Item: NA | Core part: 09/2023 | Performance part: NA | Testing part: NA |
| **Overall Completion level** | Study Item: NA | Core part: 90% | Performance Part: NA | Testing part: NA |

Note: Overall completion level percentage numbers should use one of the colors below:

* xx%: Normal progress, no RAN plenary action needed
* xx%: Progress behind schedule, may need RAN plenary intervention. If so, SR should clearly define requested action
* xx%: Progress critically behind, RAN plenary shall intervene. SR should define requested action

**Source:**

|  |  |
| --- | --- |
| **Leading WG** | RAN WG3 |
| **Rapporteur** | **Name** | Shengnan Liu |
| **Company** | China Telecom |
| **Email** | liushn@chinatelecom.cn |

## 1 Work plan related evaluation

|  |  |
| --- | --- |
| **Do you want to modify the time budget for this WI/SI compared to what was endorsed at the last RAN meeting?** | No |

*If you answered No: Then please remove the Excel file from the zip file of this status report.*

*If you answered Yes: Then please fill out the attached Excel template to request a modification of the time budgets for your WI /SI. The Excel table has to be filled out for all affected RAN WGs and up to the target date of the WI/SI. The basis are the endorsed time budgets of the last RAN meeting. Please highlight all changes of the values.
 One time unit (TU) corresponds to ~ 2 hours in the meeting.
 If this status report covers a WI with Core and Performance part, then please have one line for each in the attached Excel table.
 Note: If no Excel table is attached, then this means no time budget change.*

## 2. Detailed progress in RAN WGs since last TSG meeting (for all involved WGs)

## 2.1 RAN1

#### 2.1.1 Agreements

#### 2.1.2 Remaining Open issues

## 2.2 RAN2

#### 2.2.1 Agreements

RAN2 #121bis-e:

RAN2 assumes that the following need to be addressed

* For TS 38.304, the impact to RAN2 is on the following to extend equivalent PLMN to also SNPN:

Equivalent SNPN list definition

NAS interactions with AS for equivalent SNPN

Suitable cell definition while operating in SNPN access mode

Suitability check

Intra-frequency Reselection Indication

* For TS 38.331, to extend the cell barring for IAB to also if the selected SNPN is equivalent SNPN.

RAN2 #122:

* R2 assumes that No new AS UE capability (signalled) is needed for supporting R18 eNPN features. FFS any 38.306 impact for conditional UE cap dependent on NAS cap.
* The draft CRs to TS 38.304 ([R2-2306801](file:///C%3A%5CUsers%5Cjohan%5COneDrive%5CDokument%5C3GPP%5Ctsg_ran%5CWG2_RL2%5CRAN2%5CDocs%5CR2-2306801.zip)) and TS 38.331 ([R2-2306832](file:///C%3A%5CUsers%5Cjohan%5COneDrive%5CDokument%5C3GPP%5Ctsg_ran%5CWG2_RL2%5CRAN2%5CDocs%5CR2-2306832.zip)) are endorsed.

#### 2.2.2 Remaining Open issues

* Stage-2 impact on introduction of R18 eNPN.
* FFS any 38.306 impact for conditional UE cap dependent on NAS cap.

## 2.3 RAN3

#### 2.3.1 Agreements

RAN3#119bis-e:

* The *equivalent SNPNs* IE is introduced *NPN Mobility Information* IE contained in the *Mobility Restriction List* IE over XnAP and NGAP.
* To support the NG based mobility across SNPNs, the *Selected NID* IE is introduced in the current *Target ID* IE contained in the HANDOVER REQUIRED message.
* To support Xn-based HO across equivalent SNPNs, there is no need to add a new selected SNPN ID in the HANDOVER REQUEST message, because the MRL can indicate the selected SNPN.
* To support non-3GPP access for SNPN services, a non-3GPP access specific selected NID should be added in the INITIAL UE MESSAGE over NG interface.
* BL CRs to TS 38.300, TS38.423, TS38.413 and TS29.413 are endorsed.

RAN3 #120:

* BL CRs to TS 38.300, TS38.423, TS38.413 and TS29.413 are endorsed.
* Agree to add Selected NID IE in the top level of the INITIAL UE MESSAGE message.
* TP R3-233363 for BLCR TS38.413, TP R3-233400 for BLCR TS 38.300 and TP R3-233364 for BLCR TS 29.413 are agreed.

#### 2.3.2 Remaining Open issues

* FFS on the inclusion of Selected NID in S-NODE ADDITION REQUEST and S-NODE MODIFICATION REQUEST in XnAP.

## 2.4 RAN4

#### 2.4.1 Agreements

#### 2.4.2 Remaining Open issues

## 2.5 RAN5

#### 2.5.1 Agreements

#### 2.5.2 Remaining Open issues

#### 2.5.3 Remaining Open issues with cross-WG dependencies

## 2.6 RAN6

#### 2.6.1 Agreements

#### 2.6.2 Remaining Open issues

## 3. Detailed progress in SA/CT WGs since last TSG meeting (for all involved WGs)

## 3.1 SAx/CTs

#### 3.1.1 Agreements with cross-TSG impacts

#### 3.1.2 Remaining Open issues with cross-TSG impacts

## 4. References

NOTE: This can be e.g. a list of all related Tdocs in the affected WGs since last TSG, references to LSs, produced TRs/TSs, the work/study item description or status reports of previous TSGs.

**RAN2 #121 bis-e:**

1. [R2-2302419](file:///C%3A%5CUsers%5Cmtk65284%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2_RL2%5CTSGR2_121bis-e%5CDocs%5CR2-2302419.zip) Reply LS on RAN impact for NPN enhancement in Rel-18 (R3-230813; contact: Qualcomm) RAN3 LS in Rel-18 eNPN\_Ph2 To:SA2 Cc:RAN2
2. [R2-2302447](file:///C%3A%5CUsers%5Cmtk65284%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2_RL2%5CTSGR2_121bis-e%5CDocs%5CR2-2302447.zip) Reply LS on Progress and open issues for NPN enhancements in Rel-18 (S2-2303689; contact: Qualcomm) SA2 LS in Rel-18 FS\_eNPN\_Ph2, eNPN\_Ph2 To:SA3 Cc:SA1, CT1, CT3, CT4, RAN2, RAN3
3. [R2-2304143](file:///C%3A%5CUsers%5Cmtk65284%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2_RL2%5CTSGR2_121bis-e%5CDocs%5CR2-2304143.zip) Discussion on further enhancement of NPN in R18 China Telecom discussion Rel-18
4. [R2-2303812](file:///C%3A%5CUsers%5Cmtk65284%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2_RL2%5CTSGR2_121bis-e%5CDocs%5CR2-2303812.zip) (draft CR to TS 38.300) On introduction of R18 eNPN China Telecom,ZTE Corporation, Sanechips, CATT draftCR Rel-18 38.300 17.4.0 B
5. [R2-2303813](file:///C%3A%5CUsers%5Cmtk65284%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2_RL2%5CTSGR2_121bis-e%5CDocs%5CR2-2303813.zip) Draft CR to TS 38.304 on introduction of R18 eNPN China Telecom, ZTE Corporation, Sanechips, CATT, Huawei, HiSilicon draftCR Rel-18 38.304 17.4.0 B
6. [R2-2304119](file:///C%3A%5CUsers%5Cmtk65284%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2_RL2%5CTSGR2_121bis-e%5CDocs%5CR2-2304119.zip) Discussion and text proposal for NPN Rel-18 Ericsson discussion Rel-18
7. [R2-2302913](file:///C%3A%5CUsers%5Cmtk65284%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2_RL2%5CTSGR2_121bis-e%5CDocs%5CR2-2302913.zip) RAN2 impact on Rel-18 NPN enhancement Intel Corporation discussion Rel-18
8. [R2-2302999](file:///C%3A%5CUsers%5Cmtk65284%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2_RL2%5CTSGR2_121bis-e%5CDocs%5CR2-2302999.zip) RAN2 Impact on Further Enhancement NPN CATT discussion Rel-18
9. [R2-2303104](file:///C%3A%5CUsers%5Cmtk65284%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2_RL2%5CTSGR2_121bis-e%5CDocs%5CR2-2303104.zip) Discussion on RAN impact for NPN enhancement in Rel-18 Huawei, HiSilicon discussion Rel-18
10. [R2-2303295](file:///C%3A%5CUsers%5Cmtk65284%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2_RL2%5CTSGR2_121bis-e%5CDocs%5CR2-2303295.zip) RAN2 impacts on R18 eNPN ZTE Corporation, Sanechips discussion Rel-18
11. [R2-2303807](file:///C%3A%5CUsers%5Cmtk65284%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2_RL2%5CTSGR2_121bis-e%5CDocs%5CR2-2303807.zip) General considerations on potential RAN2 works for NPN enhancement in Rel-18 Samsung Electronics Austria discussion Rel-18
12. [R2-2303905](file:///C%3A%5CUsers%5Cmtk65284%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2_RL2%5CTSGR2_121bis-e%5CDocs%5CR2-2303905.zip) Discussion on further enhancement of private network support for NG-RAN vivo discussion Rel-18

**RAN2 #122:**

1. [R2-2306801](file:///C%3A%5CUsers%5Cjohan%5COneDrive%5CDokument%5C3GPP%5Ctsg_ran%5CWG2_RL2%5CRAN2%5CDocs%5CR2-2306801.zip) Draft CR to TS 38.304 on introduction of R18 eNPN China Telecom, ZTE Corporation, Sanechips, CATT, Huawei, HiSilicon draftCR Rel-18 38.304 17.4.0 B eNPN\_Ph2-NGRAN-Core
2. [R2-2306832](file:///C%3A%5CUsers%5Cjohan%5COneDrive%5CDokument%5C3GPP%5Ctsg_ran%5CWG2_RL2%5CRAN2%5CDocs%5CR2-2306832.zip) (draft CR to TS 38.331) On support of equivalent SNPN China Telecom draftCR Rel-18 38.331 17.4.0 B eNPN\_Ph2-NGRAN-Core
3. [R2-2306178](file:///C%3A%5CUsers%5Cjohan%5COneDrive%5CDokument%5C3GPP%5Ctsg_ran%5CWG2_RL2%5CRAN2%5CDocs%5CR2-2306178.zip) Discussion on further enhancement of NPN in R18 China Telecom discussion Rel-18 eNPN\_Ph2-NGRAN-Core
4. [R2-2306179](file:///C%3A%5CUsers%5Cjohan%5COneDrive%5CDokument%5C3GPP%5Ctsg_ran%5CWG2_RL2%5CRAN2%5CDocs%5CR2-2306179.zip) Draft CR to TS 38.304 on introduction of R18 eNPN China Telecom, ZTE Corporation, Sanechips, CATT, Huawei, HiSilicon draftCR Rel-18 38.304 17.4.0 B eNPN\_Ph2-NGRAN-Core
5. [R2-2306454](file:///C%3A%5CUsers%5Cjohan%5COneDrive%5CDokument%5C3GPP%5Ctsg_ran%5CWG2_RL2%5CRAN2%5CDocs%5CR2-2306454.zip) (draft CR to TS 38.331) On support of equivalent SNPN China Telecom draftCR Rel-18 38.331 17.4.0 B eNPN\_Ph2-NGRAN-Core
6. [R2-2304778](file:///C%3A%5CUsers%5Cjohan%5COneDrive%5CDokument%5C3GPP%5Ctsg_ran%5CWG2_RL2%5CRAN2%5CDocs%5CR2-2304778.zip) Remaining issues on Further Enhancement NPN CATT discussion Rel-18
7. [R2-2305140](file:///C%3A%5CUsers%5Cjohan%5COneDrive%5CDokument%5C3GPP%5Ctsg_ran%5CWG2_RL2%5CRAN2%5CDocs%5CR2-2305140.zip) Discussion on RAN impacts of further NPN enhancement Lenovo discussion Rel-18 eNPN\_Ph2-NGRAN-Core
8. [R2-2306073](file:///C%3A%5CUsers%5Cjohan%5COneDrive%5CDokument%5C3GPP%5Ctsg_ran%5CWG2_RL2%5CRAN2%5CDocs%5CR2-2306073.zip) Discussion on RAN impact for NPN enhancement in Rel-18 Huawei, HiSilicon discussion Rel-18 eNPN\_Ph2
9. [R2-2306214](file:///C%3A%5CUsers%5Cjohan%5COneDrive%5CDokument%5C3GPP%5Ctsg_ran%5CWG2_RL2%5CRAN2%5CDocs%5CR2-2306214.zip) Discussion on further enhancement of private network support for NG-RAN vivo discussion Rel-18
10. [R2-2306441](file:///C%3A%5CUsers%5Cjohan%5COneDrive%5CDokument%5C3GPP%5Ctsg_ran%5CWG2_RL2%5CRAN2%5CDocs%5CR2-2306441.zip) Discussion for NPN Rel-18 Ericsson discussion Rel-18 eNPN\_Ph2-NGRAN-Core
11. [R2-2306180](file:///C%3A%5CUsers%5Cjohan%5COneDrive%5CDokument%5C3GPP%5Ctsg_ran%5CWG2_RL2%5CRAN2%5CDocs%5CR2-2306180.zip) (draft CR to TS 38.300) On introduction of R18 eNPN China Telecom, ZTE Corporation, Sanechips, CATT draftCR Rel-18 38.300 17.4.0 B eNPN\_Ph2-NGRAN-Core
12. [R2-2306442](file:///C%3A%5CUsers%5Cjohan%5COneDrive%5CDokument%5C3GPP%5Ctsg_ran%5CWG2_RL2%5CRAN2%5CDocs%5CR2-2306442.zip) 38.300 DraftCR for NPN Rel-18 Ericsson draftCR Rel-18 38.300 17.4.0 B eNPN\_Ph2-NGRAN-Core
13. [R2-2306443](file:///C%3A%5CUsers%5Cjohan%5COneDrive%5CDokument%5C3GPP%5Ctsg_ran%5CWG2_RL2%5CRAN2%5CDocs%5CR2-2306443.zip) 38.304 DraftCR for NPN Rel-18 Ericsson draftCR Rel-18 38.304 17.4.0 B eNPN\_Ph2-NGRAN-Core
14. [R2-2306444](file:///C%3A%5CUsers%5Cjohan%5COneDrive%5CDokument%5C3GPP%5Ctsg_ran%5CWG2_RL2%5CRAN2%5CDocs%5CR2-2306444.zip) 38.331 DraftCR for NPN Rel-18 Ericsson draftCR Rel-18 38.331 17.4.0 B eNPN\_Ph2-NGRAN-Core

**RAN3#119bis-e:**

1. R3-231250 Introduction of equivalent SNPNs Ericsson
2. R3-231254 Introduction of Rel-18 eNPN work in RAN3 specifications Ericsson
3. R3-231289 Support of Further Enhancements of NPN for NG-RAN Nokia, Nokia Shanghai Bell
4. R3-231290 Introduction of Further Enhancements of NPN for NG-RAN Nokia, Nokia Shanghai Bell
5. R3-231338 Discussion on Enhanced support of NPN Samsung
6. R3-231349 Equivalent SNPNs and non-3GPP access for SNPN Qualcomm Technologies Int
7. R3-231385 introduction of eNPN NEC
8. R3-231386 Support for non-3GPP access for SNPN (CR to 29.413) NEC
9. R3-231410 (TP to TS 38.423, 38.300 and 29.413) Support of the enhanced NPN phase 2 Huawei
10. R3-231411 Support of the enhanced NPN phase 2 Huawei
11. R3-231506 On introduction of R18 eNPN China Telecom, Huawei, ZTE, CATT
12. R3-231516 Work Plan for eNPN\_Ph2-NGRAN WI China Telecommunication
13. R3-231517 Discussion on Xn/NG enhancement to support eNPN China Telecommunication
14. R3-231716 Addition for Rel-18 eNPN Samsung
15. R3-231772 (TPs to BL CRs of 38.423\_38.413\_38.300) for eNPN phase 2 ZTE
16. R3-231773 Discussion on RAN support for eNPN phase 2 ZTE
17. R3-231814 Discussion on RAN impact for NPN enhancement in Rel-18 CATT
18. R3-231815 [TP to 38413 and 38423 to NPN] Discussion on RAN imapct for NPN enhancement in Rel-18 CATT
19. R3-231817 Consideration on RAN impact of eNPN Phase 2 LG Electronics
20. R3-231898 CB: # NPN\_RANenh - Summary of email discussion China Telecom - moderator
21. R3-231967 CB: # NPN\_RANenh - Summary of email discussion China Telecom - moderator
22. R3-231977 Introduction of equivalent SNPNs Ericsson, Huawei, Nokia, Nokia Shanghai Bell, LG Electronics, Samsung, ZTE, NEC
23. R3-231978 On introduction of R18 eNPN China Telecom, Huawei, ZTE, CATT, Nokia, Nokia Shanghai Bell, LG Electronics, Samsung, NEC, Ericsson
24. R3-231979 (BL CR) Support of the enhanced NPN phase 2 ZTE
25. R3-231980 Support of the enhanced NPN phase 2 Huawei, China Telecom, Nokia, Nokia Shanghai Bell, NEC, LG Electronics, ZTE, Samsung, Ericsson

**RAN3 #120:**

1. R3-232512 (BLCR to 29.413) Support of the enhanced NPN phase 2 Huawei, China Telecom, Nokia, Nokia Shanghai Bell, NEC, LG Electronics, ZTE, Samsung, Ericsson
2. R3-232513 (BLCR to 38.300) On introduction of R18 eNPN China Telecom, Huawei, ZTE, CATT, Nokia, Nokia Shanghai Bell, LG Electronics, Samsung, NEC, Ericsson
3. R3-232514 (BLCR to 38.413) Support of the enhanced NPN phase 2 ZTE
4. R3-232515 Introduction of equivalent SNPNs Ericsson, Huawei, Nokia, Nokia Shanghai Bell, LG Electronics, Samsung, ZTE, NEC
5. R3-232715 (TP for TS 38.413) Indicating selected SNPN over NG for Further NPN Enhancements Nokia, Nokia Shanghai Bell
6. R3-232716 (TP for TS 38.423) Indicating selected SNPN over Xn for further NPN Enhancements Nokia, Nokia Shanghai Bell
7. R3-232734 Further discussion on eNPN impact on RAN specifications NEC
8. R3-232735 (TP to TS29.413 BL CR) & (TP to TS38.413 BL CR) eNPN NEC
9. R3-232784 (BLCR to 38.413) Support of the enhanced NPN phase 2 ZTE, Nokia, Nokia Shanghai Bell, Huawei, NEC, LG Electronics, Samsung
10. R3-232854 Equivalent SNPNs and non-3GPP access for SNPN Qualcomm Incorporated
11. R3-232882 (TP to eNPN\_Ph2 BLCR for TS 29.413) Support of the enhanced NPN phase 2 Huawei
12. R3-232883 (TP to eNPN\_Ph2 BLCR for TS 38.413, TS 38.423 and TS 38.300) Support of the enhanced NPN phase 2 Huawei
13. R3-232887 Remaining topics for Rel-18 eNPN work Ericsson
14. R3-232888 [TP for BL CR 38.423] Further input for eNPN\_Ph2 Ericsson
15. R3-232900 Discussion on RAN impact for NPN enhancement in Rel-18 CATT
16. R3-232901 [TP to 38.300 and 38.413] RAN impact for NPN enhancement in Rel-18 CATT
17. R3-232919 (TP for TS 38.413 BL CR) Discussion on Enhanced support of NPN BEIJING SAMSUNG TELECOM R&D
18. R3-233015 Discussion on remaining issues to support eNPN China Telecommunication
19. R3-233016 (TPs to BL CRs of 38.423/38.413/38.300) On support of eNPN China Telecommunication
20. R3-233019 Work Plan for Further Enhancement for Private Network Support for NG-RAN WI China Telecommunication
21. R3-233253 Left issues on RAN support for eNPN phase 2 ZTE
22. R3-233254 TPs to BL CRs for eNPN phase 2 ZTE
23. R3-233351 Summary of offline discussions on CB: # 28\_R18 Ericsson
24. R3-233363 (TP to eNPN\_Ph2 BLCR for TS 38.413) Support of the enhanced NPN phase 2 Huawei, Nokia, Nokia Shanghai Bell, Samsung, Ericsson, ZTE, NEC
25. R3-233364 [TP for BL CR 29.413] Remove Editor’s Note Ericsson, Huawei, ZTE, NEC
26. R3-233400 [TP to eNPN\_Ph2 BLCR for TS38.300] RAN impact for NPN enhancement in Rel-18 CATT, Huawei, Ericsson, ZTE, Nokia, Nokia Shanghai Bell, NEC