**3GPP TSG-RAN WG2 Meeting #119bis electronic R2-2xxxxxx**

Online, October, 2022

Agenda Item: xx

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:
* [AT119b][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

## 6.13 SON MDT

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

Tdoc Limitation: 0 tdocs

Not treated

R2-2209321 LS on M6 Delay Threshold (R3-224079; contact: CATT) RAN3 LS in Rel-17 NR\_ENDC\_SON\_MDT\_enh To:SA5 Cc:RAN2

R2-2209327 Reply LS on the user consent for trace reporting (R3-225250; contact: Nokia) RAN3 LS in Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core To:SA3 Cc:RAN2, SA5, SA1, RAN

R2-2209363 LS on Reply LS on beam measurement reports (S5-223524; contact: Ericsson) SA5 LS in Rel-17 NR\_ENDC\_SON\_MDT\_enh To:RAN3, RAN2

R2-2209366 Reply LS on beam measurement reports (R3-225273; contact: Ericsson) RAN3 LS in Rel-17 NR\_ENDC\_SON\_MDT\_enh To:SA5 Cc:RAN2

## 8.13 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

### 8.13.1 Organizational

Ls in Rapporteur input.

R2-2209324 LS on the scope for the support of SON/MDT enhancements (R3-225238; contact: Nokia) RAN3 LS in Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core To:RAN2

=> Noted

R2-2209325 LS on NR-U support for MRO (R3-225241; contact: Ericsson) RAN3 LS in Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core To:RAN2

=> Noted

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

Focus on UE impact

R2-2210794 Summary on MRO for inter-system handover for voice fallback ZTE

Agreements:

1 An explicit indication is included in RLF-report when mobility from NR fails and the corresponding MobilityFromNRCommand includes voiceFallbackIndication

2 The below content is included in RLF-report when reestablishment procedure is initiated due to mobility From NR failure.

 a. reestablishmentCellID

R2-2209569 Data Collection for MRO Related Enhancements CATT discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2209728 Further discussion on MRO of inter-system HO voice fallback OPPO discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2209827 MRO for inter-system handover for voice fallback Samsung R&D Institute India discussion

R2-2209864 Discussion on the inter-system handover for voice fallback Huawei, HiSilicon discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2209955 MRO for inter-system handover for voice fallback Lenovo discussion Rel-18

R2-2210037 Discussion on inter-system handover voice fallback Xiaomi discussion Rel-18

R2-2210183 MRO for inter-system handover for voice fallback Ericsson discussion NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2210287 Consideration on MRO for inter-system handover for voice fallback ZTE Corporation, Sanechips discussion Rel-18

R2-2210300 Data collection for MRO for inter-system handover for voice fallback Qualcomm Incorporated discussion Rel-18

R2-2210510 MRO for inter-system handover for voice fallback CMCC discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2210632 Further discussion on MRO enhancement for inter-system handover for voice fallback NTT DOCOMO, INC. discussion Rel-18

### 8.13.3 MDT override

Focus on UE impact. RAN3 progress pending on RAN2

R2-2210797 Summary on 8.13.3 ‘MDT override’ Nokia, Nokia Shanghai Bell discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

=> The scenario when the UE is configured with NR Signaling-based logged MDT measurement configuration and reselects to E-UTRAN is excluded in R18 scope.

=> email discussion on solution direction UE capability based v.s. UE notification

* **[AT119bis-e][801][R17 SON/MDT] MDT override solution direction (Nokia)**

Compare the solution based on P2/3/4 in R2-2210797 with the solution in R2-2210301 and figure out the WF

 Intended outcome: Report

 Deadline: 04:44 UTC, Friday October 14th

R2-2210996 Report on the email discussion [AT119bis-e][801][R18 SON/MDT] MDT override solution direction (Nokia)

Proposal 1: RAN2 will investigate UE and NW impacts due to EUTRA MDT configuration override protection in inter-RAT scenario realized by simultaneous LTE and NR configuration in the UE.

Proposal 2: FFS if the extension of the LTE LoggedMeasurementConfiguration (with Logged MDT type indication) is needed.

Proposal 3: FFS if cross-RAT reporting for Logged MDT results (i.e. UE reports E-UTRAN logged MDT results in NR) is supported.

Proposal 3b: Cross-RAT reporting for Logged MDT results (i.e. UE reports E-UTRAN logged MDT results in NR) is not supported in R18.

R2-2209570 Discussion on Inter-RAT Signaling Based Logged MDT Override Protection CATT discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2209808 Inter-RAT signalling based logged MDT override protection Samsung R&D Institute India discussion

R2-2209896 Discussion on the inter-system signalling based MDT override protection Huawei, HiSilicon discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2210028 Considerations on the signaling based logged MDT override protection for E-UTRAN Beijing Xiaomi Software Tech discussion Rel-18

R2-2210182 MDT enhancements Ericsson discussion NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2210267 Signalling based Logged MDT override protection Nokia, Nokia Shanghai Bell discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2210288 Consideration on MDT override issues ZTE Corporation, Sanechips discussion Rel-18

R2-2210301 Signalling based logged MDT override protection Qualcomm Incorporated discussion Rel-18

### 8.13.4 SHR and SPCR

Focus on UE impacts. RAN2/RAN3 progress (including the RAN3 LS R2-2209104) should be considered.

R2-2210798 Pre-meeting summary of 8.13.4 SHR and SPCR (Ericsson)

* **[AT119bis-e][802][R17 SON/MDT] SHR and SPR (Ericsson)**

Discussion on the proposals 1-7 in R2-2210798

 Intended outcome: Report

 Deadline: 04:44 UTC, Friday October 14th

R2-2210986 [AT119bis-e][802][R18 SON/MDT] SHR and SPR (Ericsson)

Agreements

1 RAN2 confirms the scenarios for SPR for NR-DC, including:

• SN- and MN-initiated classic PSCell change / CPC

• Intra-SN classic PSCell change / CPC

• Classic Addition / CPA

1a RAN2 will discuss HO with SN change later, after the basic solution for SPR is known

2 Given that PSCell addition is proposed by all companies, SPR is used as the abbreviations to use for the feature.

3 RAN2 confirm to prioritize NR-DC scenario for SPR.

4 SHR solution is taken as baseline for the SPR in terms of configuration and reporting at high level. Details of the configuration and report need to be tailored/customized/new message per use case.

5 Network configures SPR configuration IE for the UE, with at least the following triggering conditions:

• T310 triggering condition

• T312 triggering condition

• T304 triggering condition

5a: Other triggering conditions are FFS

5b: Values of the triggering conditions are FFS

5c: Which node configures the triggering condition is FFS.

6 RAN2 agree to the following:

A. SPR configuration is configured by network through otherConfig

B. SPR is fetched via UE Information Request/Response procedure

7 UE logs at least the following information and measurements in the SPR IE (other information and measurements are FFS).

a) Source PSCell info (cell ID, measurement result)

b) Target PScell info (cell ID, measurement result)

c) Neighbour Cells info (cell ID, measurement result, CPAC Candidate cells flag)

d) Success PSCell change/addition cause value (e.g., t304, t310, t312 cause, etc.)

f) The time elapsed between the CPAC execution towards the target cell and the corresponding latest CPAC configuration received for the selected target cell

7a: FFS on whether to reuse CHO candidate cell flag for the CPAC candidate cells or define a new flag to indicate CPAC candidate cell.

7b: FFS on whether to include or on conditional inclusion of random access related information.

7c: FFS on Location Information

R2-2209566 Discussion on SON enhancement for SPCR vivo discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2209571 Discussion on Miscellaneous MRO Enhancements CATT discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2209826 SON/MDT enhancements for SHR and SPCR Samsung R&D Institute India discussion

R2-2209865 Discussion on SHR and SPCR Huawei, HiSilicon discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2209956 Successful Handover Report for inter-RAT HO Lenovo discussion Rel-18

R2-2209957 SON enhancements for successful PSCell change report Lenovo discussion Rel-18

R2-2209998 Discussion on successful PSCell change report NEC discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2210038 Discussion on SHR and SPCR Xiaomi discussion Rel-18

R2-2210184 SPR and SHR enhancements Ericsson discussion NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2210268 Successful PSCell Change report Nokia, Nokia Shanghai Bell discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2210289 Consideration on SHR and SPCR ZTE Corporation, Sanechips discussion Rel-18

R2-2210302 Discussion on SHR for inter-RAT handover and successful PSCell change reporting Qualcomm Incorporated discussion Rel-18

R2-2210521 Discussion on successful PSCell change report SHARP Corporation discussion

R2-2210624 Discussion on SPCR NTT DOCOMO, INC. discussion Rel-18

### 8.13.5 SON for NR-U

Focus on UE impacts. RAN2/RAN3 progress (including the RAN3 LS R2-2209105) should be considered.

R2-2210799 Pre-meeting summary of 8.13.5 SON for NR-U Ericsson discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

=> RAN2 first enhance the RA-InformationCommon for NR-U purpose, and then address direct enhancements of the RLF report and SHR when the agreements on RA-InformationCommon are set.

Agreements:

1 The UE will log information of multiple RA procedures related to consistent LBT failures. FFS details.

* **[AT119bis-e][803][R18 SON/MDT] SON of NR-U (Ericsson)**

Discussion on the proposals 3-8 in R2-2210799

 Intended outcome: Report

 Deadline: 04:44 UTC, Friday October 14th

R2-2210998 [AT119bis-e][803][R18 SON/MDT] SON of NR-U (Ericsson)

Proposal 1: Introduce a new raPurpose in the RA-Report to indicate that the RA was initiated following a “consistent LBT failures” in the SpCell.

Proposal 2: RAN2 further discuss whether to introduce value 0 for the numberOfPreamblesSentOnSSB and numberOfPreamblesSentOnCSI-RS.

Proposal 3: RAN2 further discuss that in NR-U:

• An RA attempt is counted when UE attempts to transmit a preamble i.e., when UE executes section 5.1.3 of TS 38.321, or

• An RA attempt is only counted when UE accesses the channel at the PHY layer, and transmits the preamble.

Proposal 4: RAN2 agree to log the number of LBT failures in the RA report

FFS: The granularity of the LBT failures in the RA-InformationCommon among the following:

A. Per RA attempt

B. Per RA procedure (i.e., total number of LBT failures during RA procedure)

C. Per selected beam (i.e., Number of LBT failures per selected beam)

Proposal 5: RAN2 further discuss to log RSSI measurement and the applied EDT value in the RA-InformationCommon. FFS on logging granularity. FFS: how to fulfil RAN3 request in logging RSSI.

Proposal 6: RAN2 consult RAN3 to whether it is possible to know the lbt-FailureRecoveryConfig used for execution of the RA procedure and evaluate the cost for the solution without UE reporting.

R2-2209573 NR-U enhancements for SON CATT discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2209765 SON enhancements for NR-U Apple discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2209824 SON/MDT enhancements for NR-U Samsung R&D Institute India discussion

R2-2209897 Discussion on SON for NR-U Huawei, HiSilicon discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2209958 Discussion on MRO for NR-U Lenovo discussion Rel-18

R2-2210039 Discussion on SON for NR-U Xiaomi discussion Rel-18

R2-2210148 SONMDT enhancement for NR-U CMCC discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2210180 Enhancements of SON reports for NR-U Ericsson discussion NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2210270 MRO and MDT enhancements for NR-U Nokia, Nokia Shanghai Bell discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core R2-2208246

R2-2210290 Consideration on NR-U related SON ZTE Corporation, Sanechips discussion Rel-18

### 8.13.6 RACH enhancement

R2-2210793 Pre-meeting summary of 8.13.6 (Huawei) Huawei discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

Agreements:

For RACH report about RACH partitioning information

1 Agree to add the following parameters into RACH report for RACH partitioning:

- Feature or the combination of features that triggered the RACH

- Used feature combination

For SgNB RACH report for MR-DC scenarios

Proposals that need discussions:

Summary proposal 7: For NE-DC, the UE collects SN RA report container (for LTE) and reports to the NR MN. Additionally, the UE also includes the PSCell identity for the stored SN RA report (FFS on the format).

Summary proposal 8: For EN-DC and NG-EN-DC, there are the following options:

(1) the NR SN fetching the list of NR RA reports via SRB3 can be considered for the SN RACH report in the (NG) EN-DC scenario

(2) the UE collects SN RA report container (for NR) and reports to the LTE MN, and additionally the UE also includes the PSCell identity for the stored SN RA report (FFS on the format).

For enhancement of RA report for DC scenario

Proposals that need discussions:

Summary proposal 9: Include information in the RA report on whether the random access procedure was executed towards an MCG cell or an SCG cell.

For RACH Report Retrieval

Proposals that need discussions:

Summary proposal 10: RAN2 to discuss and agree on the availability indicator of RACH reports.

R2-2209567 Discussion on RACH report enhancement for RACH partitioning vivo discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2209572 RACH enhancement for SON CATT discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2209766 SON enhancements for RACH partitioning Apple discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2209825 SON/MDT Enhancements for RACH Samsung R&D Institute India discussion

R2-2209898 Discussion on RACH enhancement Huawei, HiSilicon discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2209986 RACH report enhancements for RACH partition Spreadtrum Communications discussion Rel-18

R2-2209999 Discussion on RACH enhancements NEC discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2210030 Discussion on the SON/MDT enhancement for RACH report Beijing Xiaomi Software Tech discussion Rel-18

R2-2210179 RACH report enhancements Ericsson discussion NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2210271 RACH report related enhancements Nokia, Nokia Shanghai Bell discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2210291 Consideration on RACH enhancements ZTE Corporation, Sanechips discussion Rel-18

R2-2210511 SONMDT enhancement for RACH Enhancement. CMCC discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2210574 Discussion on RACH partitioning China Telecom Corporation Ltd. Discussion

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

R2-2210800 Pre-meeting summary of 8.13.7 (CATT)

Agreements:

1 SNPN ID (e.g.,NID ID) checking is needed before sending the availability indication for corresponding SON and MDT report. The details can be discussed case by case. FFS PNI-NPN ID checking.

2 Include the NPN ID into SON/MDT report, whether SNPN ID or PNI-NPN ID related info should be included can be discussed per use case.

3 RAN2 prioritizes the use cases of RLF report and logged MDT enhancement for NPN.

R2-2209568 Discussion on SON enhancement for NPN vivo discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2209574 SON and MDT Enhancement for NPN CATT discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2209823 SON/MDT enhancements for NPN Samsung R&D Institute India discussion

R2-2209899 Discussion on SON and MDT enhancements for NPN Huawei, HiSilicon discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2210032 Discussion on the SON/MDT enhancement for NPN Beijing Xiaomi Software Tech discussion Rel-18

R2-2210104 Impact of SNPN on MDT and MRO Nokia, Nokia Shanghai Bell discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2210149 SONMDT enhancement for NPN CMCC discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2210181 SON support for NPN Ericsson discussion NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2210292 Consideration on SON-MDT support for NPN ZTE Corporation, Sanechips discussion Rel-18

R2-2210303 Discussion on SON/MDT enhancements for Non-Public Networks Qualcomm Incorporated discussion Rel-18

### 8.13.8 Other

R2-2209726 Discussion of SON on MR-DC CPAC OPPO discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2209959 MRO for fast MCG link recovery and SCG failure Lenovo discussion Rel-18

R2-2209960 SON enhancements for CPAC Lenovo discussion Rel-18

R2-2210269 MRO for Fast MCG Recovery and MR-DC CPAC Nokia, Nokia Shanghai Bell discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2210304 Discussion on SONMDT enhancements for MR-DC CPAC and fast MCG Recovery Qualcomm Incorporated discussion Rel-18

R2-2210426 SON on fast MCG recovery OPPO discussion NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2210512 SON/MDT enhancement for fast MCG recovery CMCC discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2210513 SON MDT enhancement for MR-DC CPAC CMCC discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2210517 Discussion on failure information for CPAC SHARP Corporation discussion

R2-2210523 Discussion on RLF report in fast MCG recovery SHARP Corporation discussion

R2-2210626 Discussion on CPAC failure report NTT DOCOMO, INC. discussion Rel-18

R2-2210630 Discussion on MRO for MR-DC SCG failure scenario and fast MCG recovery failure NTT DOCOMO, INC. discussion Rel-18