**3GPP TSG-RAN WG2 Meeting #131 R2-2506378**

**Bengaluru, India, Aug. 25th – 29th, 2025**

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| *CR-Form-v12.3* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **38.306** | **CR** | **Draft** | **rev** | **-** | **Current version:** | **18.6.0** |  |
|  | | | | | | | | |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* | | | | | | | | |
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| ***Proposed change affects:*** | UICC apps |  | ME | **X** | Radio Access Network | **X** | Core Network |  |

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| ***Title:*** | Introduction of SONMDT UE Capabilities | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | CATT | | | | | | | | | |
| ***Source to TSG:*** | R2 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_ENDC\_SON\_MDT\_Ph4-Core | | | | |  | ***Date:*** | | | 2025-09-01 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***Release:*** | | | Rel-19 |
|  | *Use one of the following categories:* ***F*** *(correction)* ***A*** *(mirror corresponding to a change in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)*  Detailed explanations of the above categories can be found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | | | | | | | | *Use one of the following releases: Rel-8 (Release 8) Rel-9 (Release 9) Rel-10 (Release 10) Rel-11 (Release 11) … Rel-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)  Rel-20 (Release 20)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | Introduction of UE capabilities for R19 SON/MDT features | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | UE capability signallings are introduced for:   1. RLF-report for MCG LTM 2. RLF-report for CHO with candidate SCG 3. Geographic area scope checking for logged MDT   UE capabilities without signalling are introduced for:   1. SHR/RA report for MCG LTM 2. SHR/SPR/SCGFailureInformation for CHO with candidate SCG 3. RA report for SDT 4. MHI enhancement for SCG deactivation 5. RLF Report for time/location based CHO 6. SCGFailureInformation enhancement for S-CPAC scenario 7. RLF report and SHR report enhancements for CHO with candidate SCG when CHO only configuration is received 8. Logged MDT enhancement for Slicing | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | UE capabilites for R19 SON/MDT features are not suported in TS 38.306. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 4.2.17, 4.2.18, 5.7 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | | **x** |  | Other core specifications | | | | TS 38.331 CR xxxx | | |
| ***affected:*** | |  | **x** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **x** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

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| CHANGE START |

### 4.2.17 SON parameters

| Definitions for parameters | Per | M | FDD-TDD DIFF | FR1-FR2 DIFF |
| --- | --- | --- | --- | --- |
| ***onDemandSI-Report-r17***  Indicates whether the UE supports delivery of on-Demand SI information upon request from the network as specified in TS 38.331 [9]. | UE | No | No | No |
| ***pscell-MHI-Report-r17***  Indicates whether the UE supports the storage of PSCell mobility history information and the reporting in *UEInformationResponse* message as specified in TS 38.331 [9]. | UE | No | No | No |
| ***rach-Report-r16***  Indicates whether the UE supports delivery of RA report upon request from the network. | UE | No | No | No |
| ***rlfReportCHO-r17***  Indicates whether the UE supports RLF-Report for conditional handover. | UE | No | No | No |
| ***rlfReportCondHandoverWithCandSCG-r19***  Indicates whether the UE supports RLF-Report for conditional handover with candidate SCG. A UE supporting this feature shall also support *rlfReportCHO-r17*. | UE | No | No | No |
| ***rlfReportDAPS-r17***  Indicates whether the UE supports RLF-Report for DAPS handover. | UE | No | No | No |
| ***rlfReport-LTM-r19***  Indicates whether the UE supports RLF-Report for MCG LTM. | UE | No | No | No |
| ***spr-Report-r18***  Indicates whether the UE supports the storage and delivery of Successful PScell Change/Addition Report upon request from the network. | UE | No | No | No |
| ***success-HO-Report-r17***  Indicates whether the UE supports the storage and delivery of Successful Handover Report upon request from the network as specified in TS 38.331 [9]. | UE | No | No | No |
| ***successIRAT-HO-Report-r18***  Indicates whether the UE supports the storage and delivery of Successful Handover Report for Handover from NR to E-UTRA, upon request from the network. | UE | No | No | No |
| ***twoStepRACH-Report-r17***  Indicates whether the UE supports the storage and delivery of 2-step RACH related information upon request from the network as specified in TS 38.331 [9]. | UE | No | No | No |

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| NEXT CHANGE |

### 4.2.18 UE-based performance measurement parameters

| Definitions for parameters | Per | M | FDD-TDD DIFF | FR1-FR2 DIFF |
| --- | --- | --- | --- | --- |
| ***barometerMeasReport-r16***  Indicates whether the UE supports uncompensated barometeric pressure measurement reporting upon request from the network. | UE | No | No | No |
| ***earlyMeasLog-r17***  Indicates whether the UE supports the storage of Early Measurement Logging in logged measurements and the reporting upon request from the network as specified in TS 38.331 [9]. | UE | No | No | No |
| ***excessPacketDelay-r17***  Indicates whether the UE supports the UL PDCP excess packet delay measurement per DRB as specified in TS 38.314 [26]. A UE that supports the UL PDCP excess packet delay measurement shall also support the measurement configuration and reporting as specified in TS 38.331 [9]. | UE | No | No | No |
| ***geoAreaScopeChecking-r19***  Indicates whether the UE supports geographic area scope checking for logged MDT. A UE supporting this feature shall also support *loggedMeasurements-r16*. | UE | No | No | No |
| ***gnss-Location-r16***  Indicates whether the UE is equipped with a GNSS or A-GNSS receiver that may be used to provide detailed location information along with SON, MDT, and NTN related measurements in RRC\_CONNECTED, RRC\_IDLE and RRC\_INACTIVE state. A UE shall set this field to *supported* if it indicates the support of *nonTerrestrialNetwork-r17*. | UE | CY | No | No |
| ***immMeasBT-r16***  Indicates whether the UE supports Bluetooth measurements in RRC\_CONNECTED state. | UE | No | No | No |
| ***immMeasWLAN-r16***  Indicates whether the UE supports WLAN measurements in RRC\_CONNECTED state. | UE | No | No | No |
| ***loggedMDT-PNI-NPN-r18***  Indicates whether the UE supports Logged MDT for PNI-NPN(s). | UE | No | No | No |
| ***loggedMDT-SNPN-r18***  Indicates whether the UE supports Logged MDT for SNPN(s). | UE | No | No | No |
| ***loggedMeasBT-r16***  Indicates whether the UE supports Bluetooth measurements in RRC\_IDLE and RRC\_INACTIVE state. | UE | No | No | No |
| ***loggedMeasurements-r16***  Indicates whether the UE supports logged measurements in RRC\_IDLE and RRC\_INACTIVE state. A UE that supports logged measurements shall support both periodical logging and event-triggered logging. The minimum memory size of MDT logged measurements is 64KB. For eRedCap UE supporting this feature, the minimum memory size of MDT logged measurements is 16KB. | UE | No | No | No |
| ***loggedMeasWLAN-r16***  Indicates whether the UE supports WLAN measurements in RRC\_IDLE and RRC\_INACTIVE state. | UE | No | No | No |
| ***multipleCEF-Report-r17***  Indicates whether the UE supports the storage and delivery of multiple CEF reports upon request from the network as specified in TS 38.331 [9]. | UE | No | No | No |
| ***orientationMeasReport-r16***  Indicates whether the UE supports orientation information reporting upon request from the network. | UE | No | No | No |
| ***sigBasedLogMDT-OverrideProtect-r17***  Indicates whether the UE supports the override protection of the signalling based logged measurements configured in NR. | UE | No | No | No |
| ***speedMeasReport-r16***  Indicates whether the UE supports speed information reporting upon request from the network. | UE | No | No | No |
| ***ulPDCP-Delay-r16***  Indicates whether the UE supports UL PDCP Packet Average Delay measurement (as specified in TS 38.314 [26]) and reporting in RRC\_CONNECTED state. | UE | No | No | No |

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| NEXT CHANGE |

## 5.7 MDT and SON features

| Definitions for feature |
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| **Cross RAT RLF Report**  It is optional for UE to support the delivery of EUTRA RLF report to an NR node upon request from the network. |
| **Logged MDT for Slicing**  **It is optional for UE to support** **Logged MDT for Slicing.** |
| **Mobility history information storage**  It is optional for UE to support the storage of PCell mobility history information and the reporting in *UEInformationResponse* message as specified in TS 38.331 [9]. |
| **Mobility history information storage for SCG deactivation**  It is optional for UE to support the storage of the time the UE has spent in PSCell with SCG activated and the reporting in *UEInformationResponse* message as specified in TS 38.331 [9]. |
| **Radio Link Failure Report for inter-RAT MRO EUTRA**  It is optional for UE to support:  - Inclusion of EUTRA CGI and associated TAC, if available, and otherwise to include the physical cell identity and carrier frequency of the target PCell of the failed handover as *failedPCellId* in *RLF-Report* upon request from the network as specified in TS 38.331 [9].  - Inclusion of EUTRA CGI and associated TAC as *previousPCellId* in *RLF-Report* as specified in TS 38.331 [9].  - Inclusion of *eutraReconnectCellId* in *reconnectCellId* in the *RLF-Report* as specified in TS 38.331 [9] upon UE has radio link failure or handover failure and successfully re-connected to an E-UTRA cell. |
| **RACH Partitioning Information**  It is optional for UE to support the delivery of RACH partitioning related information via RACH report procedure, upon request from the network. |
| **RA Report for SDT**  It is optional for UE to support the delivery of SDT related information via RACH report procedure, upon request from the network. |
| **RLF report after successful fast MCG recovery**  It is optional for UE to support logging *previousPCellId*, *lastHO-Type*, and *timeConnFailure* when T316 was not running before entering the PCell in which the radio link failure was detected. |
| **RLF Report for Fast MCG Recovery**  It is optional for UE to support the delivery of the Fast MCG recovery related information in the RLF-Report. |
| **RLF Report for Inter-system HO for Voice Fallback**  It is optional for UE to support the delivery of an explicit indication in the RLF-report when mobility from NR due to voice fallback fails. |
| **RLF Report for time/location based CHO**  It is optional for UE to support the delivery of the time/location based CHO related information in the RLF-Report. A UE supporting this feature shall also support *rlfReportCHO-r17*. |
| **SCG Failure Report for CPAC**  It is optional for UE to support the delivery of the CPAC related parameters for MRO in *SCGFailureInformation* message to the network. |
| **SCG Failure Report for MRO**  It is optional for UE to support the delivery of the SCG failure related parameters for MRO in *SCGFailureInformation* message to the network. |
| **SCG Failure Report for Subsequent CPAC**  It is optional for UE to support the delivery of the Subsequent CPAC related parameters for MRO in *SCGFailureInformation* message to the network. |
| **SON enhancements for CHO with candidate SCG**  It is optional for UE to support the delivery of CHO with candidate SCG related information in SHR/SPR/SCGFailureInformation report, upon request from the network. |
| **SON enhancements for CHO with candidate SCG when CHO only configuration is received**  It is optional for UE to support the delivery of CHO with candidate SCG related information when CHO only configuration is received in RLF/SHR report, upon request from the network. |
| **SON enhancements for MCG LTM**  It is optional for UE to support the delivery of MCG LTM related information in SHR/RACH report, upon request from the network. |
| **SON enhancements for NR-U**  It is optional for UE to support the delivery of NR-U related information (FR1 only) in RA-report/SHR/RLF/SPR/SCGFailureInformation report, upon request from the network. |
| **SON Report in SNPN**  It is optional for UE to support collection and delivery of SON reports in SNPN. UE is not required to support all SON reports if it supports collection and delivery of the SON reports in SNPN, it may support one or more SON report for SNPN. |
| **SpCell ID indication**  It is optional for UE to support the delivery of the *spCellID-r17* in the RA-Report, if the RA procedure is performed in a SCell of the MCG/SCG. |
| **Uplink PDCP delay measurements upon MO update**  It is optional for UE to support not resetting the UL PDCP Packet Average Delay measurement or UL PDCP excess packet delay measurement when the associated measurement object is modified. A UE supporting this feature shall also indicate the support of at least one of *ulPDCP-Delay-r16* and *excessPacketDelay-r17*. |

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| CHANGE END |

### Annex: TP for 38.822

### 8.2.X NR\_ENDC\_SON\_MDT\_Ph4

Table 8.2.X-1: Layer-2 and Layer-3 feature list for NR\_ENDC\_SON\_MDT\_Ph4

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Features | Index | Feature group | Components | Prerequisite feature groups | Field name in TS 38.331 [2] | Parent IE in TS 38.331 [2] | Need of FDD/TDD differentiation | Need of FR1/FR2 differentiation | Note | Mandatory/Optional |
| Y. NR\_ENDC\_SON\_MDT\_Ph4-Core | Y-1 | RLF Report for MCG LTM | Indicates whether the UE supports RLF-Report for MCG LTM. |  | *rlfReport-LTM-r19* | *SON-Parameters-r16* | No | No |  | Optional with capability signalling |
| Y-2 | RLF Report for CHO with candidate SCG | Indicates whether the UE supports RLF-Report for conditional handover with candidate SCG. | 37-1 | *rlfReportCondHandoverWithCandSCG-r19* | *SON-Parameters-r16* | No | No |  | Optional with capability signalling |
| Y-3 | Geographic area scope checking for logged MDT | Indicates whether the UE supports geographic area scope checking for logged MDT. | 20-6 | *geoAreaScopeChecking-r19* | *UE-BasedPerfMeas-Parameters -r16* | No | No |  | Optional with capability signalling |
| Y-4 | Mobility history information storage for SCG deactivation | It is optional for UE to support the storage of the time the UE has spent in PSCell with SCG activated and the reporting in UEInformationResponse message as specified in TS 38.331 [2] |  | *N/A* | *N/A* | No | No |  | Optional without capability signalling |
| Y-5 | SON enhancements for MCG LTM | It is optional for UE to support the delivery of MCG LTM related information in SHR/RACH report, upon request from the network. |  | *N/A* | *N/A* | No | No |  | Optional without capability signalling |
| Y-6 | RA Report for SDT | It is optional for UE to support the delivery of SDT related information via RACH report procedure, upon request from the network. |  | *N/A* | *N/A* | No | No |  | Optional without capability signalling |
| Y-7 | RLF Report for time/location based CHO | It is optional for UE to support the delivery of the time/location based CHO related information in the RLF-Report. | 37-1 | *N/A* | *N/A* | No | No |  | Optional without capability signalling |
| Y-8 | SON enhancements for CHO with candidate SCG | It is optional for UE to support the delivery of CHO with candidate SCG related information in SHR/SPR/SCGFailureInformation report, upon request from the network. |  | *N/A* | *N/A* | No | No |  | Optional without capability signalling |
|  | Y-9 | Logged MDT for Slicing | It is optional for UE to support Logged MDT for Slicing. |  | *N/A* | *N/A* | No | No |  | Optional without capability signalling |
|  | Y-10 | SCG Failure Report for Subsequent CPAC | It is optional for UE to support the delivery of the Subsequent CPAC related parameters for MRO in SCGFailureInformation message to the network. |  | *N/A* | *N/A* | No | No |  | Optional without capability signalling |
|  | Y-11 | SON enhancements for CHO with candidate SCG when CHO only configuration is received | It is optional for UE to support the delivery of CHO with candidate SCG related information when CHO only configuration is received in RLF/SHR report, upon request from the network. |  | *N/A* | *N/A* | No | No |  | Optional without capability signalling |