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| 10. SON/MDT Support for NR WI (RAN3-led)WID [NR\_SON\_MDT]: [RP-191594](http://www.3gpp.org/ftp/tsg_ran/TSG_RAN/TSGR_84/Docs/RP-191594.zip) (target: RAN #88-e) [TU: 1 (1)]Capture the MDT related procedures in split RAN architecture into TS38.401.1. Add Management Based MDT PLMN List to the F1-UE CONTEXT SETUP REQUEST message.2. Transmit measurement configuration M2, M5, M6, M7 (DL) to DU from CU-CP.1. Add Management Based MDT PLMN List to the E1-BEARER CONTEXT SETUP REQUEST message.2. Support to transmit measurement configuration M4, M6 and M7(UL) to the CU-UP.1. Add Management Based MDT PLMN List to the Xn-HANDOVER REQUEST message and RETRIEVE UE CONTEXT RESPONSE message.2. Trace Activationa. Add MDT Configuration IE into Trace Activation IE. The Trace Activation IE is already defined in the HANDOVER REQUEST message and RETRIEVE UE CONTEXT RESPONSE message.b. Support M1, M2, M4, M5, M6, M7, M8, M9 1. MDT configuration includes a sequence structure: NR-configuration and E-UTRA configuration, both are optional.2. Add M1, M2, M4, M5, M6, M7, M8, M9 to MDT configuration.3. Remove Management based MDT Allowed IE from the NGAP BLCR (added in last meeting as FFS) |
| 10.1. General*Time plan, skeletons, BLs**BL CRs endorsed; all proposals should be in the form of TPs toward the appropriate BL CR(s)*Add the missing Registration Request IE in tabular (9.2.1.X1) at next update for SON E1 BLCR |
| [R3-203014](docs%5CR3-203014.zip) | BLCR to 38.420: Addition of MDT feature (CMCC) | CR0018r2, TS 38.420 v15.2.0, Rel-16, Cat. B |
| [R3-203015](docs%5CR3-203015.zip) | BLCR to 38.420: Addition of SON feature (CMCC) | CR0019r2, TS 38.420 v15.2.0, Rel-16, Cat. B |
| [R3-203016](docs%5CR3-203016.zip) | BLCR to 38.470: Addition of SON feature (CMCC) | CR0064r2, TS 38.470 v16.1.0, Rel-16, Cat. B |
| [R3-203017](docs%5CR3-203017.zip) | BLCR to 38.460: Addition of SON feature (CMCC) | CR0031r2, TS 38.460 v16.0.0, Rel-16, Cat. B |
| [R3-203021](docs%5CR3-203021.zip) | MDT support for EN-DC (Huawei) | CR1747r3, TS 36.413 v16.1.0, Rel-16, Cat. B |
| [R3-203023](docs%5CR3-203023.zip) | Addition of RACH Optimization Feature (CMCC, Huawei) | CR0116r3, TS 38.401 v16.1.0, Rel-16, Cat. B |
| [R3-203025](docs%5CR3-203025.zip) | Addition of SON features (Huawei) | CR1710r9, TS 36.413 v16.1.0, Rel-16, Cat. B |
| [R3-203026](docs%5CR3-203026.zip) | Addition of MDT feature (Huawei) | CR0280r6, TS 38.413 v16.1.0, Rel-16, Cat. B |
| [R3-203027](docs%5CR3-203027.zip) | Addition of SON features (Ericsson) | CR0142r10, TS 38.463 v16.1.1, Rel-16, Cat. B |
| [R3-203028](docs%5CR3-203028.zip) | Addition of MDT features (ZTE) | CR0477r4, TS 38.463 v16.1.1, Rel-16, Cat. B |
| [R3-203029](docs%5CR3-203029.zip) | Addition of MDT features (Samsung) | CR0492r5, TS 38.473 v16.1.0, Rel-16, Cat. B |
| [R3-203085](docs%5CR3-203085.zip) | Addition of SON feature (Huawei) | draftCR |
| [R3-203086](docs%5CR3-203086.zip) | Addition of SON feature (CATT) | CR1373r11, TS 36.423 v16.1.0, Rel-16, Cat. B |
| [R3-203087](docs%5CR3-203087.zip) | Addition of SON features (CMCC, Huawei) | draftCR |
| [R3-203088](docs%5CR3-203088.zip) | Addition of SON features (Huawei) | CR0237r9, TS 38.413 v16.1.0, Rel-16, Cat. B |
| [R3-203089](docs%5CR3-203089.zip) | Addition of SON features (Samsung) | CR0221r11, TS 38.423 v16.1.0, Rel-16, Cat. B |
| [R3-203090](docs%5CR3-203090.zip) | Addition of SON features (Huawei) | CR0441r11, TS 38.473 v16.1.0, Rel-16, Cat. B |
| [R3-203091](docs%5CR3-203091.zip) | Addition of MDT features (Samsung) | CR0099r6, TS 38.401 v16.1.0, Rel-16, Cat. B |
| [R3-203092](docs%5CR3-203092.zip) | MDT Configuration support for XnAP (Ericsson) | CR0291r9, TS 38.423 v16.1.0, Rel-16, Cat. B |
| [R3-203149](docs%5CR3-203149.zip) | MDT support for EN-DC (Huawei, SAMSUNG) | CR1440r5, TS 36.423 v16.1.0, Rel-16, Cat. B |
| [R3-203899](docs%5CR3-203899.zip) | Updated work plan for SON and MDT WI (CMCC) | Work Plan |
| **CB: # 1001\_Email\_SONMDT\_BLs**-  **endorse work plan****- Endorse all BL CRs****- check details, revise if needed****(CMCC)****Summary of offline discussion****Endorsed BL CRs** |
| 10.2. Signaling Support for SON*In cooperation with RAN2* |
| 10.2.1. Mobility Robustness Optimization**QUOTA: 5 (was 7)***Both intra- and inter-system*MRO mechanism shall support Rel-15 UEsIntroduce failure indication message and HO report in Xn (message names can be revised offline)mobility information of source gNB should be included in HANDOVER REQUEST messageUL and DL RAN configuration transfer mechanism is used to exchange MRO information between LTE and NR (i.e. in NG and S1)*Unnecessary HO to another system and ping-pong to be discussed in the upcoming meetings**UE RLF report from CU to DU to be continued…* |
| 10.2.1.1. Intra-System and Inter-System Connection FailureIntra-system:- In failure indication over Ng, include the RLF report- HO report procedure over NG and S1 shall be supported- For the connection failure due to intra-system mobility, add the description about how to use the failure indication message and HO report in case of RRC re-establishment and RLF report- For the connection failure due to intra-system mobility, add the description about retrieval of information needed for problem analysis. The description of LTE is the baselineSend LS to RAN2: Information needed in RLF report from UE as follows -The CGI of the cell that served the UE at the last handover initialization in NR UE RLF Report is either NR CGI or E-UTRA CGI. E-UTRA CGI should be included  -The CGI of the cell that served the UE at the last handover initialization in LTE UE RLF Report is either NR CGI or E-UTRA CGI. NR CGI should be included -The CGI of the last cell that served the UE (in case of RLF) or the target of the handover (in case of handover failure) in NR UE RLF Report is either NR CGI or E-UTRA CGI. E-UTRA CGI should be included -The CGI of the last cell that served the UE (in case of RLF) or the target of the handover (in case of handover failure) in LTE UE RLF Report is either NR CGI or E-UTRA CGI. NR CGI should be included*RAN3 BLCR related:*LTE RLF Report Container refers to RLF-Report-r9 IE in TS36.331 in both XnAP and NGAPNR RLF Report Container refers to nr-RLF-Report-r16 IE in TS38.331 in both XnAP and NGAPDefine the presence of Target cell CGI IE in Handover Report message as MandatoryIntroduce Failure indication containing the LTE RLF report as a choice for Inter-system SON Information Report*LS to RAN2: Information needed in RLF report from UE:*CGI of successful re-connected NR cell or E-UTRA cell should be included in UE RLF ReportInclude the TAC of re-connection attempt E-UTRA cellInclude Time interval between HOF/RLF and successful RRC re-connection in UE RLF ReportfailedPCellId-EUTRA should be PCell in which RLF is detected or the source PCell of the failed handover*Previous summary of offline disc.:* [*R3-202632*](docs%5CR3-202632.zip)*, noted* |
| [R3-203231](docs%5CR3-203231.zip) | (TP for SON BL CR for TS 38.300): Intra-System and Inter-System Connection Failure (Huawei) | other |
| [R3-203232](docs%5CR3-203232.zip) | (TP for SON BL CR for TS 36.300): Intra-System and Inter-System Connection Failure (Huawei) | other |
| [R3-203233](docs%5CR3-203233.zip) | (TP for SON BL CR for TS 36.413): Intra-System and Inter-System Connection Failure (Huawei) | other |
| [R3-203619](docs%5CR3-203619.zip) | (TP for SON BL CR for TS 38.423) Intra-System and Inter-System Connection Failure for MRO (Samsung, ZTE, CMCC) | other |
| [R3-203620](docs%5CR3-203620.zip) | (TP for SON BL CR for TS 38.413) Intra-System and Inter-System Connection Failure for MRO (Samsung, ZTE, CMCC) | other |
| [R3-203675](docs%5CR3-203675.zip) | (TP for SON BL CR for TS 38.423) Alignment of CGI coding for various SON features (CATT) | other |
| [R3-203871](docs%5CR3-203871.zip) | (TP for [NR\_SON\_MDT] BL CR for TS 38.300)Left issue on Stage 2 (ZTE) | other |
|  **CB: # 1002\_Email\_SONMDT\_Conn\_Failure****- Topics for discussion** **- stage-2 corrections**  **- Editor’s note on the NR RLF reporting to LTE** **- eNB receiving the LTE RLF report from the Inter-system SON Information IE may use the LTE RLF report as specified in TS 36.300** **- Use the IE Re-establishment cell CGI to transfer the CGI of the cell where UE attempted re-establishment or where the UE successfully reconnected after RLF** **- Alignment of CGI coding**(Samsung)**Summary of offline discussion** **Revised TPs for agreeable issues** |
| 10.2.1.2. Inter-System Ping-Pong and Unnecessary HandoverUnnecessary HO from NR to E-UTRAN is supported, E-UTRAN to NG-RAN is not supported in Rel16NG-RAN to E-UTRAN ping-pong (and vice versa) shall be supported, including ng-eNBUpdate the definition of quantityConfigNR-R15 IE from Integer to octet string and remove the definition of maxNrofQuantityConfig*Previous summary of offline disc.:* [*R3-202463*](docs%5CR3-202463.zip)*, noted**Rapporteur of 38.300 BLCR to fix the editorial change raised in* [*R3-201738*](docs%5CR3-201738.zip)*Rapporteur of 38.423 BLCR to fix the editorial change raised in* [*R3-201739*](docs%5CR3-201739.zip) |
| [R3-203673](docs%5CR3-203673.zip) | (TP for SON BL CR for TS 36.413)Correction on inter-system unnecessary HO (CATT) | other |
| [R3-203674](docs%5CR3-203674.zip) | (TP for SON BL CR for TS 38.300)Correction on Inter-System Unnecessary Handover (CATT) | other |
|  **CB: # 1003\_Email\_SONMDR\_PingPong****- Topics for discussion** **- *quantityConfigNR IE*** **- HO from ng-eNB in stage-2**(CATT)**Summary of offline discussion** **Revised TPs for agreeable issues** |
| 10.2.1.3. SN Change Failure*Moved to Rel-17* |
| 10.2.1.4. CU-DU Aspects for MROgNB-CU should forward the UE RLF report to the gNB-DU using a dedicated procedure at least in case of the RLF caused by random access problem*further discuss whether the UE RLF report is provided to the gNB-DU in case of beam failure recovery failure.**further discuss whether the new procedure needs to be defined to provide information about the detection of RLF events and the root cause of such events from the gNB-DU to the gNB-CU. To be continued...*The UE RLF report should be provided to the gNB-DU at least in cases of RACH related problems and beam failure recovery failure*Previous summary of offline disc.:* [*R3-202633*](docs%5CR3-202633.zip)*, noted*Define a new dedicated F1AP procedure for non UE-associated RLF report signalingIntroduce “RLF Report” as optional IE to a new F1AP procedure (same procedure as defined in CB # 1007)No need in Rel-16 to define a new procedure to provide information about the detection of RLF events and the root cause of such events from the gNB-DU to the gNB-CU |
| [R3-203307](docs%5CR3-203307.zip) | Addition of SON features CR 38.401 (Ericsson) | CR0120r1, TS 38.401 v16.1.0, Rel-16, Cat. B |
| [R3-203388](docs%5CR3-203388.zip) | Signalling of RLF Report to gNB-DU TP 38.473 (Ericsson) | other |
| [R3-203389](docs%5CR3-203389.zip) | Signalling of RLF information from gNB-CU to gNB-DU (Ericsson) | discussion |
| [R3-203434](docs%5CR3-203434.zip) | Addition of SON features TP 38.470 (Ericsson) | other |
| [R3-203830](docs%5CR3-203830.zip) | Remaining issues for CU-DU MRO (LG Electronics) | discussion |
| [R3-203831](docs%5CR3-203831.zip) | (TP for NR\_SON\_MDT BL CR for TS 38.473) Remaining issues for CU-DU MRO (LG Electronics) | other |
| [R3-203832](docs%5CR3-203832.zip) | (TP for NR\_SON\_MDT BL CR for TS 38.470) Remaining issues for CU-DU MRO (LG Electronics) | other |
| [R3-203833](docs%5CR3-203833.zip) | (TP for NR\_SON\_MDT BL CR for TS 38.401) Remaining issues for CU-DU MRO (LG Electronics) | other |
| [R3-203429](docs%5CR3-203429.zip) | Addition of SON features TP 38.470 (Ericsson) | CR0066r, TS 38.470 v16.1.0, Rel-16, Cat. B |
| [R3-203872](docs%5CR3-203872.zip) | Left issue for CU-DU MRO (ZTE) | discussion |
| [R3-203873](docs%5CR3-203873.zip) | TP for [NR\_SON\_MDT] BL CR for TS 38.473) CU-DU MRO (ZTE) | other |
|  **CB: # 1004\_Email\_SONMDT\_CUDU\_MRO****- Topics for discussion** **- Description of MRO (RLF report from CU to DU) for TS 38.401** **- Removal of FFs for: “Access and Mobility Indication” message name, F1AP ids, also removal of UE Assistant Identifier IE** **- Description of SON features for TS 38.470**(LG)**Summary of offline discussion** **Revised TPs for agreeable issues** |
| 10.2.1.5. Successful Handover Report*Pending RAN2 discussion, but RAN2 will not discuss this in Rel-16 – no discussion needed at this time* |
| 10.2.1.6. UE Reported Mobility History*Previous summary of offline disc.:* [*R3-202634*](docs%5CR3-202634.zip)*, noted* |
| [R3-203234](docs%5CR3-203234.zip) | TP for UE reported history information in RRC-Restablisment for TS 38.423 (Huawei) | other |
|  **CB: # 1005\_Email\_SONMDR\_UE\_Mob\_Hist****- History information from UE in the RETRIEVE UE CONTEXT RESPONSE message**(HW)**Summary of offline discussion** **Revised TPs for agreeable issues** |
| 10.2.2. Mobility Load Balancing**QUOTA: 5 (was 7)***Intra-system*Add RESOURCE STATUS REQUEST/RESPONSE/UPDATE procedures for Xn, X2 (for EN-DC), F1 and E1 interfaces (IEs for each interface are to be discussed separately)*Acknowledge the need of reporting spatial load distribution of cells; a solution is needed; RAN3 will work on a solution. Details on solutions are FFS. To be continued...**Inter-System MLB is not in WI scope*For UEs in RRC\_CONNECTED, introduce it in Xn (and FFS on X2)For TNL load, report maximum value and available value in % (FFS whether to report per-cell or per-node, and whether to report F1 and S1 separately)For HW load, introduce it for E1(for CU-UP) and report maximum value and available value in %Support per-SSB area granularityFor per slice granularity, support this granularity for CAC (Details and other metrics are FFS) |
| 10.2.2.1. MLB for Xn/X2/F1/E1CAC shall be supported on F1, Xn, X2TNL load shall be supported on F1 and E1*Per-slice load: previous summary of offline disc in* [*R3-196161*](https://www.3gpp.org/ftp/tsg_ran/WG3_Iu/TSGR3_105bis/Docs/R3-196161.zip)*, noted; to be continued…*Make Report Characteristics conditional to Registration Request setting to “start”.Need to clarify what happens if we try to add a cell that is already initiated for reporting: If measurements are already initiated for a cell indicated in the Cell To Report IE, this information shall be ignored.Add missing procedure text for all measurements and align FFSInclude the SSB index in the request and in the measurement (in CAC and PRB), with range [0..63]. Add measurement IDs to F1AP RESOURCE STATUS UPDATEMake cell list optional (CATT 0433) with procedural text mandating the cell list when needed.Add reporting SSB ID (CATT 0433)Confirm averaging window that equals to the reporting periodicity for all periodic load measurements and interfaces for Resource Status Update messages in NR.Align the BL CR on the existing NGAP and XnAP principle for signaling of S-NSSAI listsReword the text for unsuccessful operation (i.e. partial success not supported in Rel-16).*Previous summary of offline disc.:* [*R3-202840*](docs%5CR3-202840.zip)*, noted*Introduce the HW Capacity Indicator IE on F1, and remove it from X2/XnSlice Capacity Value vs. Slice Available Capacity Value: Renaming seems acceptable.On X2 and Xn, TNL capacity indicator to be included per cell.On F1, TNL capacity indicator to be included per node.*Reporting of Number of Active UEs:**Main options are:**- Xn only (two companies)**- F1+Xn, based on TS 38.314 section 4.1.1.3 (per DRB level measurements)**- F1 + Xn, based on TS 38.314 section 4.1.1.3.5 Mean number of Active UEs per cell**Additional question on whether to also report on X2. To be continued...**Resolve FFS on whether NG TNL Capacity Indicator is reported per cell**- on X2 and Xn: companies seem split**- on F1: majority for reporting per node**To be continued...* *E1AP TP To be continued on the basis of* [*R3-202746*](docs%5CR3-202746.zip) *(noted)...* |
| [R3-203235](docs%5CR3-203235.zip) | (TP for SON BL CR for TS 38.473): MLB (Huawei) | other |
| [R3-203236](docs%5CR3-203236.zip) | (TP for SON BL CR for TS 38.423): MLB (Huawei) | other |
| [R3-203237](docs%5CR3-203237.zip) | (TP for SON BL CR for TS 36.423): MLB (Huawei) | other |
| [R3-203238](docs%5CR3-203238.zip) | (TP for SON BL CR for TS 38.463): MLB (Huawei) | other |
| [R3-203318](docs%5CR3-203318.zip) | (TP for SON BL CR for TS 38.463) Load reporting updates from RAN3#107bis-e (Nokia, Nokia Shanghai Bell) | other |
| [R3-203319](docs%5CR3-203319.zip) | Remaining open points for MLB (Nokia, Nokia Shanghai Bell) | discussion |
| [R3-203390](docs%5CR3-203390.zip) | MLB – TP for BL CR for 38.423 (Ericsson) | other |
| [R3-203391](docs%5CR3-203391.zip) | MLB – TP for BL CR for 38.473 (Ericsson) | other |
| [R3-203392](docs%5CR3-203392.zip) | MLB – TP for BL CR for 38.463 (Ericsson) | other |
| [R3-203393](docs%5CR3-203393.zip) | MLB – TP for BL CR for 36.423 (Ericsson) | other |
| [R3-203394](docs%5CR3-203394.zip) | Discussion on remaining FFS for MLB in Rel-16 (Ericsson) | discussion |
| [R3-203471](docs%5CR3-203471.zip) | Remaining issues on active UEs for MLB (NTTDOCOMO) | discussion |
| [R3-203676](docs%5CR3-203676.zip) | Remaining Issues for MLB metrics (CATT) | discussion |
| [R3-203677](docs%5CR3-203677.zip) | (TP on SON BLCR for 38.423) TP on MLB metrics (CATT) | other |
| [R3-203678](docs%5CR3-203678.zip) | (TP on SON BLCR for 38.473) TP on MLB metrics (CATT) | other |
| [R3-203679](docs%5CR3-203679.zip) | (TP on SON BLCR for 36.423) TP on MLB metrics (CATT) | other |
| [R3-203803](docs%5CR3-203803.zip) | (TP for SON BL CR for TS 38.423) Load reporting updates (Nokia, Nokia Shanghai Bell) | other |
| [R3-203804](docs%5CR3-203804.zip) | (TP for SON BL CR for TS 38.463) Load reporting updates (Nokia, Nokia Shanghai Bell) | other |
| [R3-203805](docs%5CR3-203805.zip) | (TP for SON BL CR for TS 38.473) Load reporting updates (Nokia, Nokia Shanghai Bell) | other |
| [R3-203806](docs%5CR3-203806.zip) | (TP for SON BL CR for TS 36.423) Load reporting updates (Nokia, Nokia Shanghai Bell) | other |
| [R3-203874](docs%5CR3-203874.zip) | Left Issues for MLB (ZTE) | discussion |
| [R3-203875](docs%5CR3-203875.zip) | TP for [NR\_SON\_MDT] BL CR for TS 36.423) Addition of MLB Features (ZTE) | other |
| [R3-203876](docs%5CR3-203876.zip) | TP for [NR\_SON\_MDT] BL CR for TS 38.423) Addition of MLB Features (ZTE) | other |
| [R3-203877](docs%5CR3-203877.zip) | TP for [NR\_SON\_MDT] BL CR for TS 38.463) Addition of MLB Features (ZTE) | other |
| [R3-203878](docs%5CR3-203878.zip) | TP for [NR\_SON\_MDT] BL CR for TS 38.473) Addition of MLB Features (ZTE) | other |
| [R3-203900](docs%5CR3-203900.zip) | Remaining issues of MLB (CMCC) | discussion |
| [R3-203907](docs%5CR3-203907.zip) | TP to SON BLCR 38.423 on MLB (CMCC) | other |
| [R3-203928](docs%5CR3-203928.zip) | (TP for SON BL CR on 36.423) Addition of active UEs in load reporting (NTT DOCOMO, INC.) | discussion |
| [R3-203930](docs%5CR3-203930.zip) | (TP for SON BL CR on 38.423) Addition of active UEs in load reporting (NTT DOCOMO, INC.) | discussion |
| [R3-203931](docs%5CR3-203931.zip) | (TP for SON BL CR on 38.473) Addition of active UEs in load reporting (NTT DOCOMO, INC.) | discussion |
| [R3-203473](docs%5CR3-203473.zip) | (TP for SON BL CR on 36.423) Addition of active UEs in load reporting (NTT DOCOMO, INC.) | discussion |
| [R3-203474](docs%5CR3-203474.zip) | (TP for SON BL CR on 38.423) Addition of active UEs in load reporting (NTT DOCOMO, INC.) | discussion |
| [R3-203475](docs%5CR3-203475.zip) | (TP for SON BL CR on 38.473) Addition of active UEs in load reporting (NTT DOCOMO, INC.) | discussion |
|  **CB: # 1006\_Email\_SONMDR\_MLB****- Topics for discussion** **- Misc. corrections** **- Active UEs (which interfaces, how to encode)** **- TNL capacity (range, which interfaces, granularity)** **- HW capacity (which interfaces, granularity)** **- RRC connections (range, which interfaces)** **- SUL (whether to support, parameters)****- Misc corrections and alignment****- Can also discuss other issues based on contributions submitted**(Nokia)**Summary of offline discussion** **Revised TPs for agreeable issues** |
| 10.2.2.2. Void |
| 10.2.2.3. MLB for MR-DC |
| 10.2.3. RACH Optimization**QUOTA: 4**RACH configuration conflict detection and resolution function is located at the gNB-DU; details on assistance info exchanged between CU and DU are FFSgNB-DU needs to know the PRACH configuration of some or all cells neighbors to a cell subject to RACH configuration conflict, in order to effectively chose a new PRACH configuration for the cell in conflictSignaling of UE RACH Reports to the gNB-DU is needed |
| 10.2.3.1. RACH Optimization EnhancementsIntroduce NR PRACH Configuration list per UL/SUL for a cell.Reuse current NR ARFCN IE instead of introducing new IE.Introduce frequencyShift7p5kHz per-UL/SULNo need to include the freqBandIndicatorNRIntroduce scs-SpecificCarrierList for UL (DL is FFS)(Note: whether it should be included in serving cell information or PRACH configuration is FFS)Introduce an optional IE into the Served Cell Information NR structure to indicate the SSB Positions In BurstDo not introduce any cause IE for random accessAgree exchanging NR PRACH coordination over X2APAeparate the discussion on SCS-SpecificCarrier for DL with PRACH configuration i.e. remove the SCS-SpecificCarrier for DL in the TP and discuss this issue as a correction*Previous summary of offline disc.:* [*R3-202636*](docs%5CR3-202636.zip)*, noted**X2AP: To be continued...* |
| [R3-203397](docs%5CR3-203397.zip) | TP for PRACH Configuration IE Signalling on Xn Interface (Ericsson) | other |
| [R3-203494](docs%5CR3-203494.zip) | (TP for SON BL CR for TS 38.423): FFSes clean-up for PRACH configuration exchange (Huawei) | other |
| [R3-203495](docs%5CR3-203495.zip) | (TP for SON BL CR for TS 38.473): FFSes clean-up for PRACH configuration exchange (Huawei) | other |
| [R3-203540](docs%5CR3-203540.zip) | Discussion on the Remaining Issues for PRACH Optimization (China Telecom Corporation Ltd.) | discussion |
| [R3-203541](docs%5CR3-203541.zip) | TP for [NR\_SON\_MDT] BL CR for TS 36.423 (China Telecom, China Unicom, CATT, Huawei, ZTE) | discussion |
| [R3-203680](docs%5CR3-203680.zip) | Discussion on PRACH coordination (CATT) | discussion |
| [R3-203681](docs%5CR3-203681.zip) | (TP on SON BLCR for 38.423) TP on PRACH coordination (CATT) | other |
| [R3-203682](docs%5CR3-203682.zip) | (TP on SON BLCR for 38.473) TP on PRACH coordination (CATT) | other |
| [R3-203819](docs%5CR3-203819.zip) | Remaining issues for PRACH configuration transfer (Nokia, Nokia Shanghai Bell) | discussion |
| [R3-203879](docs%5CR3-203879.zip) | Left issue for PRACH configuraiton parameter (ZTE) | discussion |
| [R3-203904](docs%5CR3-203904.zip) | (TP for TS 38.470) on F1 aspects for SON (CMCC) | other |
| [R3-203905](docs%5CR3-203905.zip) | (TP for TS 38.420) on Xn aspects for SON (CMCC) | other |
|  **CB: # 1007\_Email\_SONMDT\_RACH****- Discuss left-over issues from the last meeting, specifically:** **- Position to include scs-SpecificCarrierList i.e., it should be per UL/SUL or per PRACH Configuration** **- Whether new TDD pattern should be introduced** **- Whether we need to distinguish Root Sequence Index BFR IE from Root Sequence Index, i.e., should both Root Sequence Index BFR IE and Root Sequence Index IE be introduced in the PRACH configuration?** **- Use two IE i.e. Location and Bandwidth (16 bits if no extending) and MSG1 Frequency Start (9 bits if no extending or one IE i.e. MSG1 Frequency Start from Carrier (9 bits if no extending), to present the offset to PRACH** **- Which IE should be used to indicate the mapping between RACH resources and SSB, ssb-perRACH-OccasionAndCB-PreamblesPerSSB or ssb-perRACH-Occasion?** **- Which message should be used and within which IE the PRACH configuration should be included?** **- Trigger for delivering neighbour cell’s PRACH configuration from gNB-CU to gNB-DU****- Also discuss remaining FFSs, e.g.**  **- Carrier List,** **- PRACH Frequency Start,** **- and others…****- Can also discuss other issues based on papers submitted, e.g.**  **- EN-DC,**  **- and others…**(CT)**Summary of offline discussion** **Revised TPs for agreeable issues** |
| 10.2.3.2. Configuration Conflicts for RACH Optimization*Previous summary of offline disc.:* [*R3-202637*](docs%5CR3-202637.zip)*, noted*Define a new message “ACCESS AND MOBILITY INDICATION” over F1AP with “RACH Report” as OPTIONAL IE “ACCESS AND MOBILITY INDICATION” message over F1AP is introduced for non-UE associated signaling, with FFS for UE-associated signalingDefine a new message “ACCESS AND MOBILITY INDICATION” over XnAP with “RACH Report” as OPTIONAL IE Reuse RAN2 IE RACH -Report-r16 for RACH Report in RAN3 instead of identifying and defining new IEs for better reusability and forward compatibilityNo stage2 details regarding filtering of RACH Report is identified yet and can be added later if neededFFS whether to introduce a RACH indication message in F1AP from DU to CU*Whether to support RACH indication from DU to CU to collect UE RACH report over Uu?**- Pros: i) RACH indication could be useful assistance information for CU to trigger RACH Report from UE in case of DU-only detected RACH accesses before the maximum storage of 8 RACH Reports in absence of RACH availability indication from UE, ii) Timely collection of RACH Report without need of obtaining through Xn or filtering the RACH Reports**- Cons: i) Not reliable as UE has complete knowledge of RACH accesses and DU cannot signal RACH indication in case of CU-only detected RACH attempts to trigger RACH Report, ii) Most RACH attempts are due to mobility and DU-only detected RACH attempts are rare* *To be continued...* |
| [R3-203395](docs%5CR3-203395.zip) | TP for RACH report availability indication on F1 interface (Ericsson) | other |
| [R3-203396](docs%5CR3-203396.zip) | TP for RACH Report Signalling on F1 Interface (Ericsson) | other |
| [R3-203398](docs%5CR3-203398.zip) | Solution for RACH Conflict Detection and Resolution at gNB-DU (Ericsson) | other |
| [R3-203496](docs%5CR3-203496.zip) | (TP for SON BL CR for TS 38.423): UE RACH report for RACH optimization (Huawei) | other |
| [R3-203497](docs%5CR3-203497.zip) | (TP for SON BL CR for TS 38.473):UE RACH report for RACH optimization (Huawei) | other |
| [R3-203625](docs%5CR3-203625.zip) | (TP for SON BL CR for TS 38.473) RACH Report over F1 Interface (Samsung) | other |
| [R3-203626](docs%5CR3-203626.zip) | (TP for SON BL CR for TS 38.423) RACH Report over F1 Interface (Samsung) | other |
| [R3-203820](docs%5CR3-203820.zip) | Remaining issues for RACH conflict resolution (Nokia, Nokia Shanghai Bell) | discussion |
| [R3-203821](docs%5CR3-203821.zip) | (TP for SON BL CR for TS 38.473) Introduction of RACH Assistance Information (Nokia, Nokia Shanghai Bell) | other |
| [R3-203822](docs%5CR3-203822.zip) | (TP for SON BL CR for TS 38.423) Introduction of RACH Assistance Information (Nokia, Nokia Shanghai Bell) | other |
| [R3-203880](docs%5CR3-203880.zip) | Configuration Conflicts for RACH Optimization (ZTE) | discussion |
| [R3-203881](docs%5CR3-203881.zip) | (TP for [NR\_SON\_MDT] BL CR for TS 38.473)Left issue for RACH Report from UE (ZTE) | other |
|  **CB: # 8\_Email\_SONMDT\_RACH\_Config****- Topics for discussion** **- RACH notification from DU to CU** **- RACH report from CU to DU, including UE associated vs. non-UE associated signalling and message name** **- X2, including RACH conflict resolution****- Can discuss other issues based on contributions submitted**(HW)**Summary of offline discussion** **Revised TPs for agreeable issues** |
| 10.2.4. PCI Selection*Depending on work progress, this may be discussed in the later part of the WI* |
| 10.2.5. Energy Saving*OAM requirements only**Depending on work progress, this may be discussed in the later part of the WI* |
| 10.3. Signaling Support for Minimization of Drive Testing**QUOTA: 7***For identified use cases, including coverage optimization, QoS verification via MDT, indoor MDT improvement, location info reporting, and sensor data collection (in cooperation with RAN2)**For stand-alone, NR-DC and EN-DC, including CU-DU split architecture**W1 specification work is not in the scope*Initial Context Setup, Handover Request and Trace Start Message, and retrieve UE context response are used for signaling based MDT activationDeactivate trace and trace failure indication are used for MDT deactivationUE Context Request and Trace Start on F1, Bearer context Setup and Trace Start on E1 are used for signaling based MDT activation. The EM of each node may send the MDT activation to CU-CP, DU, and CU-UP directly. If a gNB-CU receives a management based MDT activation, it may propagate the MDT configuration to DU and/or CU-UP over F1 and E1 if needed.The EM of each node may send the MDT deactivation to CU-CP, DU, and CU-UP directly. If a gNB-CU receives a management based MDT deactivation, it may propagate the management based MDT deactivation to DU and/or gNB-CU-UP if needed.In non-split RAN architecture, the NG-RAN node reports the MDT data to TCE. In split RAN architecture, the MDT data is reported to TCE by each node directly; it is FFS whether the gNB-CU-CP may combine MDT data received by other nodes to report to TCE |
| 10.3.1. MDT Activation and ReportingSignaling based logged MDT configuration includes following parameters (NG):- MDT mode configuration, i.e., logged MDT only;- Area scope of MDT, including cell list of E-CGI or N-CGI, TAC list of serving PLMN, TAI list, and PLMN wide; (may need to be updated pending RAN2 discussion)- Logging interval;- Logging duration;- Bluetooth Measurement Configuration;- WLAN Measurement Configuration;Signaling based immediate MDT configuration includes following parameters (NG):- MDT mode configuration: immediate MDT only, immediate MDT and trace;- Area scope of MDT, including cell list of E-CGI or N-CGI, TAC list of serving PLMN, TAI list, and PLMN wide; (may need to be updated pending RAN2 discussion)- MDT location information, enumerated type;- Signaling based MDT PLMN List.NG-RAN receives the management based MDT allowed information in the NG Initial Context Setup Request message. The management based MDT allowed information includes the Management Based MDT Allowed indication and optionally the Management Based MDT PLMN ListAgree to define Cell Traffic Trace in F1 and E1.No NR CGI ID is included in E1 and F1 Cell Traffic Trace. AP IDs shall be included in the Cell Traffic Trace message.It is proposed to agree the below changes to BL CR.- Agree to remove FFS for immediate MDT configuration and logged MDT configuration in MDT Configuration-NR IE in NG, Xn, E1, F1. Taking example in [R3-200496](docs%5CR3-200496.zip). - Add new IE-Reporting Type for Event trigger Logged MDT in NG and Xn. i.e. take Ericson proposal in [R3-200965](docs%5CR3-200965.zip).- Agree to MDT measurement activation bitmap for immediate MDT in NG.- The MDT measurements configurations except the area of scope IE for EUTRAN connecting to 5GC can be OCTET STRING and refer to TS 36.413 to simplify NG specification impact.Whether new value for logging interval IE is defined is pending to RAN2 agreement.It is proposed to send a LS to RAN2, informing RAN3 agreed to remove the management based MDT Allowed IE and keep MDT PLMN list. Then RAN2 can take RAN3 agreement into account and update specification if needed.It is proposed to add MDT Location Information IE in MDT Configuration IE in F1, and it is marked FFS*Previous summary of offline disc.:* [*R3-202638*](docs%5CR3-202638.zip)*, noted**Previous in* [*R3-202748*](docs%5CR3-202748.zip)*,* [*R3-202785*](docs%5CR3-202785.zip)*,* [*R3-202791*](docs%5CR3-202791.zip)*,* [*R3-202830*](docs%5CR3-202830.zip)*,* [*R3-202826*](docs%5CR3-202826.zip) *(noted)**To be continued on this basis...* |
| [R3-203337](docs%5CR3-203337.zip) | Streaming based MDT (Qualcomm Incorporated) | discussion |
| [R3-203338](docs%5CR3-203338.zip) | (TP for MDT BL CR for TS 38.413) Streaming based MDT (Qualcomm Incorporated) | other |
| [R3-203339](docs%5CR3-203339.zip) | (TP for MDT BL CR for TS 38.423) Streaming based MDT (Qualcomm Incorporated) | other |
| [R3-203399](docs%5CR3-203399.zip) | Averaging interval in M6 measurement configuration on NGAP (Ericsson) | other |
| [R3-203400](docs%5CR3-203400.zip) | Averaging interval in M6 measurement configuration on XnAP (Ericsson) | other |
| [R3-203401](docs%5CR3-203401.zip) | Averaging interval in M6 measurement configuration on F1AP (Ericsson) | other |
| [R3-203402](docs%5CR3-203402.zip) | Averaging interval in M6 measurement configuration on E1AP (Ericsson) | other |
| [R3-203498](docs%5CR3-203498.zip) | (TP for MDT BL CR for TS 38.413): Corrections to MDT BLCR (resubmission of [R3-202785](docs%5CR3-202785.zip)) (Huawei) | other |
| [R3-203499](docs%5CR3-203499.zip) | (TP for MDT BL CR for TS 38.413): Clean up FFSes in MDT BLCR (Huawei) | other |
| [R3-203500](docs%5CR3-203500.zip) | (TP for MDT BL CR for TS 38.423): Clean up FFSes in MDT BLCR (Huawei) | other |
| [R3-203501](docs%5CR3-203501.zip) | Beam related configuration for immediate MDT (Huawei, LGU+, BT) | discussion |
| [R3-203502](docs%5CR3-203502.zip) | (TP for MDT BL CR for TS 38.413): Beam related configuration for immediate MDT (Huawei, LGU+, BT) | other |
| [R3-203503](docs%5CR3-203503.zip) | (TP for MDT BL CR for TS 38.423): Beam related configuration for immediate MDT (Huawei, LGU+, BT) | other |
| [R3-203504](docs%5CR3-203504.zip) | [DRAFT] LS on SSB based Beam configurations for immediate MDT (Huawei) | LS out To: RAN2, SA5 CC:  |
| [R3-203669](docs%5CR3-203669.zip) | (TP for MDT BL CR for 38.473) Correction for Cell Traffic Trace message and MDT configuration (Samsung R&D Institute UK) | other |
| [R3-203670](docs%5CR3-203670.zip) | (TP for MDT BL for 38.423) Propagation for Management Based MDT PLMN List (Samsung R&D Institute UK) | other |
| [R3-203807](docs%5CR3-203807.zip) | On Rel-16 MDT status (Nokia, Nokia Shanghai Bell) | discussion |
| [R3-203808](docs%5CR3-203808.zip) | (TP for MDT BL CRs) URI for Streaming Trace reporting on NG, Xn, F1 and E1 (Nokia, Nokia Shanghai Bell) | other |
| [R3-203882](docs%5CR3-203882.zip) | Left issue for MDT (ZTE) | discussion |
| [R3-203883](docs%5CR3-203883.zip) | (TP for [NR\_SON\_MDT] BL CR for TS 38.413)Addition of MDT (ZTE) | other |
| [R3-203884](docs%5CR3-203884.zip) | (TP for [NR\_SON\_MDT] BL CR for TS 38.423)Addition of MDT (ZTE) | other |
| [R3-203885](docs%5CR3-203885.zip) | (TP for [NR\_SON\_MDT] BL CR for TS 38.463)Addition of MDT (ZTE) | other |
| [R3-203886](docs%5CR3-203886.zip) | (TP for [NR\_SON\_MDT] BL CR for TS 38.473)Addition of MDT (ZTE) | other |
| [R3-203902](docs%5CR3-203902.zip) | BLCR for TS 38.470)\_Addtion of MDT features (CMCC) | CR0068r, TS 38.470 v16.1.0, Rel-16, Cat. B |
| [R3-203903](docs%5CR3-203903.zip) | BLCR for TS 38.460\_Addtion of MDT features (CMCC) | CR0038r, TS 38.460 v16.0.0, Rel-16, Cat. B |
| [R3-203906](docs%5CR3-203906.zip) | (TP for TS 38.413) on corrections of WLAN and BT configuration (CMCC) | other |
|  **CB: # 1009\_Email\_SONMDT\_MDT****- Topics for discussions** **- Misc. corrections and alignment**  **- Support for streaming based MDT** **- M6 measurement** **- Beam related configuration, including LS** **- Propagation of Management Based MDT PLMN List over X2** **- Solution for intra-DU mobility entering or leaving the MDT area scope** **- Stage-2 (38.370, 38.360)** **- M8 and M9 configuration****- Can also discuss other issues based on contributions submitted**(QCOM)**Summary of offline discussion** **Revised TPs for agreeable issues** |
| 10.3.2. MDT for Inactive UEs*Previous summary of offline disc.:* [*R3-202639*](docs%5CR3-202639.zip)*, noted*Liaise RAN2 asking whether the agreement “Management based MDT should not overwrite signalling based MDT” is applicable to all MDT scenariosA solution to enable the RAN to respect the agreement from RAN2 below is needed:“Management based MDT should not overwrite signalling based MDT”*How to enforce RAN2 agreement for Idle UEs (e.g. signaling MDT status flag from CN to RAN? other solutions are not precluded): To be continued...* |
| [R3-203340](docs%5CR3-203340.zip) | Prioritization of Signaling MDT over management based MDT for different RRC states (Qualcomm Incorporated) | discussion |
| [R3-203341](docs%5CR3-203341.zip) | (TP for MDT BL CR for TS 38.413) Prioritization of Signaling MDT over management based MDT for different RRC states (Qualcomm Incorporated) | other |
| [R3-203342](docs%5CR3-203342.zip) | (TP for MDT BL CR for TS 38.423) Prioritization of Signaling MDT over management based MDT for different RRC states (Qualcomm Incorporated) | other |
| [R3-203404](docs%5CR3-203404.zip) | Signalling Logged MDT configuration indication over XnAP (Ericsson) | discussion |
| [R3-203405](docs%5CR3-203405.zip) | Signalling Logged MDT configuration indication over NGAP TP (Ericsson) | other |
| [R3-203887](docs%5CR3-203887.zip) | Management based MDT should not overwrite signalling based MDT (ZTE) | discussion |
| [R3-203671](docs%5CR3-203671.zip) | (TP for 38.423)management based logged MDT not overwrite the signalling based logged MDT (Samsung R&D Institute UK) | other |
| [R3-203672](docs%5CR3-203672.zip) | (TP for 38.413)management based logged MDT not overwrite the signalling based logged MDT (Samsung R&D Institute UK) | other |
|  **CB: # 1010\_Email\_SONMDT\_MDT\_INACTIVE****- Prioritization of Signaling MDT over management-based MDT**(E///)**Summary of offline discussion** **Revised TPs for agreeable issues** |
| 10.3.3. MDT for MR-DCIntroduce MDT Configuration NR IE in Trace Activation IE in both S1AP and X2 AP.MDT configuration NR IE is defined as an OCTET STRING type IE referring to TS 38.413 for detailed definition.Add the following note in proper place of the procedural text: “Only immediate MDT configurations are included in the MDT configuration NR IE in this version of the specification”.Reuse the current Management MDT allowed IE and MDT PLMN list IE to indicate the user consent for NR.Introduce both the Management MDT allowed IE and MDT PLMN list IE in SgNB Addition Request message and SgNB Modification Request message.Introduce Cell Traffic Trace from S-engNB to MeNB to X2AP to support management based MDT triggered in S-en-gNB.M5-M7 measurements in EN-DC, MDT in EN-DC for SN-terminated SCG/split bearers and MN terminated SCG/split bearers, are not supported in Rel-16; No LS for RAN2 is needed*Previous summary of offline disc.:* [*R3-202640*](docs%5CR3-202640.zip)*, noted**Discussion on M4: To be continued...* |
| [R3-203888](docs%5CR3-203888.zip) | M4 measuement for EN-DC MDT (ZTE) | discussion |
| [R3-203403](docs%5CR3-203403.zip) | M4 measurements configuration for Immediate MDT with EN-DC (Ericsson) | discussionMove to 10.3.3 |
|  **CB: # 1011\_Email\_SONMDT\_EN-DC****- M4 support****- LS?**(ZTE) |
| 10.3.4. Void |
| 10.3.5. Specification of Layer 2 Measurements*In cooperation with RAN2* |