**3GPP TSG-RAN WG2 Meeting #113bis electronic R2-2xxxxxx**

**Online, April 12 – April 20, 2021**

Agenda Item: xx

Source: Session chair (CMCC)

Title: Report from SON/MDT session

Document for: Approval

Recording of voice or video at meetings is not used in 3GPP. This applies also to this e-Meeting. At this e-Meeting, no specific actions are taken to prevent the recording of web conferences. Companies that have concerns related to recordings, if any, may express those by email in the main meeting organizational thread [AT112e][000]

**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:

* [AT113b][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

## 6.6 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: 7 tdocs. See also tdoc limitation for Agenda Item 6

### 6.6.1 General and stage-2 corrections

Including incoming LSs, TS 37.320 corrections

R2-2102632 Reply LS on MDT Stage 2 and Stage 3 alignment (R3-211140; contact: Ericsson) RAN3 LS in Rel-16 eMDT\_UMTSLTE-Core To:SA5, RAN2 Cc:-

R2-2102641 Reply LS on limitation of Propagation of immediate MDT configuration in case of Xn inter-RAT HO (R3-211335; contact: ZTE) RAN3 LS in Rel-16 NR\_SON\_MDT To:SA5, RAN2 Cc:-

R2-2102671 Reply LS on propagation of user consent related information during Xn inter-PLMN handover (S3-211330; contact: Ericsson) SA3 LS in Rel-16 NR\_SON\_MDT-Core To:RAN3 Cc:RAN2, SA5

R2-2102672 Reply LS on the user consent for trace reporting (S3-211338; contact: Qualcomm) SA3 LS in Rel-16 NR\_SON\_MDT-Core To:RAN2, SA5 Cc:RAN3

R2-2104430 Summary for 6.6.1 General and stage-2 corrections CMCC

R2-2103549 Clarification on RAN measurements collection period Nokia, Nokia Shanghai Bell CR Rel-16 37.320 16.4.0 0105 - F NR\_SON\_MDT-Core

R2-2104037 Clarification on Average UE throughout measurement Samsung discussion NR\_SON\_MDT-Core

R2-2104199 Correction to 37320 on MDT context handling ZTE Corporation, Sanechips CR Rel-16 37.320 16.4.0 0106 - C NR\_SON\_MDT-Core

The flowing email discussion will be arranged during the meeting week:

* [AT113b-e][8xx][NR/R17 SON/MDT]  Stage-2 corrections (CMCC, Nokia)

- capture the agreements related to stage-2 corrections into one merged 37.320 CR

Intended outcome: agreed CR

Deadline: Thursday 15/04/2021

R2-2103819 [Draft] Reply LS on MDT Stage 2 and Stage 3 alignment Ericsson LS out Rel-16 NR\_SON\_MDT-Core To:RAN3 Cc:SA5

### 6.6.2 TS 38.314 corrections

R2-2103821 On corrections to packet loss rate measurements Ericsson CR Rel-16 38.314 16.3.0 0014 - F NR\_SON\_MDT-Core

### 6.6.3 RRC corrections

Including outcome of email discussion [Post113-e][850][NR16 SON/MDT] Timestamp of event triggered MDT (Ericsson)

R2-2103820 Report of email discussion [Post113-e][NR/R16 SON/MDT] Timestamp of event triggered MDT Ericsson discussion

R2-2102909 Correction on periodic logging in any cell selection state Samsung Electronics Co., Ltd CR Rel-16 38.331 16.4.1 2488 - F NR\_SON\_MDT-Core

R2-2102911 Correction on RLF report content determination for EUTRA frequency measurements Samsung Electronics Co., Ltd CR Rel-16 38.331 16.4.1 2489 - F NR\_SON\_MDT-Core

R2-2102912 Correction on RLF report for re-connection Samsung Electronics Co., Ltd CR Rel-16 36.331 16.4.0 4610 - F NR\_SON\_MDT-Core

R2-2103101 Correction on Inter-RAT MRO in 38.331 CATT CR Rel-16 38.331 16.4.1 2500 - F NR\_SON\_MDT-Core

R2-2103812 on ReconnectionCellId and timeUntilReconnection field Ericsson CR Rel-16 36.331 16.4.0 4623 - F NR\_SON\_MDT-Core

R2-2103815 On the lack of PLMN identity check in case of anyCellSelected state related logging Ericsson CR Rel-16 38.331 16.4.1 2536 - F NR\_SON\_MDT-Core

??=> Waiting progress from LTE session

R2-2103817 On TimeUntilReconnection and ReconnectionCellID logging as part of RLF report Ericsson CR Rel-16 38.331 16.4.1 2537 - F NR\_SON\_MDT-Core

R2-2103818 On releasing WLAN-BT-Sensor configurations upon returning from inactive Ericsson CR Rel-16 38.331 16.4.1 2538 - F NR\_SON\_MDT-Core

R2-2103822 ReconnectCellID in multi PLMN scenarios Ericsson discussion

R2-2103875 Discussion on RLF reporting Apple, Ericsson, MediaTek Inc. discussion Rel-16 NR\_SON\_MDT-Core

R2-2103876 Clarification on RA reporting Apple draftCR Rel-16 38.331 16.4.1 F NR\_SON\_MDT-Core

R2-2104002 Discussion on the location reporting in inter-RAT measurement for immediate MDT Huawei, HiSilicon discussion Rel-16 NR\_SON\_MDT-Core

R2-2104198 CR to 36331 on RLF report and logged MDT report ZTE Corporation, Sanechips CR Rel-16 36.331 16.4.0 4636 - F NR\_SON\_MDT-Core

R2-2103766 Clarification on LocationInfo reporting for SON NTT DOCOMO, INC. CR Rel-16 36.331 16.4.0 4621 - F NR\_ENDC\_SON\_MDT\_enh-Core

R2-2103073 Handling of user contest for location reporting in SONMDT QUALCOMM Incorporated discussion

R2-2104003 Discussion on the user consent for trace reporting Huawei, HiSilicon discussion Rel-16 NR\_SON\_MDT-Core

## 8.13 SON/MDT

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

Time budget: 1 TU

Tdoc Limitation: 6 tdocs

Email max expectation: 6 threads

### 8.13.1 Organizational

R2-2102639 LS on information needed for MRO in SCG Failure Report (R3-211332; contact: Samsung) RAN3 LS in Rel-17 NR\_ENDC\_SON\_MDT\_enh To:RAN2 Cc:-

R2-2102629 Reply LS on on energy efficiency (R3-207014; contact: Ericsson) RAN3 LS in Rel-17 NR\_ENDC\_SON\_MDT\_enh To:SA5 Cc:RAN2, SA

R2-2102640 LS on the details of logging forms reported by the gNB-CU-CP, gNB-CU-UP and gNB-DU under measurement pollution conditions (R3-211334; contact: Ericsson) RAN3 LS in Rel-17 NR\_ENDC\_SON\_MDT\_enh To:SA5, RAN2 Cc:-

### 8.13.2 SON

#### 8.13.2.1 Handover related SON aspects

Including conditional handover and DAPS

Including outcome of email discussion [Post113-e][851][NR17 SON/MDT] HO related SON changes (Ericsson)

R2-2103945 [Post113-e][851][NR17 SON/MDT] HO related SON changes (Ericsson) Ericsson discussion NR\_ENDC\_SON\_MDT\_enh-Core

=> RAN2 to focus on the following CHO scenarios at least:

a. Scenario 1 (too late HO): 1a, 1b, 1c, 1d

b. Scenario 2 (too early HO): 2a, 2b

c. Scenario 3 (HO to wrong cell): 3a, 3b, 3c, 3e, 3f

FFS the need to merge certain scenarios, e.g. 1b/1c, 2a/2b

Agreements:

1 Include in the RLF-report for CHO the following:

a. Configured CHO execution condition(s) (A3 and/or A5 event configuration, TTT values)

b. Fulfilled CHO execution condition(s), i.e. whether A3 and/or A5 event was fullfilled, for the cell(s) in which CHO execution was triggered.

c. Latest radio measurement results of the candidate target cells

Inclusion of a) and c) are subject to the RAN3 reply to the RAN2 LS R2-2102149.

Try to reuse existing mechanism as much as possible.

2 Include in the RLF report for CHO the following information:

a. Indication of whether a measured neighbour cell included in the existing measResultNeighCells was a CHO candidate cell or not.

b. List of candidate cells IDs.

Inclusion of a) and b) are subject to the RAN3 reply to the RAN2 LS R2-2102149

3 The following information in the RLF report for CHO are needed:

b. CHOCellId, to indicate the selected CHO cell after the first connection failure and before the reestablishment

c. CellID to indicate the cell in which the UE attempted the second reestablishment after failure of the first reestablishment following an HOF/RLF.

How to provide these information is FFS.

=> RAN2 to focus on the following DAPS scenarios:

a. Scenario 1 (too late DAPS): 1a, 1b

b. Scenario 2 (too early DAPS): 2a, 2b/2c

c. Scenario 3 (DAPS to wrong cell): 3a, 3b/3c

FFS whether to merge scenarios 2b/2c and 3b/3c.

Agreements:

1 Include in the RLF report for DAPS HO, the following measurements (reuse the legacy mechanism and IEs):

a. Measurements of neighbour cells when HOF or RLF occurs

2 RAN2 to agree the intention of the following timers:

a. Time elapsed since DAPS HO execution until RLF occurs in source cell before fallback

b. Time elapsed since DAPS HO execution until RLF occurs in source cell after fallback

c. The elapsed time between the execution of DAPS and RLF in target cell

FFS if for the above timers the existing timers can be reused.

3 Include in the RLF report for DAPS HO the following information:

a. RLF-cause of the RLF occurred in the source cell while performing a DAPS HO

b. Explicit indicator for DAPS handover failure

4 At least the following triggering conditions are applied for generating an HO Success Report in the case that the HO succeeds:

a. The UE logs the HO success report if, while doing HO, T310 value exceeds a threshold

b. The UE logs the HO success report if, while doing HO, T312 value exceeds a threshold

c. The UE logs the HO success report if, while doing HO, T304 exceeds a threshold

d. In case of DAPS, if the UE gets an RLF in the source while doing DAPS.

* [AT113b-e][801][NR/R17 SON/MDT]  Successful HO Report (Ericsson)

- Step 1: Collect the companies’ view on the proposals in 2.3 in R2-2103945. Deadline is 16:00 UTC 15/04/2021.

- Step 2: Based on majority view provide the agreeable proposals

- Step 3: Collect the companies’ view on the new proposals and goto Step 2 until 04:00 UTC Friday 16/04/2021.

- Step 4: Providing final proposals for CB session. Note that in CB session there will not be technical discussion again. We try to directly agree the final proposals.

Intended outcome: Easily agreeable proposals

Deadline: Friday 16/04/2021

R2-2104502 Summary of AI 8.13.2.1 Handover related SON aspects Ericsson

R2-2103065 HO related SON changes QUALCOMM Incorportated discussion Rel-17

R2-2103098 Discussion on CHO and DAPS Aspect CATT discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2103142 Further consideration on handover related SON OPPO discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2103157 Discussion on CHO configuration optimization aspects China Telecommunication discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2103164 Discussion on signalling and content of DAPS HO report vivo discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2103385 SON Enhancements for CHO Lenovo, Motorola Mobility discussion Rel-17

R2-2103386 SON Enhancement for DAPS Handover Lenovo, Motorola Mobility discussion Rel-17

R2-2103550 Further clarifications on MRO Nokia, Nokia Shanghai Bell discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2103709 Further consideration on SON Enhancement for CHO CMCC discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2103710 SON Enhancement for DAPS CMCC discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2103731 Discussion on handover related SON aspects Huawei, HiSilicon discussion Rel-17

R2-2103933 Introducing additional CHO related failure/ success info, including multiple event Samsung Telecommunications discussion NR\_ENDC\_SON\_MDT\_enh-Core

R2-2103944 Handover-related SON aspects Ericsson discussion NR\_ENDC\_SON\_MDT\_enh-Core

R2-2104045 SON Enhancements for DAPS HO Samsung discussion NR\_ENDC\_SON\_MDT\_enh-Core

R2-2104070 Discussion on RLF report for DAPS SHARP Corporation discussion NR\_ENDC\_SON\_MDT\_enh-Core

R2-2104192 Remaining issues on RLF report enhancements ZTE Corporation, Sanechips discussion Rel-17

#### 8.13.2.2 2-step RA related SON aspects

Including outcome of email discussion [Post113-e][852][NR17 SON/MDT] 2 step RA and other SON changes (CATT)

R2-2103093 Report of [Post113-e][852][NR17 SON/MDT] 2 step RA and other SON changes (CATT) CATT discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core Late

* [AT113b-e][802][NR/R17 SON/MDT]  2 step RA and other SON enhancements (CATT)

- Step 1: Collect the companies’ view on the proposals in R2-2103093. Deadline is 16:00 UTC 15/04/2021.

- Step 2: Based on majority view provide the agreeable proposals

- Step 3: Collect the companies’ view on the new proposals and goto Step 2 until 04:00 UTC Friday 16/04/2021.

- Step 4: Providing final proposals for CB session. Note that in CB session there will not be technical discussion again. We try to directly agree the final proposals.

- Step 5: drafting the LS to RAN3 based on the potential agreements from the final proposals…

Intended outcome: Easily agreeable proposals and LS draft

Deadline: Friday 16/04/2021

R2-2104292 Summary of AI 8.13.2.2 CATT

R2-2103094 [Draft] Reply LS on RACH report for 2-step RACH CATT LS out Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core To:RAN3

R2-2103165 Discussion on signalling model of 2-step RACH report vivo discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2103421 Discussion on 2-step RACH reporting in SON OPPO discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2103551 Remaining Issues and New Aspects in 2-step NR UE Report Nokia, Nokia Shanghai Bell discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2103711 SON Enhancement for 2-step RA CMCC discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2103732 Discussion on 2 step RA related SON aspects Huawei, HiSilicon discussion Rel-17

R2-2103942 2-Step RA information for SON purposes Ericsson discussion NR\_ENDC\_SON\_MDT\_enh-Core

R2-2104055 SON Enhancements for 2SRA Samsung discussion NR\_ENDC\_SON\_MDT\_enh-Core

R2-2104057 Discussion on RA information for 2-step RA SHARP Corporation discussion NR\_ENDC\_SON\_MDT\_enh-Core

R2-2104193 Remaining issues on RA related enhancements ZTE Corporation, Sanechips discussion Rel-17

#### 8.13.2.3 Other WID related SON features

Including RAN3 input features, successful handover report, MRO for SN change failure, RACH optimization enhancements, UL-DL coverage mismatch, …

- All the documents in 8.13.2.3 will not be treated in this meeting.

- Encourage companies to provide joint contributions for the new topics (except NR-U related enhancements, successful handover report, MRO for SN change failure, RACH optimization enhancements, UL-DL coverage mismatch) to show common interest.

R2-2103066 NR-U Related Enhancements QUALCOMM Incorporated discussion Rel-17

R2-2103095 Solution for the UE RACH Report for SN CATT discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2103096 Further Consideration on PSCell MHI CATT discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2103099 On Successful HO Report CATT discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2103148 Consideration on successful handover report and UE history information in EN-DC OPPO discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2103298 Discussion on signalling aspects of successful handover report NEC discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2103387 MRO for Inter-RAT handover Lenovo, Motorola Mobility discussion Rel-17

R2-2103388 MRO for fast MCG link recovery Lenovo, Motorola Mobility discussion Rel-17

R2-2103552 Discussion on other SON aspects Nokia, Nokia Shanghai Bell discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2103553 MPE impact on MRO Nokia, Nokia Shanghai Bell discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2103712 Discussion on Successful Handover Report CMCC discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2103713 Further consideration on UL-DL coverage mismatch CMCC discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2103733 Discussion on other SON aspects Huawei, HiSilicon discussion Rel-17

R2-2103755 Discussion on enhancement of RLF report NTT DOCOMO, INC. discussion Rel-17 Late

R2-2103943 Other WID related SON features Ericsson discussion NR\_ENDC\_SON\_MDT\_enh-Core

R2-2104056 SON Enhancements for Successful HO Report Samsung discussion NR\_ENDC\_SON\_MDT\_enh-Core

R2-2104058 Other SON Enhancements Samsung discussion NR\_ENDC\_SON\_MDT\_enh-Core

R2-2104071 Successful HO report in DAPS SHARP Corporation discussion

R2-2104194 Further considerations on successful HO report ZTE Corporation, Sanechips discussion Rel-17

R2-2104195 Consideration on RAN3 concerned issues ZTE Corporation, Sanechips discussion Rel-17

### 8.13.3 MDT

#### 8.13.3.1 Immediate MDT enhancements

including M5/M6/M7 in all bearer type scenarios, immediate MDT for MR-DC

Including outcome of email discussion [Post113-e][853][NR17 SON/MDT] IMM MDT (Huawei)

R2-2104006 Report of [Post113-e][853][NR17 SON/MDT] IMM MDT Huawei report Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

* [AT113b-e][803][NR/R17 SON/MDT]  ] IMM MDT (Huawei)

- Step 1: Collect the companies’ view on the proposals in R2-2104006. Deadline is 16:00 UTC 15/04/2021.

- Step 2: Based on majority view provide the agreeable proposals

- Step 3: Collect the companies’ view on the new proposals and goto Step 2 until 04:00 UTC Friday 16/04/2021.

- Step 4: Providing final proposals for CB session. Note that in CB session there will not be technical discussion again. We try to directly agree the final proposals.

Intended outcome: Easily agreeable proposals and LS draft

Deadline: Friday 16/04/2021

R2-2104295 Summary of 8.13.3.1 Rel-17 Imm MDT Huawei

R2-2103064 On the accuracy of M5 and M7 measurements in split-bearer QUALCOMM Incorporated discussion Rel-17

R2-2103100 Further Consideration on Immediate MDT Enhancements CATT discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2103166 Support of immediate MDT in MR-DC vivo discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2103810 On Immediate MDT Enhancements Ericsson discussion

R2-2103985 D1 in Immediate MDT Nokia, Nokia Shanghai Bell discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2104007 Discussion on immediate MDT enhancements Huawei, HiSilicon discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2104180 Discussion on immediate MDT OPPO discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

#### 8.13.3.2 Logged MDT enhancements

Including outcome of email discussion [Post113-e][854][NR17 SON/MDT] Logged MDT (CMCC)

R2-2103708 Report of [Post113-e][854][NR17 SON MDT] Logged MDT CMCC report Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

* [AT113b-e][804][NR/R17 SON/MDT]  ] Logged MDT (CMCC)

- Step 1: Collect the companies’ view on the proposals in R2-2103708. Deadline is 16:00 UTC 15/04/2021.

- Step 2: Based on majority view provide the agreeable proposals

- Step 3: Collect the companies’ view on the new proposals and goto Step 2 until 04:00 UTC Friday 16/04/2021.

- Step 4: Providing final proposals for CB session. Note that in CB session there will not be technical discussion again. We try to directly agree the final proposals.

Intended outcome: Easily agreeable proposals and LS draft

Deadline: Friday 16/04/2021

R2-2104431 Summary for 8.13.3.2 Logged MDT enhancements CMCC

R2-2103063 Logged Measurement Enhancements QUALCOMM Incorporated discussion Rel-17

R2-2103097 MDT enhancements for On-demand SI CATT discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2103143 Enhancements for logged MDT OPPO discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2103501 Discussion on recording SI related information OPPO discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2103554 Logged MDT in EN-DC and other enhancements Nokia, Nokia Shanghai Bell discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2103697 MDT for slice unavailability CMCC discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2103811 On logged MDT related enhancements Ericsson discussion

R2-2103930 R17 Logged MDT issues (overwrite, IRAT/ MR-DC, logging non camping freqs, IDC and OSI) Samsung Telecommunications discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2104008 Discussion on logged MDT enhancements Huawei, HiSilicon discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2104196 Remaining issues on logging of on-demand SI request information ZTE Corporation, Sanechips discussion Rel-17

R2-2104197 On support MDT in NPN ZTE Corporation, Sanechips discussion Rel-17

### 8.13.4 L2 Measurements

R2-2103156 Discussion on introduction of the UE DL PDCP packet average delay measurement China Telecommunication discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2103824 On layer-2 measurements Ericsson discussion

R2-2104009 Discussion on L2M Huawei, HiSilicon discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2104430-449

430-431

Email discussions after the meeting: