3GPP TSG-RAN WG2 Meeting #121-bis electronic R2-2304206

April 17-26, 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).

### 5.4.1 General and stage-2 corrections

Including incoming LSs, TS 37.320 corrections

### 5.4.2 TS 38.314 corrections

### 5.4.3 RRC corrections

R2-2302942 Clarification on RLF Cause Samsung discussion NR\_SON\_MDT-Core

R2-2302943 Clarification on RLF cause (Option 1) Samsung CR Rel-16 38.331 16.12.0 3972 - F NR\_SON\_MDT-Core

R2-2302952 Clarification on RLF cause (Option 2) Samsung CR Rel-16 38.331 16.12.0 3973 - F NR\_SON\_MDT-Core

R2-2303447 Correction on logging RLM resources in the RLF report Ericsson, Qualcomm discussion Rel-16 38.331 NR\_SON\_MDT-Core

R2-2303448 Correction on logging RLM resources in the RLF report Ericsson, Qualcomm discussion Rel-17 38.331 NR\_SON\_MDT-Core

R2-2303449 Correction to the setting of locationInfo in MeasResultSCG-Failure Ericsson discussion Rel-16 38.331 NR\_SON\_MDT-Core

R2-2303450 Correction to the setting of locationInfo in MeasResultSCG-Failure Ericsson discussion Rel-17 38.331 NR\_SON\_MDT-Core

R2-2303897 Discussion on location configuration for SON and MDT features Huawei, HiSilicon discussion Rel-16 NR\_SON\_MDT-Core

## 6.9 SON MDT

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

Tdoc Limitation: 2 tdocs

### 6.9.1 Stage-2

Stage-2 corrections and system level discussions.

R2-2302451 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

R2-2302460 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

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

R2-2303898 Discussion on the UL PDCP packet average delay measurement of split bearer Huawei, HiSilicon discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2303899 Stage-2 correction on the UL PDCP packet average delay Huawei, HiSilicon CR Rel-17 37.320 17.3.0 0125 - F NR\_ENDC\_SON\_MDT\_enh-Core

### 6.9.3 SON Corrections

6.9.4 MDT Corrections

R2-2302611 Correction on timeSinceCHO-Reconfig in TS 38.331 CATT CR Rel-17 38.331 17.4.0 3953 - F NR\_ENDC\_SON\_MDT\_enh-Core

R2-2302612 Correction on SCG failure scenario of MHI in TS 38.331 CATT CR Rel-17 38.331 17.4.0 3954 - F NR\_ENDC\_SON\_MDT\_enh-Core

R2-2302653 Report of new packet loss rate China Unicom report Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2303451 Correction to the handling of RLF-Report after successful HO Ericsson discussion Rel-17 38.331 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2303452 On including TAC in the SHR Ericsson discussion Rel-17 38.331 NR\_ENDC\_SON\_MDT\_enh-Core

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

R2-2303696 NB-IoT UE location Info in RLF report Qualcomm Incorporated discussion Rel-17

R2-2303717 Correction on UE location information in NB-IoT RLF report Qualcomm Inc. CR Rel-17 36.331 17.4.0 4924 - F NR\_ENDC\_SON\_MDT\_enh-Core

R2-2304083 38.314 CR for the introduction of packet loss rate with delay threshold China Unicom, CATT CR Rel-17 38.314 17.2.0 0027 - B NR\_ENDC\_SON\_MDT\_enh-Core

## 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: 0.5 TU

Tdoc Limitation: 3 tdocs

### 7.13.1 Organizational

Ls in Rapporteur input.

R2-2302423 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

R2-2302452 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

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

R2-2304198 [Pre121bis-e][822][SON/MDT] Summary of agenda item 7.13.2 on MRO for inter-system handover for voice fallback CATT discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

**Agreements:**

1 RAN2 to support the scenario of “after RLF occurs shortly after successful HO from NR to E-UTRAN for voice fallback, a suitable E-UTRA cell is selected, and the UE tries RRC connection setup procedure for the voice service in the E-UTRA cell, which is agreed in RAN3”.

2 FFS: Introduce an indication for the scenario of RLF after successful voice fallback HO in the LTE RLF report regarding voice fallback.

3 UE logs the agreed indication regarding voice fallback in the NR RLF report.

4 FFS: RAN2 agree to differentiate an acceptable E-UTRA cell from a suitable E-UTRA cell in the RLF report in case of voiceFallback HOF. FFS explicit or implicit indications.

R2-2302613 Consideration on Inter-system Handover for Voice Fallback CATT discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2303143 Consideration on MRO for inter-system handover for voice fallback ZTE Corporation, Sanechips discussion Rel-18

R2-2303183 Further discussion on MRO of inter-system HO voice fallback OPPO discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core Late

R2-2303244 MRO for inter-system handover for voice fallback Lenovo discussion Rel-18

R2-2303453 MRO for inter-system handover for voice fallback Ericsson discussion NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2303683 MRO for inter-system handover for voice fallback Samsung R&D Institute India discussion

R2-2303694 Data collection for MRO for inter-system handover for voice fallback Qualcomm Incorporated discussion Rel-18

R2-2303956 Discussion on MRO for inter-system handover for voice fallback Huawei, HiSilicon discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

### 7.13.3 MDT override

Will not be treated in #121b

### 7.13.4 SHR and SPCR

Will not be treated in #121b

### 7.13.5 SON for NR-U

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

Will not be treated in #121b online session. Offline email discussion is possible.

R2-2304200 Summary of AI 7.13.5 SON for NR-U (Ericsson) Ericsson discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

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

**Proposal 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.**

**Proposal 4 For the other BWPs in which the UE experienced the consistent LBT failure, the UE logs:**

**a The locationAndBandwidth information of the BWP**

**b The subcarrierSpacing information of the BWP**

**c The absoluteFrequencyPointA information of the BWP (logged once for all the BWPs of the cell)**

**Proposal 8 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, 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.**

**Proposal 10 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).**

**Proposal 13 The UE logs the available RSSI measurement in the RLF-Report. FFS in which case.**

**Proposal 15 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**

**b For HOF, the latest measured RSSI of the NR-U channel of the source cell, and if available, the latest measured RSSI of the NR-U channel of the target cell**

**Proposal 20 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, and the information on the multiple BWPs in which consistent UL LBT failures was triggered**

**Proposal 22 RAN2 to postpone discussion of the LBT information in MDT.**

**Proposal 23 RAN2 to keep discussing in RAN2#122 the proposals in this document (R2-2304200) not yet discussed.**

R2-2302857 Discussion on SON for NR-U Nokia, Nokia Shanghai Bell discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2302858 Discussion on storing LBT-FailureRecoveryConfig (Reply LS to R2-2300031) Nokia, Nokia Shanghai Bell discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2303113 SON Enhancement for NR-U CATT discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2303144 Consideration on NR-U related SON ZTE Corporation, Sanechips discussion Rel-18

R2-2303245 Discussion on MRO for NR-U Lenovo discussion Rel-18

R2-2303673 SON/MDT enhancements for NR-U Samsung R&D Institute India discussion

R2-2303695 Discussion on NR-U Related Enhancements Qualcomm Incorporated discussion Rel-18

R2-2303803 SONMDT enhancement for NR-U CMCC discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core Late

R2-2304031 Discussion on SON for NR-U Xiaomi discussion Rel-18

R2-2304111 Enhancements of SON reports for NR-U Ericsson discussion

### 7.13.6 RACH enhancement

R2-2304196 Summary of 7.13.6 RACH enhancement Apple discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

=> 1 FFS: Include the actual number of msg3 repetitions in RA report.

 2 FFS: Include NSAG priority in RA report.

 3b FFS: UE reports NSAG IDs which are associated with the S-NSSAI(s) that triggered the random access attempt or NSAG IDs which associated with the S-NSSAI(s) triggering the access attempt and that are included in SIB1.

 3c FFS: Include S-NSSAI(s) in RA report.

R2-2302614 RACH enhancement for SON CATT discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2302856 RA report retrieval Nokia, Nokia Shanghai Bell discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2303145 Consideration on RACH enhancements ZTE Corporation, Sanechips discussion Rel-18

R2-2303368 Remaining issues of SON enhancements for RACH Apple discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2303454 RA report enhancement Ericsson discussion NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2303670 SON/MDT enhancements for RACH Samsung R&D Institute India discussion

R2-2303783 Discussion on RACH enhancement for SON China Telecom discussion Late

R2-2303798 Further considerations on RACH Enhancement CMCC discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core Late

R2-2303806 Consideration on the SON enhancements for RACH report Beijing Xiaomi Software Tech discussion Rel-18 Late

R2-2303829 SON enhancement for RA report Sharp discussion

R2-2303957 Discussion on RACH enhancement Huawei, HiSilicon discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

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

Will not be treated in #121

R2-2303958 Discussion on SON MDT enhancements for NPN and NR-U Huawei, HiSilicon discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

### 7.13.8 Other

Will not be treated in #121b

R2-2303182 SON on fast MCG recovery OPPO discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core

R2-2303246 Discussion on MRO for CPAC and fast MCG link recovery Lenovo discussion Rel-18

R2-2303787 Discussion on CPAC failure report NTT DOCOMO, INC. discussion

R2-2303799 Further considerations on fast MCG recovery CMCC discussion Rel-18 NR\_ENDC\_SON\_MDT\_enh2-Core Late