**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

## 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

Including outcome of [Post116-e][887][SON/MDT] Running 38.331 for introducing R17 SON (Ericsson)

Including outcome of [Post116-e][889][SON/MDT] Running 38.331 for introducing R17 MDT (Huawei)

Including outcome of [Post116-e][879][SON/MDT] Running R17 38.314 (CMCC)

Including outcome of [Post116-e][897][SON/MDT] Running R17 37.320 (CMCC, Nokia)

R2-2200004 Running 38.331 for introducing R17 SON Ericsson CR Rel-17 38.331 16.7.0 2865 - B NR\_ENDC\_SON\_MDT\_enh-Core

=> Endorsed as the baseline for further running

R2-2200010 Running 38.331 for introducing R17 MDT Huawei, HiSilicon draftCR Rel-17 38.331 16.7.0 B NR\_ENDC\_SON\_MDT\_enh-Core

=> Endorsed as the baseline for further running

R2-2200056 37.320 Running CR for R17 MDT in NR and E-UTRAN CMCC draftCR Rel-17 37.320 16.7.0 B NR\_ENDC\_SON\_MDT\_enh-Core

=> Endorsed as the baseline for further running

R2-2200054 Report of [Post116-e][879][SON/MDT] Running R17 38.314 CMCC discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

Agreements

1 RAN2 agree on the following definition for excess packet delay for NR: It represents the ratio of packets in UL per DRB exceeding the configured delay threshold among the UL PDCP SDUs received. The delay for each packet is calculated from packet arrival at PDCP upper SAP until the UL grant to transmit the packet is available, which has included the delay the UE gets resources granted (from sending SR/RACH to get the first grant).

2 Excess packet delay for NR is measured per DRB.

3 The *delayThreshold* in TS 38.331 is re-designed with the granularity of 0.25ms, 0.5ms, 1ms. Other larger values FFS.

R2-2200053 Running CR for TS 38.314 CMCC draftCR Rel-17 38.314 16.4.0 NR\_ENDC\_SON\_MDT\_enh-Core

=> Endorsed in principle.

R2-2200097 LS on UP measurements for Successful Handover Report (R3-212935; contact: Ericsson) RAN3 LS in Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core To:RAN2

R2-2200098 Reply LS on UE context keeping in the source cell (R3-212944; contact: Ericsson) RAN3 LS in Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core To:RAN2

R2-2200099 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 NR\_ENDC\_SON\_MDT\_enh-Core To:SA5, RAN2

R2-2200103 LS on NR-U channel information and procedures (R3-216042; contact: Samsung) RAN3 LS in Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core To:RAN1, RAN2

* **[AT116bise][801][SON/MDT] Rely LS on NR-U (Samsung)**

Draft reply LS for R2-2200103. R2-2200664  can be used as baseline.

Intended outcome: LS ready for being approved.

Deadline: 22:22 UTC, Monday Week2

R2-2200105 Reply LS on scenarios need to be supported for MRO in SCG Failure Report (R3-216159; contact: Samsung) RAN3 LS in Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core To:RAN2

R2-2200156 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 NR\_ENDC\_SON\_MDT\_enh-Core To:RAN3 Cc:RAN2

R2-2200157 Reply LS on Report Amount for M4, M5, M6, M7 measurements (S5-214523; contact: Nokia) SA5 LS in Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core To:RAN3 Cc:RAN2

R2-2200158 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 e\_5GMDT To:RAN3 Cc:RAN2

R2-2200163 Reply LS on the Beam measurement reports for the MDT measurements (S5-216628; contact: Ericsson) SA5 LS in Rel-17 e\_5GMDT To:RAN3 Cc:RAN2

R2-2200664 [Draft] Reply LS on NR-U channel information and procedures Samsung LS out Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core To:RAN3 Cc:RAN1

R2-2201611 LS Reply on user plane masurements for successful handover report Ericsson discussion NR\_ENDC\_SON\_MDT\_enh-Core

### 8.13.2 SON

#### 8.13.2.1 Handover related SON aspects

R2-2200005 Report of [Post116-e][887.5][SONMDT] Leftover issues on SON (Ericsson) Ericsson discussion

Agreements

1 In case the UE experiences an RLF in a cell after being configured with CHO configuration in that cell (i.e., RLF in source while having CHO config), the UE shall log in the RLF-Report, the already agreed timeSinceCHOReconfig which represents in this case the time elapsed between the RLF in that cell and the latest received CHO configuration while connected to that cell.

2 The following granularities are adopted for the timers timeConnSourceDAPSFailure, timeSinceCHOReconfig, timeBetweenEvents:

a. timeConnSourceDAPSFailure: milliseconds

b. timeSinceCHOReconfig: hundreds of ms

c. timeBetweenEvents: milliseconds

3 Related to how to set the timeSinceFailure: keep the specification as-is (time since last failure).

4 For the inclusion of RA-InformationCommon in the SHR: RA-InformationCommon is included in SHR when T304 is above the threshold.

Observation 1 It is not possible for the network to identify that the SHR and RLF report are generated for the same HO.

5 The UP interruption time at HO is evaluated at PDCP layer without considering duplicates.

6 The UE is responsible for performing the user plane interruption time measurements at the HO i.e., inline with the agreement from RAN2#115 meeting.

Proposal 9 RAN2 to discuss in which HO scenarios the UP interruption measurements should be considered:

a. Only at DAPS HO (6/12)

b. For all HO types (ordinary HO, DAPS, CHO) (5/12)

Proposal 10 The UE shall generate a SHR due to RLF in the source cell during a DAPS HO, only if it is configured to do so in the SHR configuration (i.e. in the successHO-Config)

a. If the above is not agreeable, discuss whether it is acceptable that the T310 threshold is used to determine whether the UE shall log the rlfInSource-DAPS-r17. Consider however, there might be other reasons for which the source RLF is declared beside the T310 (e.g., BFR Failure, reaching maximum number of random accesss attempts etc.).

Proposal 11 RAN2 to discuss whether there is any issue for the following topics related to SHR, and whether those should be addressed in the next revision of running CR:

a. Discarding of the SHR if HO fails

b. Which message carries the SHR configuration, e.g. HO command, or other RRC message

c. Alignment of the SHR content with the RLF-Report in the ASN.1, e.g. inclusion of the CHO configuration in the SHR, inclusion of the CHO candidate cell list in the SHR.

Proposal 12 For the 2-step RA, the UE reports the payload size without considering the padding.

Proposal 13 For the 2-step RA, the UE reports the payload size per RA procedure.

Proposal 14 The payload size is reported as ENUMERATED {noPayload, sizeRange1, sizeRange2, sizeRange3, sizeRange4, sizeRange5, spare1, spare0} wherein each RANGE is known, e.g. hardcoded in the specification. FFS the values for each range.

Proposal 15 The UE includes intendedSIBs, ssbsForSI-Acquisition in the RA report also for a successfully completed on-demand SI procedure.

Proposal 16 The UE includes the PCell ID in the RA-Report, if the RA procedure is performed in an SCell of the MCG.

Proposal 17 The UE includes the PSCell ID in the RA-Report, if the RA procedure is performed in an SCell of the SCG.

Proposal 18 RAN2 to discuss whether there is any issue for the following topics related to the RA report, and whether those should be addressed in the next revision of running CR:

a. Whether it is mandatory for the UE to log SN RACH report

b. Whether the TS 36.331 modifications are introduced to handle the scenario of LTE MN fetching the list of NR RA reports.

c. Consider to capture other reasons for changing the procedure from 2-step to 4-step, e.g. due to LBT, due to fallback RAR reception

d. Consider to capture fallback from 4-step CFRA to 4-step CBRA

Proposal 19 The RA Information associated to a SCG failure (when failureType is set to randomAccessProblem or beamFailureRecoveryFailure-r16) are included in the SCGFailureInformation.

Proposal 20 The UE sets the failureType to randomAccessProblem if the UE initiates transmission of the SCGFailureInformationNR message to indicate the reason for declaring failure to be the random access problem from the SCG MAC even if T304 is running. Otherwise, if no random access problem has been detected at T304 expiry, the UE sets the failureType to synchReconfigFailureSCG.

Proposal 21 The UE includes a 1 bit flag in the SCGFailureInformation to indicate that the T304 was running when the UE declared the SCG failure due to random access problem indication in the SCG MAC.

Proposal 22 RAN2 to discuss the need to introduce an explicit capability indicator that indicates that the UE is capable of storing the PSCell related MHI.

Proposal 23 RAN2 to discuss the total number of PSCell (across all PCells) related information that should be stored by the UE in the MHI:

a. 16 PSCells

b. 32 PSCells

c. 64 PSCells

Proposal 24 RAN2 to discuss whether there is any issue for the following topics related to MHI, and whether those should be addressed in the next revision of running CR:

a. How to deal with the PSCell MHI if the SN is released

b. How to deal with the PSCell MHI if the SN is added

FFS: RAN2 to consider one or more of the following solutions to address the issue in Observation 1:

a. Indicator in the RLF-Report (SHR) indicating that the SHR (RLF-Report) has been already sent to the network for this HO

b. Indicator in the RLF-Report (SHR) indicating that there is an SHR (RLF-Report) associated to the same HO

c. UE-ID and C-RNTI to be included in the SHR, RLF-Report

d. Timestamps in the SHR and RLF-Report to link them in time

e. RLF-Report should be merged with the SHR if the SHR has not been sent yet at the moment of RLF-Report generation, or the SHR should be merged in the RLF-Report.

f. If RLF occurs within a certain time window after the generation of the SHR, the SHR should be discarded if not yet transmitted

R2-2201680 Summary of AI 8.13.2 on SON open issues (Ericsson)

Proposal 4 RAN2 to discuss whether the time elapsed between the DAPS HO initialization and the RLF in the source cell after fallback is represented by the timeConnFailure (as in the current running CR) or via the timeConnSourceDAPSFailure.

Proposal 5 RAN2 to discuss if there is the need to do not record the timeConnFailure for the first CHO failure, and just record it for the second.

Proposal 6 RAN2 to discuss the need to include the timeUntilReconnection for the latter failure in the RLF report for the consecutive CHO failure cases.

Proposal 7 RAN2 to discuss if it is necessary to remove the condFirstEventFulfilled and condSecondEventFulfilled from Running CR.

Proposal 8 RAN2 to discuss if it is needed to remove the CHO candidate cells IDs from the RLF Report in the running CR.

Proposal 9 RAN2 to discuss the need of the following additional information to be included in the RLF-Report for the case of CHO:

a. Whether the entry condition of the second condition is met or not when the first condition is considered as ‘fulfilled’

b. Whether the second condition is also satisfied during TTT but the status of the first event has been changed to ‘not satisfied’

c. The measurement result of the corresponding serving cell and candidate cell associated with the second event when the first condition is considered as ‘fulfilled’

d. The measurement result of the corresponding serving cell and candidate cell when the first condition is considered as ‘not fulfilled’

e. For the case that two CondEvent A3 or two CondEvent A5 are configured, then the reported first satisfied event or condition includes the corresponding measurement quantity, e.g., RSRP or RSRQ

Proposal 10 RAN2 to capture in TS37.320 that for CHO, the latest radio measurement results of the candidate target cells are included in RLF Report.

Proposal 11 RAN2 to discuss the need to include in the RLF-Report the CHO configuration of the cell where RLF is detected

Proposal 12 RAN2 to discuss if the UE should keep the previous RLF-Report if a failure occurs in the CHO recovery cell.

Proposal 13 RAN2 to discuss the need to refine the information in the RLF-report for the scenario of DAPS fallback, e.g.:

a. Redefine the reestablishmentCellId to support the fallback cell information

b. Introduce a new IE, e.g., fallbackIndicator to indicate the successful fallback information

Proposal 14 Related to capabilities, RAN2 to discuss the need of the following:

a. Release indicator for each report version, representing that there exists a SON related report needed to be exchanged

b. Capability bits for DAPS/CHO/PSCell change failure reporting

Proposal 15 RAN2 to discuss whether there is the need clarify the implications of the following agreement from RAN2#114-e, i.e. “Successful CHO recovery while initial failure is part of the RLF-Report”

a. SHR may still be triggered for this successful CHO recovery, but the information of the SHR (e.g. SHR-cause) is not logged in VarSuccessHO-Report but in the RLF- report together with the RLF information for initial failure

b. SHR is not triggered for this successful CHO recovery. The information associated to the first failure and second CHO attempt are included in the RLF-Report (this is the running CR implementation)

Proposal 16 RAN2 to discuss the inclusion of the ‘t312-expiry’ as a new rlf-cause in the RLF-Report.

Proposal 17 RAN2 to discuss the inclusion of the frequency whose associated T312 expired.

Proposal 26 RAN2 to discuss if PLMN checking is required before sending the availability indicator for the SHR, as in RLF Report.

Proposal 27 RAN2 discusses if inter-RAT SHR is supported in this release. If so, RAN2 studies the encoding format for inter-RAT SHR.

Proposal 28 RAN2 to discuss the need of including the following information in the SHR:

a. T310 value in source cell when T310 stops

b. T312 value in source cell when T312 stops

c. T304 value in target cell when T304 stops

d. UE reports the time between RLF@source and successful RACH with the target in DAPS handover in SHR

Proposal 29 RAN2 to discuss the need to include BFR related information in the Successful Handover Report, when none of beams in candidateBeamRSList could meet the measurement requirement, e.g.

c. Measurements of reference signals that within the configured list candidateBeamRSList

Proposal 30 RAN2 to discuss whether the UE needs to indicate in the SHR whether the UE was configured with split SRB when the HO occurred.

Proposal 31 Given that the T312 is associated to the measurement identity, RAN2 to discuss whether to clarify in the specification in which cases the SHR is generated, e.g. one of the following:

a. The UE shall log the SHR always when a T312 is running for any measurement identity configured to the UE. In this case, the UE shall indicate which frequency related measurements had triggered the timer T312.

b. The SHR shall be generated only if the T312 associated to the measurement identity associated to the target cell is running

Proposal 32 RAN2 to discuss whether the T312 threshold for the SHR generation should be configured per measurement identity or if that can be common for all measurement identities configured to the UE.

Proposal 41 RAN2 discuss whether a capability bit is needed for the RA report enhancements in Rel 17 (i.e., enhancement on 2-step RA information and SN related RA information).

Proposal 42 In case of SN related capabilities, RAN2 to discuss EN-DC scenarios: i.e., whether capability bit for NR RA report is needed in LTE specification

Proposal 43 RAN2 to confirm that the UE includes the RA resource related parameters (frequency start, FDM, and SubcarrierSpacing of the msgA RA resource) only under following scenarios:

a. RA procedure involves only 2 step RA

b. When 2 step RA to 4 step RA switching occurs, only those parameters that are different in 4 step RA resources compared to the 2 step RA resources.

Proposal 44 RAN2 to discuss which of the following parameters does the UE include in the RA report:

a. overall payload without padding i.e., the amount of UL data at the UE at the time of initiating the 2 step RA procedure.

b. payload without padding i.e., the amount of UL data sent over the PUSCH resources associated to the 2 step RA procedure.

Proposal 45 RAN2 to discuss which of the following method is used to encode the outcome of Proposal 44:

a. A 8-bit bit string in RA report, where the value of the 8-bit bitstring refers to the index of the BSR table in TS 38.321

b. Exactly following the definition of ra-MsgA-SizeGroupA

c. Simplified definition of ra-MsgA-SizeGroupA by removing some size ranges

Proposal 46 RAN2 to discuss the inclusion of one or more of the following PUSCH resource parameters:

a. msgA-MCS (4 bits)

b. nrofPRBs-PerMsgA-PO (5 bits)

c. msgA-PUSCH-TimeDomainAllocation (4 bits)

d. frequencyStartMsgA-PUSCH (9 bits)

e. nrofMsgA-PO-FDM (2 bits)

Proposal 47 RAN2 to discuss whether it is necessary or not to clarify when the UE sets the contentionDetected flag to TRUE for 2 step RA procedure, e.g.

a. if msgB-ResponseWindow expires (and/or UE has received successRAR but does not include its contention resolution identity)

b. if fallbackRAR is received for this attempt and contention resolution timer expires.

Proposal 48 RAN2 discuss the necessity of a new capability bit for on-demand SI request enhancement of the RA reporting.

Proposal 49 The UE includes the SpCell identifier in the RA report in case the RA procedure was performed in an SCell of the MCG or SCG.

Proposal 50 RAN2 confirms that UE reports all available RA-information (LTE RA information as well as SgNB RA-report if available) to LTE node regardless if it is in DC or not.

Proposal 51 When reporting stored SgNB RA-report, the cell identity of stored SgNB RA-report is encoded in LTE format and put outside the SgNB RA-report container.

Proposal 52 RAN2 to decide whether to discuss the following new topic associated to RA report:

a. The UE indicates whether the UE could not transmit a PRACH due to the power limitation arising from the power allocation related to MR-DC (e.g., EN-DC, NE-DC, or NR-DC). The UE indicates whether the UE had to reduce its PRACH transmission power due to the power limitation arising from the power allocation related to MR-DC

Proposal 58 RAN2 to discuss the inclusion of the following information in the MHI

a. the time spent with no PSCell.

b. The time UE stayed in each PSCell and UE stayed without PSCell should all be recorded in the PCell entry in chronological order

Proposal 59 RAN2 to discuss how to handle addition/release of PSCells, e.g.

a. The UE should create a new PCell entry if upon PSCell transition while being on same PCell and the maximum PSCell number of the PCell entry has reached.

b. When the UE reaches the maximum number of PSCell, if it gets a new PSCell, the UE removes the oldest stored PSCell entry and stores the newly configured PSCell entry

Proposal 60 RAN2 to discuss if the PSCell MHI should extended to LTE as well.

Proposal 61 RAN2 to discuss whether to clarify the handling of the time spent in the MHI in case of DAPS, e.g. the time spent in previous PCell is captured as the time spent from entering the source cell until receiving the source DAPS release message.

Proposal 62 RAN2 to discuss how to reply to the RAN3 LS on NR-U procedures (R3-216042), e.g.:

a. The NR-U channel can be represented by channel ID, centre frequency of the carrier and its configured bandwidth

b. According to TS 38.300 Section 5.6.1, the NG-RAN node may apply LBT in order to transmit packets to UEs over the air interface. It is not specified in 3GPP specifications whether the NG-RAN node can sense the NR-U channel even when no data are available for transmission

c. The ED threshold configuration is configured as part of the NR-U channel access configuration which in turn is included in the serving cell configuration, according to TS 38.331. The energy detection threshold can be configured as an offset to the default maximum energy detection threshold value, or as an absolute configurable maximum energy detection threshold value

d. The ED threshold is configured to the UE per serving cell

Proposal 63 RAN2 to discuss whether specific RAN2 enhancements related to NR-U should be addressed.

Proposal 64 RAN2 to discuss which of the following enhancements should be pursued related to NR-U in Rel.17:

a. Introduce new specific SON container to collect LBT statistics

b. Enhancements to the existing RLF/CEF/RA report.

c. Enhancements to the existing L2 measurements

Proposal 65 RAN2 to discuss whether to address enhancements to the data collection for the MCG recovery optimization in Rel 17.

Proposal 66 In case RAN2 decides to pursue such enhancements, RAN2 to discuss the benefits of the following proposals:

a. Fast MCG link recovery failure indication in the RLF report

b. Not flushing the RLF report upon successful MCG reconcery procedure

c. Including the value of T316 timer upon successful MCG recovery

d. Including location information in MCGFailure Report

Proposal 67 For new UE capabilities, it is proposed RAN2 to discuss whether to have FDD/TDD differentiation and FR1/FR2 differentiation.

R2-2200392 Further Discussion on Handover Related SON Aspects CATT discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2200560 Further consideration of SON of HO related aspects OPPO discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2200561 Further consideration on successful handover report OPPO discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2200575 Remaining issues on SHR NEC discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2200668 SON Enhancements for CHO Optimization Samsung discussion NR\_ENDC\_SON\_MDT\_enh-Core

R2-2200669 SON Enhancements for Successful HO Report Samsung discussion NR\_ENDC\_SON\_MDT\_enh-Core

R2-2200752 SON Enhancements for CHO Lenovo, Motorola Mobility discussion Rel-17

R2-2200753 SON Enhancements for SHR Lenovo, Motorola Mobility discussion Rel-17

R2-2200901 On measurements of CHO candidate cells CMCC, Ericsson, Huawei, Nokia, ZTE discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2200902 Remaining issues on SON Enhancement for CHO CMCC discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2200903 Further Discussion on Successful Handover Report CMCC discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2200966 Discussion on handover related SON aspects Huawei, HiSilicon discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2201035 HO related SON changes Qualcomm Incorporated discussion Rel-17

R2-2201036 Open Issues in Successful Handover Report Qualcomm Incorporated discussion Rel-17

R2-2201211 Remaining CHO related issues on SON LG Electronics discussion NR\_ENDC\_SON\_MDT\_enh-Core

R2-2201212 Remaining SHR related issues on SON LG Electronics discussion NR\_ENDC\_SON\_MDT\_enh-Core

R2-2201229 Successful HO report in CHO recovery case SHARP Corporation discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2201230 Discussion on successful HO report in DC case SHARP Corporation discussion NR\_ENDC\_SON\_MDT\_enh-Core

R2-2201326 Further consideration on SHR enhancements ZTE Corporation, Sanechips discussion Rel-17

R2-2201423 Discussion on SHR enhancements vivo discussion Rel-17

R2-2201612 Handover-related SON aspects Ericsson discussion NR\_ENDC\_SON\_MDT\_enh-Core

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

Including outcome of [Post116-e][887.5][SON/MDT] Leftover issues on SON (Ericsson )

R2-2200393 The left issues on 2-step RA Report CATT discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2200670 2-step Random Access Optimization Samsung discussion NR\_ENDC\_SON\_MDT\_enh-Core

R2-2200900 Remaining issues for 2-step RA CMCC,ZTE discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2200967 Discussion on 2 step RA related SON aspects Huawei, HiSilicon discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2201327 Remaining issues on RA-report enhancements ZTE Corporation, Sanechips discussion Rel-17

R2-2201604 2-Step RA information for SON purposes Ericsson discussion NR\_ENDC\_SON\_MDT\_enh-Core

#### 8.13.2.3 Other WID related SON features

R2-2200394 Specification Impact of SgNB RACH Report on TS38.331 and TS36.331 CATT discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2200395 Open Issues of PSCell MHI Enhancement CATT discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2200679 SON Enhancements: Others Samsung discussion NR\_ENDC\_SON\_MDT\_enh-Core

R2-2200968 Discussion on UE capabilities for R17 SON and MDT Huawei, HiSilicon discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2201037 Open Issues in Other SON Topics Qualcomm Incorporated discussion Rel-17

R2-2201043 Mobility History Information storing Nokia, Nokia Shanghai Bell discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2201044 Discussion on other SON features Nokia, Nokia Shanghai Bell discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2201045 Reporting Enhancements for SON in unlicensed Nokia, Nokia Shanghai Bell discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2201213 Remaining issues on SCG related MRO LG Electronics discussion NR\_ENDC\_SON\_MDT\_enh-Core

R2-2201328 Consideration on SN MHI enhancements ZTE Corporation, Sanechips discussion Rel-17

R2-2201329 Clarification on failureType of SCG failure information ZTE Corporation, Sanechips, CMCC discussion Rel-17

R2-2201605 On Other WID related SON features Ericsson discussion NR\_ENDC\_SON\_MDT\_enh-Core

### 8.13.3 MDT

R2-2201658 Summary on MDT aspects ZTE

**Signalling-based logged MDT protection**

Agreements:

1 Signalling based MDT protection is applicable for scenarios below: intra-NR Handover scenarios.

Proposal 2: Explicit indication is needed to indicate T330 status.

Proposal 2-a T330 indication is used to indicate whether T330 is running or not, which is explicitly included for the following case:

* + - * UE has signalling MDT configuration stored (T330 is running)
      * UE has signalling MDT results available yet T330 is expired

How to formulate T330 indication can be discussed during running CR review.

* **[AT116bise][877][SON/MDT] MDT aspects (ZTE)**

Based on proposals not concluded yet in R2-2201658 and R2-2201691

Intended outcome: Report with easy agreements and reasonable WF.

Deadline: 22:22 UTC, Monday Week2

**EMR**

**Proposal 3: RAN2 to discuss which of the following options is used to log EMR in logged MDT if UE is configured to do so :**

* **Option 1: UE logs EMR based on logged MDT behavior (i.e., similar to neighboring cell measurements logging )**
* **Option 2: UE logs EMR based on either early measurement or logged MDT principles which is configurable by earlyMeasIndication and areaConfig.**

**CEF report**

**Proposal 4: Only one PLMN is allowed in multiple CEF report and UE clears stored connection establishment/resume failure information upon RPLMN change.**

**Proposal 5: RAN2 to further discuss how to store multiple CEF report based on option shown below:**

* **Opt1: UE logs multiple CEF in the same cell**
* **Opt2:UE logs one CEF report entry in multiple CEF report list, for the failures happening consecutively in the same cell.**
* **Opt3: UE logs multiple CEF in the same or different cell and numberOfConnFail can be set across cells and dummy across different CEF entries**

**Proposal 6: RAN2 to discuss whether to include detailed RACH report is included in CEF report if multiple CEF is stored.**

**Proposal 7: RAN2 to discuss how to set availability for multiple CEF reports:**

* **Option 1: Reuse existing availability bit and request bit is used for multiple CEF reports**
* **Option 2: Separate availability bit is used to indicate presence multiple CEF reports**

**Proposal 8: RAN2 to further discuss which options is selected for multiple CEF report capability signalling:**

* **Opt 1: New capability bit is introduced to indicate if UE supports multiple CEF**
* **Opt 2: Multiple CEF is optional supported without signalling**

**On-demand SI**

**Proposal 9: RAN2 to discuss whether to include the successful SI request procedure related information in RA report by removing the conditions that preclude logging of successful SI request related information.**

**D1 configuration clarification**

**Proposal 10: RAN2 to discuss whether multiple D1 configuration can be configured per CG.**

P10-a is discussed only when one D1configuration per CG is agreed:

**Proposal 10-a: RAN2 to decide which option shown below is selected to guarantee only one D1 configuration is configured per CG:**

* **Option1: Only the node where RLC is terminated can configure D1**
* **Option 2: Coordination is required to guarantee single DT configuration is used per CG**

**Stage 2 CR clarification**

**Proposal 11: M5 ~ M7 configuration triggers can apply to MR-DC.**

R2-2201691 Summary on issues for MDT RRC CR Huawei

**Proposal 1: It is proposed to decide one solution from the following solutions:**

**Implicit solution:**

* The UE can report the flag of T330 status (whether it is running or not)
* If the UE has sig-based logged MDT config or if UE has sig-based logged MDT results, and T330 is running, the flag is set to running, otherwise set to expiry

**Explicit solution:**

* The UE can report the flag of available sig-based logged MDT, e.g. ENUMERATE {true}
* If the UE has sig-based logged MDT config or if UE has sig-based logged MDT results, the flag is set, otherwise absence

**Proposal 2: It is proposed to confirm the following understandings:**

* For multiple CEF, one CEF list can only store the reports from the same PLMN
* Upon PLMN changes, all the entries in CEF list should be removed

**Proposal 3: For defining earlyMeasIndication-r17, it is proposed to decide on one option from the following options:**

Option 1: if earlyMeasIndication-r17 is included, area information in logged MDT config is independent of area information in EMR config

Option 2: if earlyMeasIndication-r17 is included, the area information in logged MDT config should include area information in EMR config, e.g. areaConfiguration-r16 includes freq #A, #B, #C, #D

**Proposal 4: For how the UE sets the EMR results in logged MDT results, it is proposed to decide on one option from the following options:**

Option A: no impacts to logged MDT results, and the UE just replaces logged MDT results with EMR results

Option B: introduce new fields of EMR results into logged MDT results

#### 8.13.3.1 Immediate MDT enhancements

R2-2200396 The Corrections on Immediate MDT Enhancements CATT discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2200890 On Immediate MDT Enhancements Ericsson discussion NR\_ENDC\_SON\_MDT\_enh-Core

R2-2200969 Discussion on immediate MDT enhancements Huawei, HiSilicon discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2201330 Consideration on miscellaneous on IMM MDT ZTE Corporation, Sanechips discussion Rel-17

R2-2201658 Summary of AI 8.13.3 MDT aspects ZTE Corporation, Sanechips discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

#### 8.13.3.2 Logged MDT enhancements

R2-2200397 Discussion on Logged MDT Enhancement CATT discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2200648 Discussion on multiple CEF reports Samsung Electronics Co., Ltd discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2200680 SI Request Optimization Samsung discussion NR\_ENDC\_SON\_MDT\_enh-Core

R2-2200889 On logged MDT related enhancements Ericsson discussion NR\_ENDC\_SON\_MDT\_enh-Core

R2-2200970 Discussion on logged MDT enhancements Huawei, HiSilicon discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2201038 Logged measurement Enhancements Qualcomm Incorporated discussion Rel-17

R2-2201042 Remaining Stage 2 open issues Nokia, Nokia Shanghai Bell, CMCC discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

### 8.13.4 L2 Measurements

R2-2200888 On layer-2 measurements Ericsson discussion NR\_ENDC\_SON\_MDT\_enh-Core

R2-2200971 Discussion on L2M Huawei, HiSilicon discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

* **[AT116bis-e][833][SON/MDT] SON related open issue list (Ericsson)**

- Figure out the open issue list on running stage-3 CRs for SON. Open Issues should be defined for aspects that need to be**closed, important to make already agreed functionality work in a reasonable way**. Not yet agreed optimizations that may not be needed shall not be listed as Open Issues List

- Intended outcome: report with agreed open issues list

Deadline: 23:24 UTC, Friday, January 28th

* **[AT116bis-e][844][SON/MDT] MDT related open issue list (Huawei)**

- Figure out the open issue list on running stage-3 CRs for MDT. Open Issues should be defined for aspects that need to be**closed, important to make already agreed functionality work in a reasonable way**. Not yet agreed optimizations that may not be needed shall not be listed as Open Issues List

- Intended outcome: report with agreed open issues list

Deadline: 23:24 UTC, Friday, January 28th

* **[AT116bis-e][855][SON/MDT] Stage-2 Running CR related open issue list (Nokia)**

- Figure out the open issue list on running stage 2 CR. Open Issues should be defined for aspects that need to be**closed, important to make already agreed functionality work in a reasonable way**. Not yet agreed optimizations that may not be needed shall not be listed as Open Issues List

- Intended outcome: report with agreed open issues list

Deadline: 23:24 UTC, Friday, January 28th