**3GPP TSG-RAN WG2 Meeting #116 electronic R2-2xxxxxx**

**Online, November 1-12, 2021**

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:
* [AT116][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: 5 tdocs

WI is declared 100% complete

### 6.13.1 Organizational

Tdoc Limitation: 0

LS in etc

R2-2204405 Reply LS on UE context keeping in the source cell (R3-212944; contact: Ericsson) RAN3 LS in Rel-17 To:RAN2

R2-2204406 LS Reply on the details of logging forms reported by the gNB-CU-CP, gNB-CU-UP and gNB-DU under measurement pollution conditions (R3-214429; contact: Ericsson) RAN3 LS in Rel-17 To:SA5, RAN2

R2-2204407 Reply LS on scenarios need to be supported for MRO in SCG Failure Report (R3-216159; contact: Samsung) RAN3 LS in Rel-17 To:RAN2

R2-2204408 Reply LS on Area scope configuration and Frequency band info in MDT configuration (R3-221178; contact: Huawei) RAN3 LS in Rel-17 To:RAN2

R2-2204409 Reply LS to SA5 on beam measurement reports (R3-221383; contact Ericsson) RAN3 LS in Rel-17 To:SA5 Cc:RAN2

R2-2204412 Reply LS on the details of logging forms reported by the gNB-CU-CP, gNB-CU-UP and gNB-DU under measurement pollution conditions (S5-213499; contact: Ericsson) SA5 LS in Rel-17 To:RAN3 Cc:RAN2

R2-2204413 Reply LS on Report Amount for M4, M5, M6, M7 measurements (S5-214523; contact: Nokia) SA5 LS in Rel-17 To:RAN3 Cc:RAN2

R2-2204414 Reply LS on the details of logging forms reported by the gNB-CU-CP, gNB-CU-UP and gNB-DU under measurement pollution conditions (S5-215493; contact: Ericsson) SA5 LS in Rel-17 To:RAN3 Cc:RAN2

R2-2204415 Reply LS on the Beam measurement reports for the MDT measurements (S5-216628; contact: Ericsson) SA5 LS in Rel-17 To:RAN3 Cc:RAN2

R2-2204448 LS on UP measurements for Successful Handover Report (R3-212935; contact: Ericsson) RAN3 LS in Rel-17 To:RAN2

R2-2204498 Reply LS on MDT M6 calculation for split bearers in MR-DC (R3-222868; contact: Ericsson) RAN3 LS in Rel-17 To:RAN2, SA5

### 6.13.2 CRs and Rapporteur Resolutions

Tdoc Limitation: 0.

CR Rapporteurs to provide input CRs, and Provide resolution proposals for smaller and editorial corrections.

R2-2205903 Miscellaneous rapporteur corrections for SON-MDT Ericsson CR Rel-17 38.331 17.0.0 3136 - F NR\_ENDC\_SON\_MDT\_enh-Core

### 6.13.3 SON Corrections

* **[AT118e][801][SON/MDT] Summary of RILs discussion (Ericsson, Huawei)**

For 1st round: Based on pre118 #801 email discussion, figure out the controversial RILs and RILs with easy agreeable proposals.

For 2nd round: Discuss NOKIA094, H073, Z422 and proposal 3-19 in R2-2206344 and try to get consensus on these issues.

For 3rd round: “To be discussed how/where information associated to the visited PSCells [ensuring the chronological order] should be captured in the spec”

For 4th round: running the big CR to capture all the agreements on RILs from this meeting. Please don’t forget the agreed changes in 5.4.

 1st round Intended outcome: Report full of proposals…

 1st round Deadline: 11:23 UTC, Tuesday May 10th

 2nd round Intended outcome: Report full of proposals…

 2nd round Deadline: 11:23 UTC, Monday May 16th

 3rd round Intended outcome: Report with only one proposal…

 3rd round Deadline: 11:23 UTC, Wed May 18th

 4th round Intended outcome: Endorsed running CR

 4th round Deadline: 13:57 UTC, Wed May 25th

R2-2206344 Summary of RAN2-118 #801 offline discussion Ericsson Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

The following RILs are FFS through email discussion: NOKIA094, H073, Z422.

Agreements:

1 The changes associated to the following RILs (as captured in the rapporteur CR):

• E070, E071, E072, E142, E113, E075, E078, E115, E116, E117, E118, E119, E123, E137, E069

• S712, S703, S706, S713, S714, S707, S709, S710, S716 (Z413, E123)

• Z403, Z404, Z405, Z414, Z416, Z417, Z420, Z413, Z424, Z418, Z415, Z421

• H069, H070, H075, H588, H077, H079, H070, H098, H101, H195, H100, H076

• N025, N029, N030, N091, NOKIA095, NOKIA100,

• C301, C310, C308, C303, C304, C305, C320, C311, C312, C321, C329

• I044, I006

• B181

2 RAN2 to reject the changes associated to the following RILs:

• S701, S702, S704, S705, S708, S715

• W006

• N027, N025, N028, NOKIA093, N029, N092, NOKIA097

• H071, H072, H104, H108

• C316

• O700, O701

• B180

R2-2206464 Summary of RILs discussion Ericsson, Huawei

Agreements:

1 The following options provides more information to protect the signalling based MDT configuration and result.

 • BOOLEAN OPTIONAL

2 For the Rel.17 PSCell MHI, the PSCells visited while connected to a certain PCell X are appended to the certain PCell X List in the MHI in the nested structure when the corresponding PCell X related entries are appended to the MHI. To be discussed how/where information associated to the visited PSCells [ensuring the chronological order] should be captured in the spec.

3 RAN2 agree to stick to the agreement reached in RAN2#117, on the inclusion of CHO configuration in the RLF report for the case of too late CHO, unless a new LS is received from RAN3.

4 RAN2 agree to keep the current implementation in the rapporteur CR i.e., UE logs the HO type at the time of handover failure.

5 [H588] RAN2 postpone the inclusion of all the Rel-17 SIBs in the RA report for SI request to the next release.

FFS on “To be discussed how/where information associated to the visited PSCells [ensuring the chronological order] should be captured in the spec.” related to the above agreement 2 through email #801.

Agreements:

4 No need to pursue [Z422], the msgA-SCS-From-prach-ConfigurationIndex is kept.

Proposal 5 [E079] is not pursued in Rel-17, i.e. UE does not need to log the RA-InformationCommon of the RACH performed toward source cell during the DAPS HO, in the RLF report.

6 [H099] is not pursued in Rel-17 i.e., RAN2 agree that separately handling the SN and MN related RACH report is not supported.

7 [H073] UE checks the availability of the SHR, at the time of reporting.

8 RAN2 postpone [C327] (i.e., the Inter-RAT mobility (MobilityFromNR) failure when the UE is configured with CHO configuration) to the next release.

9 RAN2 agree that the UE logs the timeSinceFailure for each CEF report as a time elapsed between the point in time of the last CEF occurrence for a given entry in the CEF report list to the point in time that CEF report list is fetched by the network (i.e., until UE Information Response procedure)

10 RAN2 agree to update the procedural text to include CHO and DAPS related RLF report contents in the RLF report based on UE capability

12 [Z410] is not pursued i.e., no change to the current specification.

13 [H074] RAN2 agree that UE includes the UPInterruptionTimeATHO only if a PDCP PDU was received from the source cell of the concerned HO, and a non-duplicated PDCP PDU was received from the target cell of the concerned HO.

14 [NOKIA096] RAN2 agree that all the SHR triggering thresholds including T304, T310 and T312 thresholds are applicable to the DAPS HO, beside the sourceDAPS-FailureReporting (i.e., no changes to the current spec needed).

15 [C326] not pursued. RAN2 agree to stick to the current agreement that the CHOCandidateCellList are not included in the SHR.

16 [H106] RAN2 agree that timeSinceCHOReconfig will be logged when configuration of conditional handover is available in VarConditionalReconfig at the moment of declaring the radio link failure, or handover failure (i.e., no changes to the current spec).

17 [C322 and E076] RAN agree that setting of the 2-step parameters can be moved before the setting of the 4-step RA parameters.

18 [H099] RAN2 agree to postpone the issue related to the splitting the IF condition for the setting of the msg1-SubcarrierSpacing. RAN2 can revisit it if needed

R2-2206569 Summary of RILs discussion – Phase 3 Ericsson

Agreements:

1 The UE should log in the PSCell nested structure the following entries in chronological order:

• One entry for each visited PSCell (including the timeSpent with the PSCell and the PSCell ID)

• One entry for each time interval without PSCells (including the time spent without PSCell)

2 How to address agreement 1 in RRC spec could be further studied at next meeting.

R2-2205363 [Z408] Consideration on RLF-report for CHO-DAPS ZTE Corporation, Sanechips discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2204942 [C328] Clarification on CHO Information Logging in Neighbour Cell Measurement in RLF Report CATT draftCR Rel-17 38.331 17.0.0 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2205894 Corrections to mobility history information reporting [E120, E121, E122] Ericsson CR Rel-17 38.331 17.0.0 3131 - F NR\_ENDC\_SON\_MDT\_enh-Core

R2-2204880 Clarification on SHR for DAPS HO Nokia, Nokia Shanghai Bell discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2204876 [N030] Correction to conditions determining successful handover report Nokia, Nokia Shanghai Bell CR Rel-17 38.331 17.0.0 3011 - F NR\_ENDC\_SON\_MDT\_enh-Core

R2-2204877 [N028] Correction to SuccessHO-Config Nokia, Nokia Shanghai Bell CR Rel-17 38.331 17.0.0 3012 - F NR\_ENDC\_SON\_MDT\_enh-Core

R2-2204878 Correction to Mobility History Information setting [N094][N095][E122][H072] Nokia, Nokia Shanghai Bell CR Rel-17 38.331 17.0.0 3013 - F NR\_ENDC\_SON\_MDT\_enh-Core Late

R2-2204879 Corrections on Rel-17 RLFreport Nokia, Nokia Shanghai Bell discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2204883 RIL: [S702] [S703] [S704] [S705] [S706] [S707] [S708] Samsung discussion NR\_ENDC\_SON\_MDT\_enh-Core

R2-2204884 RIL: [S709][S710][S711][S712] Samsung discussion NR\_ENDC\_SON\_MDT\_enh-Core

R2-2204885 RIL: [S713][S714][S715]Using ENUMERATED {true} instead of BOOLEAN Samsung discussion NR\_ENDC\_SON\_MDT\_enh-Core

R2-2204938 [C320] Add SgNB RA Report related Information CATT draftCR Rel-17 38.331 17.0.0 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2204939 Addition of SON Features Enhancement in Stage 2 CATT draftCR Rel-17 38.300 17.0.0 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2204940 [C326] Clarification on CHO Candidate Cell List in SHR CATT draftCR Rel-17 38.331 17.0.0 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2204941 [C327] Correction on CHO Information Logging for Mobility from NR Failure CATT draftCR Rel-17 38.331 17.0.0 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2204966 [B180] TP for reporting CHO execution condition in RLF report Lenovo discussion Rel-17

R2-2204967 [B181] TP for reporting time information for SCG failure Lenovo discussion Rel-17

R2-2205046 [W006] Correction on the generation and discarding of SHR NEC CR Rel-17 38.331 17.0.0 3035 - F NR\_ENDC\_SON\_MDT\_enh-Core

R2-2205072 Discussion on SON with DAPS [S704] Huawei, HiSilicon discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2205074 Introduction of SHR in TS 38.300 Huawei, HiSilicon CR Rel-17 38.300 17.0.0 0453 - F NR\_ENDC\_SON\_MDT\_enh-Core

R2-2205075 Corrections on TS 37.320 for SON and MDT Huawei, HiSilicon CR Rel-17 37.320 17.0.0 0118 - F NR\_ENDC\_SON\_MDT\_enh-Core

R2-2205361 [Z401][Z413] Consideration on multiple CEF report ZTE Corporation, Sanechips discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2205362 [Z421] Consideration on RA report ZTE Corporation, Sanechips discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2205364 Draft CR to 38331 on RLF-report ZTE Corporation, Sanechips draftCR Rel-17 38.331 17.0.0 F NR\_ENDC\_SON\_MDT\_enh-Core

R2-2205704 HO related SON corrections Qualcomm Incorporated discussion Rel-17

R2-2205892 Corrections to 2-step RA Report [E076][E078] Ericsson CR Rel-17 38.331 17.0.0 3130 - F NR\_ENDC\_SON\_MDT\_enh-Core

R2-2205893 Corrections to Mobility History Information [E120][E121][E122] Ericsson discussion NR\_ENDC\_SON\_MDT\_enh-Core

R2-2205901 Including source-related RA-Information in SHR [E079] Ericsson CR Rel-17 38.331 17.0.0 3135 - F NR\_ENDC\_SON\_MDT\_enh-Core

### 6.13.4 MDT Corrections

R2-2204943 The Correction on TS37.320 CATT discussion Rel-17 37.320 NR\_ENDC\_SON\_MDT\_enh-Core

=> The TP is agreed.

* **[AT118e][886][SON/MDT] Correction on TS37.320 (CATT)**

Provide formal CR of the agreed TP of R2-2204943 for reviewing

 Intended outcome: Agreed 38.320 CR

 Deadline: 04:44 UTC, Friday May 20th

R2-2205076 Corrections on TS.38.314 for the delay measurement for split bearer Huawei, HiSilicon CR Rel-17 38.314 17.0.0 0023 - F NR\_ENDC\_SON\_MDT\_enh-Core

=> Try to discuss offline #805 (Huawei)

R2-2205689 TP on L2 measurements for total RAN delay calculation Ericsson discussion NR\_ENDC\_SON\_MDT\_enh-Core

=> Try to discuss offline #805 (Huawei)

R2-2204664 CR to 38314 on RA preamble measurement ZTE Corporation, Sanechips, CMCC CR Rel-17 38.314 17.0.0 0022 - F NR\_ENDC\_SON\_MDT\_enh-Core

=> Try to discuss offline #805 (Huawei)

* **[AT118e][805][SON/MDT] Corrections on TS.38.314 (Huawei)**

Discussion on R2-2205076, R2-2205689 and R2-2204664 and figure out the agreeable changes and provide the CR accordingly

 Intended outcome: Agreed 38.314 CR

 Deadline: 12:34 UTC, Friday May 20th

R2-2205686 TP on signalling based logged MDT override protection in inter-PLMN scenarios [RIL number E069] Ericsson discussion NR\_ENDC\_SON\_MDT\_enh-Core

R2-2205687 TP on IDC issues in logged MDT [RIL number E074] Ericsson discussion NR\_ENDC\_SON\_MDT\_enh-Core

R2-2205688 TP on multiple CEF reports [RIL number E075 and E123] Ericsson discussion NR\_ENDC\_SON\_MDT\_enh-Core

R2-2205736 [S716] Remaining issues on multiple CEF reports Samsung Electronics Co., Ltd discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2205738 [S701] Remaining issues on signalling based MDT protection Samsung Electronics Co., Ltd discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2204672 [O700][O701] RRC corrections for MDT OPPO discussion Rel-17 NR\_SON\_MDT-Core

### 6.13.5 UE Capabilities

Initial discussion on Features / UE caps developed in RAN2, if any. Note that this AI is complementary to AI 6.0.2.

* **[AT118e][802][SON/MDT] UE capabilities related to SONMDT (CATT)**

Based on R2-2204944, R2-220494, R2-2205073 and R2-2205705, discuss the necessary changes to 38.306 and 38.331

 Intended outcome: Report and agreeable CRs

 Deadline: 11:23 UTC, Monday May 16th

R2-2206445 Report of [AT118e][802][SON/MDT] UE capabilities related to SONMDT (CATT)

=> Noted

R2-2206451 Add Early Measurement related MDT UE Capability in TS38.331

=> The changes are agreed and will be merged into the big CR.

R2-2206450 Add Early Measurement related MDT UE Capability and Corrections in TS38.306

=> The changes are agreed and will be merged into the big CR.

R2-2204944 [C329] Add MDT related UE Capabilities of EMR CATT draftCR Rel-17 38.331 17.0.0 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2204945 Add MDT related UE Capabilities of EMR CATT draftCR Rel-17 38.306 17.0.0 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2205073 Corrections on TS 38.306 for UE capabilities for SON and MDT Huawei, HiSilicon CR Rel-17 38.306 17.0.0 0707 - F NR\_ENDC\_SON\_MDT\_enh-Core

R2-2205705 SON MDT UE Capabilities Qualcomm Incorporated discussion Rel-17

### 6.13.6 Other

R2-2205222 Discussion on PSCell MHI recording for RRC inactive state Sharp discussion R2-2202939

R2-2205567 Addition of Last Serving Beam in RLF Report Nokia, Nokia Shanghai Bell discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2205566 Inclusion of the CSI reports in MDT framework Nokia, Nokia Shanghai Bell discussion Rel-17 TEI17

## 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).

Documents in this agenda item will be handled in a break out session

Tdoc Limitation: See tdoc limitation for Agenda Item 5

### 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

R2-2204589 Corrections on LTE UE RLF Report China Telecom, CATT, Ericsson, ZTE discussion

=> Noted

R2-2204594 Corrections on LTE UE RLF Report China Telecom, CATT, Ericsson, ZTE CR Rel-16 38.331 16.8.0 2976 - F NR\_SON\_MDT-Core

=> The changes are agreed and will be merged into big CR. (Ericsson)

R2-2204595 Corrections on LTE UE RLF Report China Telecom, CATT, Ericsson, ZTE CR Rel-17 38.331 17.0.0 2977 - A NR\_SON\_MDT-Core

=> The changes are agreed and will be merged into running R17 CR. (Ericsson)

 R2-2205660 Addition of missing information into RA-InformationCommon-r16 Apple, Ericsson CR Rel-16 38.331 16.8.0 3108 - F NR\_SON\_MDT-Core

=> The changes are agreed and will be merged into big CR. (Ericsson)

R2-2205661 Addition of missing information into RA-InformationCommon-r16 Apple, Ericsson CR Rel-17 38.331 17.0.0 3109 - A NR\_SON\_MDT-Core

=> The changes are agreed and will be merged into running R17 CR. (Ericsson)

R2-2205885 On DAPS handover failure handling Ericsson CR Rel-16 38.331 16.8.0 3123 - F NR\_SON\_MDT-Core

=> Postponed

R2-2205886 On sensor information configuration Ericsson CR Rel-16 38.331 16.8.0 3124 - F NR\_SON\_MDT-Core

=> not pursued

R2-2205887 On sensor information configuration Ericsson CR Rel-17 38.331 17.0.0 3125 - A NR\_SON\_MDT-Core

=> not pursued

* **[AT118e][888][SON/MDT] R16 Corrections on TS.38.331 (Ericsson)**

Provide the merged R16 38.331 CR to capture all the agreed changes from this meeting.

 Intended outcome: Agreed R16 38.331 CR

 Deadline: 12:34 UTC, Friday May 20th

R2-2205888 On including SSB and CSI-RS measurements in RLF report Ericsson CR Rel-16 38.331 16.8.0 3126 - F NR\_SON\_MDT-Core

R2-2205889 On including SSB and CSI-RS measurements in RLF report Ericsson CR Rel-17 38.331 17.0.0 3127 - A NR\_SON\_MDT-Core

R2-2204548 Corrections to SON/MDT capabilities Lenovo CR Rel-16 38.306 16.8.0 0675 1 F NR\_SON\_MDT-Core R2-2202223

R2-2204549 Corrections to SON/MDT capabilities Lenovo CR Rel-17 38.306 17.0.0 0699 - A NR\_SON\_MDT-Core

R2-2204916 Correction on delay value configuration description Huawei, HiSilicon CR Rel-16 38.331 16.8.0 3015 - F NR\_SON\_MDT-Core

R2-2205890 On ObtainCommonLocation related configuration Ericsson CR Rel-16 38.331 16.8.0 3128 - F NR\_SON\_MDT-Core

R2-2205891 On ObtainCommonLocation related configuration Ericsson CR Rel-17 38.331 17.0.0 3129 - A NR\_SON\_MDT-Core

R2-2204937 Add TAC into Previous Cell Information of RLF Report CATT draftCR Rel-16 36.331 16.8.0 NR\_SON\_MDT-Core

R2-2205760 Discrepancy on inclusion of reconnectCellId Samsung Electronics Co., Ltd discussion Rel-16 38.331 NR\_SON\_MDT-Core