3GPP TSG-RAN WG2 Meeting #122 R2-2306546

Incheon, Korea, May 22-26, 2023

Agenda Item: 8.6

Source: Session chair (CMCC)

Title: Report from SON/MDT session

Document for: Approval

**Organizational:**

1. LSs – contact companies should flag LSs that need presenting. Otherwise we will directly note them
2. Running CRs will be endorsed to be used as baseline and moved to email discussion. Further agreements will be captured on that baseline CR.
3. Only Email discussions and summary discussions will be treated during e-meetings (indicated clearly in the meeting notes)
4. All organization emails and notes will be shared over the following email discussion throughout the two meeting weeks:
* [AT121][800][SON/MDT] Organizational Hu

Scope:

* + - Share plans for the meetings and list of ongoing email discussions for the sessions related to SON/MDT
		- Share meetings notes and agreements for review and endorsement

## 5.4 SON MDT support for NR

(NR\_SON\_MDT-Core; leading WG: RAN3; REL-16; started: Jun 19; Completed June 20; WID: RP-191776).

### 5.4.0 In-Principle-Agreed CRs

### 5.4.1 General and stage-2 corrections

Including incoming LSs, TS 37.320 corrections

### 5.4.2 TS 38.314 corrections

### 5.4.3 RRC corrections

R2-2305263 Clarification on RLF Cause Samsung discussion NR\_SON\_MDT-Core

R2-2305264 Clarification on RLF cause Samsung CR Rel-16 38.331 16.12.0 4095 - F NR\_SON\_MDT-Core

R2-2305266 Clarification on RLF cause Samsung CR Rel-16 38.331 16.12.0 4096 - F NR\_SON\_MDT-Core

R2-2305980 Correction on logging RLM resources in the RLF report Ericsson, Qualcomm discussion Rel-16 38.331 NR\_SON\_MDT-Core

R2-2305981 Correction on logging RLM resources in the RLF report Ericsson, Qualcomm discussion Rel-17 38.331 NR\_SON\_MDT-Core

R2-2305982 Correction to the setting of locationInfo in MeasResultSCG-Failure Ericsson discussion Rel-16 38.331 NR\_SON\_MDT-Core

R2-2305983 Correction to the setting of locationInfo in MeasResultSCG-Failure Ericsson discussion Rel-17 38.331 NR\_SON\_MDT-Core

R2-2306037 Correction on the release of logged measurement configuration as well as logged measurement information QUALCOMM Inc. CR Rel-16 38.331 16.12.0 4125 - F NR\_SON\_MDT-Core

R2-2306096 Discussion on location configuration for SON and MDT features Huawei, HiSilicon discussion Rel-16 NR\_SON\_MDT-Core

## 6.6 SON MDT

(NR\_ENDC\_SON\_MDT\_enh-Core; leading WG: RAN3; REL-17; WID: RP-201281)

Tdoc Limitation: 2 tdocs

### 6.6.0 In principle agreed CRs

### 6.6.1 SON Corrections

R2-2305417 Correction to NR M3 measurement Nokia, Nokia Shanghai Bell CR Rel-17 37.320 17.3.0 0124 1 F NR\_ENDC\_SON\_MDT\_enh-Core R2-2302863

=> CR is agreed

R2-2305418 Correction to timeSCGFailure Nokia, Nokia Shanghai Bell CR Rel-17 38.331 17.4.0 4020 1 F NR\_ENDC\_SON\_MDT\_enh-Core R2-2303646

=> Revised to change the procedure text. CB Friday. #566

R2-2305482 Correction on timeSinceCHO-Reconfig in TS 38.331 CATT CR Rel-17 38.331 17.4.0 4110 - F NR\_ENDC\_SON\_MDT\_enh-Core

=> CR is Agreed

R2-2305984 Correction to the handling of RLF-Report after successful HO Ericsson discussion Rel-17 38.331 NR\_ENDC\_SON\_MDT\_enh-Core

=> CB Friday #567

R2-2305985 Miscellaneous corrections on SHR Ericsson discussion Rel-17 38.331 NR\_ENDC\_SON\_MDT\_enh-Core

=> Not pursued

R2-2306394 Correction on SCG failure scenario of MHI in TS 38.331 CATT CR Rel-17 38.331 17.4.0 4148 - F NR\_ENDC\_SON\_MDT\_enh-Core

=> CR is agreed

R2-2306034 NB-IoT UE location Info in RLF report Qualcomm Incorporated discussion Rel-17

=> Postponed to next meeting

R2-2306035 Correction on UE location information in NB-IoT RLF report Qualcomm Inc. CR Rel-17 38.331 17.4.0 4124 - F NR\_ENDC\_SON\_MDT\_enh-Core

### 6.6.2 MDT Corrections

R2-2306097 Discussion on the UL PDCP packet average delay measurement of split bearer Huawei, HiSilicon discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

=> Noted

R2-2306098 Stage-2 correction on the UL PDCP packet average delay Huawei, HiSilicon CR Rel-17 37.320 17.3.0 0126 - F NR\_ENDC\_SON\_MDT\_enh-Core

=> CR is agreed.

R2-2306474 Report of new packet loss rate China Unicom report Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

=> Noted

R2-2306475 38.314 CR for the introduction of packet loss rate with delay threshold China Unicom, CATT CR Rel-17 38.314 17.2.0 0028 - B NR\_ENDC\_SON\_MDT\_enh-Core

=> CB on Friday for chair guidance.

R2-2304635 LS on Excess Packet Delay Threshold for MDT (S5-232150; contact: Nokia) SA5 LS in Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core To:RAN3 Cc:RAN2

R2-2304655 Reply LS on the user consent for trace reporting (S3-231398; contact: Huawei) SA3 LS in Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core To:RAN3 Cc:RAN2, SA5, SA1, RAN

## 7.13 Further enhancement of data collection for SON MDT in NR and EN-DC

(NR\_ENDC\_SON\_MDT\_enh2-Core; leading WG: RAN3; REL-18; WID: RP-221825)

Includes LS in’s related to AI/ML for NG-RAN

Time budget: 1 TU

Tdoc Limitation: 6 tdocs

### 7.13.5 SON for NR-U

Focus on UE impacts. RAN2/RAN3 progress should be considered.

R2-2306557 Summary of AI 7.13.5 SON for NR-U (Ericsson)

R2-2306558 Open issues and proposals on AI 7.13.5 SON for NR-U (Ericsson)

Agreements:

1 Only the preamble transmission attempts for which LBT was successful are represented in the “per RA attempt info list” for a given beam.

2 On how to represent the preamble transmission attempts blocked by LBT,

 Introduce a field (or reusing the existing field) that counts the number of preamble transmissions blocked by LBT per RA procedure, and a flag indicating transmission failures experienced right before beam switching. Details can FFS.

3 For the RA-Report, the enhancements on the handling of the “per RA attempt info list” (i.e. as per Proposal 1) apply only to the last RA procedure in the last BWP prior to the random access success.

4 For the other BWPs in which the UE experienced the consistent LBT failure, the UE logs in the RA-InformationCommon:

a. The locationAndBandwidth information of the BWP

b. The subcarrierSpacing information of the BWP

c. The absoluteFrequencyPointA information of the BWP ( How to log once for all the BWPs of the cell is FFS)

5 As baseline, RAN2 assumes the following:

a. Enhancements discussed for the RA-InformationCommon for the RA-Report are applicable also to the RLF-Report

b. The detailed “per RA attempt info” are only reported in the RLF-Report for the last RA procedure before RLF/HOF, FFS whereas limited information are reported for the other BWPs in which consistent LBT failure is detected

c. The above bullets may be revisited case by case depending on future agreements.

6 The UE logs RA-InformationCommon including LBT info in the RLF-Report, in case of HOF and when the RLF cause is randomAccessProblem or beamFailureRecoveryFailure (as in legacy).

7 The UE logs the available RSSI measurement in the RLF-Report. FFS in which case.

8 The UE should log the following RSSI values in the RLF-Report:

a. For RLF, the latest measured RSSI of the NR-U channel of the last serving cell if measRSSI-ReportConfig is configured for the corresponding frequency.

b. FFS: For HOF, the latest measured RSSI of the NR-U channel of the source cell, and the latest measured RSSI of the NR-U channel of the target cell, if measRSSI-ReportConfig is configured for the corresponding frequency.

=> Next the discussion on NR-U will focus on the following FFS issues.

Proposal 9 FFS: The UE logs in the RLF-Report the BWP information (at least the locationAndBandwidth, and the subcarrierSpacing) of all the BWPs in which the UE detected the consistent UL LBT failures right before the RLF/HOF.

Proposal 21 FFS: Related to the target cell, the UE logs in the SHR the random access information, same as for the RA- and RLF-Report, i.e. including the number of UL LBT failures during HO (depending on the outcome of Proposal 2), and the information on the multiple BWPs (depending on the outcome of Proposal 4) in which consistent UL LBT failures was triggered. FFS on the trigger conditions to log.

Proposal 23 FFS: RAN2 to discuss what LBT information (if any) related to the source cell of the HO should be included in the SHR.

Proposal 11 FFS:Support these further options on when to log the RA-InformationCommon including LBT info in the RLF-Report:

b. When the RLF cause is lbtFailure, and the UE was performing random access in other BWPs due to triggered consistent UL LBT failures

Proposal 18 FFS: UE to log indication on whether the detected power at the moment of LBT failure was above the configured EDT threshold (maxEnergyDetectionThreshold).

Proposal 6 , 19 and 20 also FFS.

R2-2305424 Discussion on SON for NR-U Nokia, Nokia Shanghai Bell discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2305485 SON Enhancement for NR-U CATT discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2305658 SON/MDT enhancements for NR-U Samsung R&D Institute India discussion

R2-2305706 Discussion on MRO for NR-U Lenovo discussion Rel-18

R2-2305728 Discussion on SON for NR-U Xiaomi discussion Rel-18

R2-2305777 SONMDT enhancement for NR-U CMCC discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2306043 Discussion on NR-U Related Enhancements Qualcomm Incorporated discussion Rel-18

R2-2306101 Discussion on SON for NR-U Huawei, HiSilicon discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2306247 Consideration on NR-U related SON ZTE Corporation, Sanechips discussion Rel-18

R2-2306450 Enhancements of SON reports for NR-U Ericsson discussion

### 7.13.1 Organizational

Ls in Rapporteur input.

R2-2304622 LS on MRO for CPC and CPA and fast MCG recovery (R3-230992; contact: Huawei) RAN3 LS in Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core To:RAN2

R2-2304628 LS on potential override of logged MDT reports upon moving from SNPN to PLMN (R3-232118; contact: Ericsson) RAN3 LS in Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core To:RAN2

R2-2304630 LS on intra-system inter-RAT SHR and SPR (R3-232140; contact: Huawei) RAN3 LS in Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core To:RAN2

R2-2304631 Reply LS on RACH enhancement for R18 SONMDT (R3-232144; contact: Huawei) RAN3 LS in Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core To:RAN2

R2-2304656 Reply LS on user consent of Non-public Network (S3-231399; contact: Vodafone) SA3 LS in Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core To:RAN3 Cc:RAN2, SA5

R2-2306100 Discussion on RAN2 impacts due to the LS R3-232144 Huawei, HiSilicon discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2306290 Discussion on RAN2 impacts due to the LS R3-232140 Huawei, HiSilicon discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2306452 Summary of AI 7.13.5 SON for NR-U (Ericsson) Ericsson discussion

R2-2305986 Running CR for Rel-18 SON MRO Ericsson discussion Rel-18 38.331 NR\_ENDC\_SON\_MDT\_enh2-Core

=> use as the baseline for further running CR construction.

R2-2306753: Running 38.331 CR for logged MDT enhancements and NPN Huawei discussion Rel-18 38.331 NR\_ENDC\_SON\_MDT\_enh2-Core

=> use as the baseline for further running CR construction.

R2-2306531 Running 38.331 CR for RACH report ZTE Corporation, Sanechips draftCR Approval 7.13.1 Rel-18 38.331 NR\_ENDC\_SON\_MDT\_enh2-Core

=> use as the baseline for further running CR construction.

R2-2306754: Running 36.331 CR for logged MDT enhancements Huawei discussion Rel-18 36.331 NR\_ENDC\_SON\_MDT\_enh2-Core

=> use as the baseline for further running CR construction.

R2-2306530 Running 36.331 CR for SN RACH report ZTE Corporation, Sanechips draftCR Approval 7.13.1 Rel-18 36.331 NR\_ENDC\_SON\_MDT\_enh2-Core

=> use as the baseline for further running CR construction.

* **[Post122][555][R18 SON/MDT] Running CR for Rel-18 SON MRO (Ericsson)**

 Scope: Use R2-2305986 as baseline to continue the running 38.331CR for R18 SON MRO. If impact on 36.331 is identified, also provide corresponding running 36.331 CR.

Intended outcome: Running CR baselines for R18 SON MRO

 Deadline: 23:24 UTC, The last Friday before RAN2#123 starting

* **[Post122][556][R18 SON/MDT] Running CR for Rel-18 for logged MDT enhancements and NPN (Huawei)**

Scope: Use R2-2306753 and R2-2306754 as baselines to continue the running 38.331CR and 36.331 CR for R18 logged MDT enhancements and NPN.

 Intended outcome: Running CRs baseline for R18 logged MDT enhancements and NPN

 Deadline: 23:24 UTC, The last Friday before RAN2#123 starting

* **[Post122][557][R18 SON/MDT] Running CR for Rel-18 SON on RACH report (ZTE)**

Scope: Use R2-2306531 and R2-2306530 as baselines to continue the running 38.331CR and 36.331 CR for R18 SON on RACH report

 Intended outcome: Running CRs baseline for R18 SON on RACH report

 Deadline: 23:24 UTC, The last Friday before RAN2#123 starting

### 7.13.2 MRO for inter-system handover for voice fallback

R2-2306761 Summary for 7.9.13 MRO for inter-system handover for voice fallback (Nokia)

The following proposals are to be agreed:

**Proposal 1.1: Indicate in the LTE RLF report that an RLF occurs shortly after successful HO from NR to E-UTRAN for voice fallback.**

**Proposal 1.2: Introduce a new indication in the LTE RLF report for the case an RLF occurs shortly after successful HO from NR to E-UTRAN for voice fallback.**

The following proposal is to be discussed:

**Proposal 2: RAN2 further discuss and decide**

**1) whether the UE stores acceptable cell information in the RLF report;**

**2) if the answer for 1) is YES, then whether**

**a) the network can deduce that the information in the RLF report belongs an acceptable cell based on other information elements in the RLF report; or**

**b) a new indication is needed in the RLF report that information in the RLF report belongs an acceptable cell.**

The following proposals are to be discussed if time permits:

**Proposal 1.3: RAN2 discuss whether an indicate in the NR RLF report is needed that the last failed inter-system inter-RAT HO was triggered due to voice fallback.**

**Proposal 1.4: RAN2 discuss whether there is need to enable the differentiation of the emergency calls fallback failure from normal HOs.**

**Proposal 3a: RAN2 discuss Proposal 5 of R2-2305987: RAN2 consider the scenario that upon transition to connected state from IDLE and immediate HO to LTE network due to voice fallback, the UE may not have L3 measurements available to report in the RLF report.**

**Proposal 3b: RAN2 discuss Proposal 6 of R2-2305987: UE includes the available early measurements in the RLF report after experiencing voice fallback HOF.**

**Proposal 3c: RAN2 discuss Proposal 7 of R2-2305987: UE includes time spent in the source cell in the RLF report upon voiceFallback HOF.**

**Proposal 3d: RAN2 discuss Proposal 3 of R2-2306042: When mobility from NR procedure is performed for voice fallback, the UE reports the following information in the RLF report:**

**• If a suitable EUTRA cell is found after HOF, UE includes EUTRA cell ID as reconnectCellId.**

**• If both suitable and acceptable EUTRA cells are not found after HOF, UE logs the reestablishmentCellId.**

**Proposal 3e: RAN2 discuss Proposal 5 of R2-2306245: New capability is introduced to indicate whether UE supports logging RLF-report when mobility from NR fails and the corresponding MobilityFromNRCommand includes voiceFallback indication.**

R2-2305483 Further Consideration on Inter-system Handover for Voice Fallback CATT discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2305678 MRO for inter-system handover for voice fallback Samsung R&D Institute India discussion Withdrawn

R2-2305703 MRO for inter-system handover for voice fallback Lenovo discussion Rel-18

R2-2305722 MRO for inter-system handover for voice fallback Samsung R&D Institute India discussion

R2-2305778 Further consideration on voice fallback CMCC discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2305987 Mobility Robustness Optimization – all topics Ericsson discussion NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2306042 Data collection for MRO for inter-system handover for voice fallback Qualcomm Incorporated discussion Rel-18

R2-2306245 Consideration on MRO for inter-system handover for voice fallback ZTE Corporation, Sanechips discussion Rel-18

R2-2306291 Discussion on MRO for inter-system handover for voice fallback Huawei, HiSilicon discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2306455 Discussion on inter-system HO for voice fallback NTT DOCOMO, INC. discussion

### 7.13.3 MDT override

R2-2304932 Considerations on MDT override enhancement for E-UTRAN Beijing Xiaomi Software Tech discussion Rel-18

R2-2305273 Discussion on MDT override protection LG Electronics discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2305421 Signalling based logged MDT override protection Nokia, Nokia Shanghai Bell discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2305988 MDT enhancements Ericsson discussion NR\_ENDC\_SON\_MDT\_enh2-Core

Proposal 1 In NR, UE reports availability of signalling based logged MDT configuration without checking the RAT information.

Proposal 2 RAN2 confirms that sigLogMeasConfigAvailable can be re-used for to indicate the availability of the LTE signalling based logged MDT in NR.

Proposal 3 LTE MDT measurements can be fetched by NR nodes, to avoid underutilizing NR MDT mechanism.

### 7.13.6 RACH enhancement

R2-2306760 Summary of 7.13.6 RACH enhancement (ZTE)

Based on analysis in section 2, following proposals are made for further discussion, and some proposals are only discussed under certain conditions.

**RACH Partitioning**

**For online discussion (possible easy agreements)**

**Proposal 8: RAN2 confirms agreed “used feature combination” is the FeatureCombination applied for the RA procedure , which may also include features not in the triggered feature list.**

**Proposal 9: UE reports the parameters in RA-InformationCommon based on AdditionalRACH-Config or FeatureCombinationPreambles, if available for the used featurecombination.**

**Proposal 10: Feature specific RACH information is included in RA-InformationCommon and is also included for RLF report and CEF report.**

**For online discussion**

**Slicing**

**Proposal 1: RAN2 clarify which one of below understandings is used for including triggered NSAG ID(s) in RA report:**

* **Understanding 1: UE reports all NSAG ID(s) which are associated with the S-NSSAI(s) triggering the random access attempt irrespective if it is included in SIB1 or not.**
* **Understanding 2: UE includes the NSAG IDs are associated with the S-NSSAI(s) triggering the RACH attempts and are included in SIB1**

**Proposal 2:RAN2 selects between below options for inclusion of NSAG priority in RA report:**

* **Opt1:UE includes NSAG IDs in the RACH report based on the assigned priorities**
* **Opt2: NSAG priority information is not included in the RA report**

**Proposal 3: RAN2 discuss whether to include the S-NSSAI(s) that triggered the RACH through a given partition in the RA report.**

**Msg3 repetition**

**Proposal 4: RAN2 discuss whether to include the number of Msg3 repetition applied in RACH procedure in RA report.**

**Proposal 5: RAN2 selects between below two options to help optimizing configuration of rsrp-ThresholdMsg3:**

* **Opt1: UE includes RSRP of downlink pathloss reference in 4-step RACH report.**
* **Opt2: UE includes the indication of whether the RSRP is above rsrp-ThresholdMsg3 in RACH report.**

**Proposal 6: UE includes in the RA report the starting preamble index and the number of preambles in the partition that used in the corresponding RACH procedure.**

**Proposal 7: UE includes the assigned feature priorities in RA report, and select among below two options:**

* **Opt1: Include priorities information assigned for features**
* **Opt2: Implicitly indicated by the order of applicable features included in RA report**

**Partitioning resource information**

**Proposal 6: UE includes in the RA report the starting preamble index and the number of preambles in the partition that used in the corresponding RACH procedure.**

**Proposal 7: UE includes the assigned feature priorities in RA report, and select among below two options:**

* **Opt1: Include priorities information assigned for features**
* **Opt2: Implicitly indicated by the order of applicable features included in RA report**

**SDT**

**Proposal 12: Introduce a flag in RA-report to indicate whether RA-SDT procedure is successful or not.**

**Proposal 13: UE reports the data volume at the time of attempting for SDT operation, if the data volume is more than sdt-DataVolumeThreshold but less than a data volume reporting threshold (a new threshold), as part of the RA Report. FFS how to report.**

**Treated if time allows**

**Proposal 11: UE reports if it has used slicing specific or AI specific RACH parameters for the RA.**

**SN RACH Report**

**For online discussion (possible easy agreements)**

**Proposal 14: When reporting SN NR RA-report to LTE BS, the unique PSCell identities (i.e. if a PSCell occurs more than once in NR RA-ReportList, it is recorded only once in the list of PSCell identities) are included outside the NR RA report container.**

**Proposal 16: RAN2 intends to reply RAN3’s LS (R2-2304631) to inform them the alternative selected for SN RA report and clarify the applicable scenarios.**

**For online discussion**

**Proposal 15: Revert the agreement that UE does not support reporting NR RA report to LTE when it is in standalone LTE mode i.e., eNB may fetch the NR RA report irrespective to whether the UE is in single connectivity or dual connectivity.**

**Proposal 17: No need to introduce availability bit to notify LTE BS there are available NR RA report for fetching.**

**Proposal 18: Discuss the necessity to enhance the LTE UE information Request procedure with NR RA-Report request flag to fetch the NR RA-Report in LTE.**

**Proposal 19: UE performs RPLMN checking before sending the NR RACH report to LTE BS.**

**Proposal 20: A new UE capability is introduced to indicate whether UE supports NR RACH Report in LTE for (NG)EN-DC scenarios.**

**Others**

**Treated if time allows**

**Proposal 21: Include information in the RA report on whether the random-access procedure was executed towards an MCG cell or an SCG cell**

R2-2304930 Consideration on the SON enhancements for RACH report Beijing Xiaomi Software Tech discussion Rel-18

R2-2305070 SON enhancements for RACH Apple discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2305425 Discussion on RACH enhancement for SON Nokia, Nokia Shanghai Bell discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2305486 RACH enhancement for SON CATT discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2305616 Further considerations on RACH Enhancement CMCC discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2305660 SON/MDT enhancements for RACH Samsung R&D Institute India discussion Withdrawn

R2-2305661 SON/MDT enhancements for RACH Samsung R&D Institute India discussion

R2-2305989 RA report enhancement Ericsson discussion NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2306102 Discussion on RACH enhancement Huawei, HiSilicon discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2306207 SON enhancement for RA report SHARP Corporation discussion R2-2303829

R2-2306248 Consideration on RACH enhancements ZTE Corporation, Sanechips discussion Rel-18

R2-2306339 Further Discussion on RACH enhancements for SON China Telecom Corporation Ltd. discussion

### 7.13.7 SON/MDT enhancements for Non-Public Networks

R2-2306764 [Pre122][8XX][SON/MDT] Summary of 7.13.7 SONMDT enhancements for NPN CATT

Based on summary of [1-9], following proposals are made for further discussion, and some proposals are only discussed under certain conditions.

For easy agreement

Proposal 4: Include CAG ID(s) in the logged MDT area configuration.

Proposal 5: Do not include the SNPN ID/CAG ID(s) in the logged MDT report.

Proposal 6: No new NPN specific variables are introduced for both PNI-NPNs and SNPNs.

Proposal 7: RAN2 does not enhance the continuous logged MDT recording between PN and SNPN networks, and send RAN2 decision to RAN3.

For online discussion

Proposal 1: RAN2 to discuss whether to include PNI-NPN ID (e.g. CAG ID) in the RLF/HOF report.

Proposal 2: RAN2 to discuss which format (NID only or PLMN+NID) and how to include SNPN related ID in the RLF/HOF report.

Proposal 3: RAN2 to discuss whether to include SNPN ID in the logged MDT area configuration.

Discussed if time allows

Proposal 8: RAN2 to discuss:

- Whether and how to introduce information reporting for OOC analysis involving NPN network;

- Whether and which to introduce other SON/MDT enhancements for NPN in this Release;

- Whether equivalent SNPN list (limit to one SNPN ID in this Release) needs to be considered to align with the future NPN evolution;

- Whether SNPN ID checking is needed before transmitting the information for the corresponding SON and MDT reports.

R2-2304931 Discussion on the SONMDT enhancement for NPN Beijing Xiaomi Software Tech discussion Rel-18

R2-2305325 Discussion on SON enhancements for NPN vivo discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2305426 Discussion on NP related issues in SON/MDT Nokia, Nokia Shanghai Bell discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2305487 SON and MDT Enhancement for NPN CATT discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2305647 SON/MDT enhancements for NPN Samsung R&D Institute India discussion

R2-2305990 SON support for NPN Ericsson discussion NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2306249 Consideration on SON-MDT support for NPN ZTE Corporation, Sanechips discussion Rel-18

R2-2306293 Discussion on SONMDT enhancements for NPN Huawei, HiSilicon discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2306358 Discussion on the “LS on potential override of logged MDT reports upon moving from SNPN to PLMN” from RAN3 (R3-232118) Beijing Xiaomi Software Tech discussion Rel-18

### 7.13.8 Other

R2-2305779 Further considerations on fast MCG recovery CMCC discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2305326 Discussion on MRO for CPAC vivo discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2305340 SON on fast MCG recovery OPPO discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2305488 Discussion on Fast MCG recovery and MHI Enhancement CATT discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2305707 SON enhancements for CPAC Lenovo discussion Rel-18

R2-2305708 MRO for fast MCG link recovery Lenovo discussion Rel-18

R2-2305780 SON MDT enhancement for MR-DC CPAC CMCC discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2305781 MHI Enhancement for SCG Activation Deactivation CMCC, Ericsson, CATT discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2305991 RAN observability issues for DRBs with stringent QoS requirements Ericsson discussion NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2306103 Discussion on Fast MCG recovery, CPAC and MDT overide Huawei, HiSilicon discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2306209 Discussion on failure information for CPAC SHARP Corporation discussion R2-2301566

R2-2306219 MRO for fast MCG recovery SHARP Corporation discussion R2-2301565

R2-2306250 Remaining issues on fast MCG recovery enhancement ZTE Corporation, Sanechips discussion Rel-18

R2-2306390 MRO for Fast MCG Recovery, CPAC and SCGFailureInformation Samsung R&D Institute India discussion Withdrawn

R2-2306391 MRO for Fast MCG Recovery, CPAC and SCGFailureInformation Samsung R&D Institute India discussion

R2-2306456 Discussion on CPAC failure report NTT DOCOMO, INC. discussion

### 7.13.4 SHR and SPCR

R2-2306752 Pre-meeting summary of 7.13.4 Huawei

The summary proposals are listed as below:

Inter-RAT SHR (from NR to LTE)

Note: P1 and P2 can be discuss during online session, and P3-P8 can be discussed if time allows.

Proposal 1: For inter-RAT SHR from NR to LTE, if T310 or T312 trigger threshold is fulfilled, RAN2 to discuss:

- No need to include C-RNTI

- Or , include C-RNTI of source cell

Proposal 2: For inter-RAT SHR from NR to LTE, if T310 or T312 trigger threshold is fulfilled, RAN2 to discuss the need of inclusion of time between report generating and fetching.

Proposal 3: for inter-RAT SHR from NR to LTE, enhance the configuration by:

- a triggering condition associated to the number of random accesses attempts toward the LTE cell

Proposal 4: for inter-RAT SHR from NR to LTE, enhance the report with the following information:

- a counter for the number of RA attempts made for the successful handover

- a flag on whether contention was observed for the successful handover

Proposal 5: Agree Option 2 as way forward for UE context retrieval i.e. if Mobility Information is sent to the UE together with the T310/T312 threshold configuration, then UE includes Mobility Information in the SHR.

Proposal 6: Also note that this behaviour is against a previous RAN2 agreement to not use T304. For this particular case, this agreement must be reverted.RAN2 to agree to allow the source (NR) node to configure triggers for T304 for inter-RAT SHR.

Proposal 7: For Inter-RAT SHR, the shr-Cause-r17 IE needs to be extended with a new cause for RACH issues.

Proposal 8: The ra-InformationCommon-r17 IE contains information regarding the NR RACH procedure. For handovers to LTE, we need to be able to include information about the LTE RACH procedure. Such information enable optimization on selecting the right target cell based on the RACH performance.For Inter-RAT SHR, an IE for LTE RA related information needs to be added.

Inter-RAT SHR (from LTE to NR)

Note: P9, P10, and P11 can be discuss during online session, and P12 can be discussed if time allows.

(agreeable) Proposal 9: For inter-RAT SHR from LTE to NR, RAN2 confirms that if only T304 trigger is supported, the assumptions of the RAN3 LS R2-2304630 are feasible from RAN2 point of view, and there are no LTE impacts for the assumptions.

Proposal 10: For inter-RAT SHR from LTE to NR, RAN2 to discuss whether there are LTE impacts on UE capability scheme, including:

- Explicit UE capability indicator reported from UE to LTE network which impacts TS36.331

- Define the UE capability information in TS36.306

Proposal 11: Send a reply LS to RAN3 to including RAN2 progress.

Proposal 12: For the reporting content for inter-RAT SHR from LTE to NR, RAN2 to discuss whether the following content is needed:

(a) Source LTE cell id. A new IE is required

(b) Target NR cell id

(c) Measurement results for source, target and neighbours

(d) Cause to indicate which inter-RAT SHR triggering condition

(e) UE location Information

(f) Target NR C-RNTI

SPR

Note: P13, P17 and P18 can be discuss during online session, and P14-P16, P19-P23 can be discussed if time allows.

Proposal 13: For values of triggering conditions of SPR, it is proposed RAN2 to discuss the following options, and if needed, send a LS to RAN3 for their confirmation:

Option 1: Percentage based threshold variables for SHR (T310/T312/T304) can be reused for SPR

Option 2: For the MN initiated PSCell change MN configures only a single threshold value for T310 and T312 thresholds (instead of having a list of percentage values) to trigger SPR

Proposal 14: SPR is triggered based on the following additional triggers:

- time between CPAC triggering threshold

- time between receiving CPAC configuration to the execution of the CPAC

- Experiencing LBT issues during PSCell change/addition execution

Proposal 15: RAN2 to discuss that UE stores two SPR configurations configured by MN and SN respectively.

Proposal 16: UE clears SPR configuration during the following

a. RRC Reestablishment

b. RRC Resume initiation

c. SCGFailure initiation

d. Reception of SCGRelease

e. Successful PSCellAddition or PSCellChange

(agreeable) Proposal 17: Introduce an indication of MN-initiated or SN-initiated PSCell change in SPR.

Proposal 18: FFS on how the UE gets the indication.

Proposal 19: RAN2 to discuss the following reporting content of SPR:

- Indication of Pscell change, i.e. PSCell addition, change

- User plane interruption time measurements on a per cell group type

Proposal 20: UE indicates availability of SPR report to the network in the following RRC messages:

a. RRCReconfigurationComplete

b. RRCSetupComplete

c. RRCResumeComplete

d. RRCReestablishmentComplete

Proposal 21: UE performs PLMN identity check before indicating SPR availability to the network.

Proposal 22: RAN2 agrees that current SPR procedure (as well as SHR procedure) does not provide means to distinguish the case when T310 has almost expired when CPC executed from the case when T310 has been stopped before CPC executed.

Proposal 23: RAN2 agrees to means how SPR (as well as SHR procedure) should be enhanced to enable the distinction of the case when T310 has almost expired when CPC executed from the case when T310 has been stopped before CPC executed.

Enhancements on intra-NR SHR

Note: P24 can be discussed during online session if time allows.

Proposal 24: RAN2 to discuss enhancements on Intra-NR SHR, i.e. P1, P2 in R2-2305704, P25 in R2-2305987.

R2-2305324 Remaining issues on SPR vivo discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2305422 Discussion on SON for inter-RAT SHR Nokia, Nokia Shanghai Bell discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2305423 SPR and SHR related enhancements Nokia, Nokia Shanghai Bell discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2305484 Further discussion on inter-RAT SHR and SPR CATT discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2305617 SON enhancement for SPR CMCC discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core Withdrawn

R2-2305667 SON/MDT enhancements for SHR and SPR Samsung R&D Institute India discussion

R2-2305704 Discussion on Successful Handover Report Lenovo discussion Rel-18

R2-2305705 SON enhancements for SPR Lenovo discussion Rel-18

R2-2306204 SON enhancement for SPR SHARP Corporation discussion

R2-2306246 Remaining issues on SHR and SPCR ZTE Corporation, Sanechips discussion Rel-18

R2-2306292 Discussion on SHR and SPR Huawei, HiSilicon discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2306462 Discussion on SPR NTT DOCOMO, INC. discussion