**3GPP TSG-RAN WG2 Meeting #110-eR2-2006197**

Electronic meeting, 1st - 12th Jun, 2020

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| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **38.306** | **CR** |  | **rev** |  | **Current version:** | **16.0.0** |  |
|  | | | | | | | | |
| *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 |  | Core Network |  |

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|  | | | | | | | | | | |
| ***Title:*** | Running CR to 38.306 for NR\_SON\_MDT | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | vivo, CMCC | | | | | | | | | |
| ***Source to TSG:*** | R2 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_SON\_MDT-Core | | | | |  | ***Date:*** | | | 2020-05-22 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***Release:*** | | | Rel-16 |
|  | *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-12 (Release 12)* *Rel-13 (Release 13) Rel-14 (Release 14) Rel-15 (Release 15) Rel-16 (Release 16)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | To capture RAN2 agreements on UE capability for NR\_SON\_MDT in NR into TS 38.306. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Introduction of UE capabilities for MDT and SON. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | The network does not know which SON/MDT functions capabilities UE supports. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 3.3 Abbreviations  4.2.X SON parameters  4.2.Y UE-based network performance measurement parameters  5 Optional features without UE radio access capability parameters | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  |  | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  |  | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  |  | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | | |  | | --- | | This Running CR is based on the version 16.0.0 of 38.306 | | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

START OF CHANGES

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non‑specific.

- For a specific reference, subsequent revisions do not apply.

- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[2] 3GPP TS 38.101-1: "NR; User Equipment (UE) radio transmission and reception Part 1: Range 1 Standalone".

[3] 3GPP TS 38.101-2: "NR; User Equipment (UE) radio transmission and reception Part 2: Range 2 Standalone".

[4] 3GPP TS 38.101-3: "NR; User Equipment (UE) radio transmission and reception Part 3: Range 1 and Range 2 Interworking operation with other radios".

[5] 3GPP TS 38.133: "NR; Requirements for support of radio resource management".

[6] 3GPP TS 38.211: "NR; Physical channels and modulation".

[7] 3GPP TS 37.340: "Evolved Universal Terrestrial Radio Access (E-UTRA) and NR Multi-connectivity".

[8] 3GPP TS 38.321: "NR; Medium Access Control (MAC) protocol specification".

[9] 3GPP TS 38.331: "NR; Radio Resource Control (RRC) protocol specification".

[10] 3GPP TS 38.212: "NR; Multiplexing and channel coding".

[11] 3GPP TS 38.213: "NR; Physical layer procedures for control".

[12] 3GPP TS 38.214: "NR; Physical layer procedures for data".

[13] 3GPP TS 38.215: "NR; Physical layer measurements".

[14] 3GPP TS 36.101: "Evolved Universal Terrestrial Radio Access (E-UTRA) radio transmission and reception".

[15] 3GPP TS 36.306: "Evolved Universal Terrestrial Radio Access (E-UTRA) User Equipment (UE) radio access capabilities".

[16] 3GPP TS 38.323: "NR; Packet Data Convergence Protocol (PDCP) specification".

[17] 3GPP TS 36.331: "Evolved Universal Terrestrial Radio Access (E-UTRA) Radio Resource Control (RRC); Protocol Specification".

[18] 3GPP TS 38.101-4: "NR; User Equipment (UE) radio transmission and reception Part 4: Performance requirements".

[19] 3GPP TS 36.213: "Evolved Universal Terrestrial Radio Access (E-UTRA); Physical layer procedures".

[20] 3GPP TS 25.306: "UE radio access capabilities".

[xx] 3GPP TS 38.314: "NR; Layer 2 Measurements".

NEXT CHANGES

## 3.3 Abbreviations

For the purposes of the present document, the abbreviations given in TR 21.905 [1] and the following apply. An abbreviation defined in the present document takes precedence over the definition of the same abbreviation, if any, in TR 21.905 [1].

BC Band Combination

BT Bluetooth

DL Downlink

FS Feature Set

FSPC Feature Set Per Component-carrier

MAC Medium Access Control

MCG Master Cell Group

MN Master Node

MR-DC Multi-RAT Dual Connectivity

PDCP Packet Data Convergence Protocol

RLC Radio Link Control

RTT Round Trip Time

SCG Secondary Cell Group

SDAP Service Data Adaptation Protocol

SN Secondary Node

UL Uplink

WLAN Wireless Local Area Network

NEXT CHANGES

4.2 UE Capability Parameters

### *<Skip unchanged>*4.2.x SON parameters

| **Definitions for parameters** | **Per** | **M** | **FDD-TDD DIFF** | **FR1-FR2 DIFF** |
| --- | --- | --- | --- | --- |
| ***rach-Report***  Indicates whether the UE supports delivery of *rachReport* upon request from the network. | UE | No | No | No |

### 4.2.y UE-based performance measurement parameters

| **Definitions for parameters** | **Per** | **M** | **FDD-TDD DIFF** | **FR1-FR2 DIFF** |
| --- | --- | --- | --- | --- |
| ***barometerMeasReport***  Indicates whether UE supports uncompensated barometeric pressure measurement reporting upon request from the network. | UE | No | No | No |
| ***immMeasBT***  Indicates whether the UE supports Bluetooth measurements in RRC\_CONNECTED state. | UE | No | No | No |
| ***immMeasWLAN***  Indicates whether the UE supports WLAN measurements in RRC\_CONNECTED state. | UE | No | No | No |
| ***loggedMeasBT***  Indicates whether the UE supports Bluetooth measurements in RRC\_IDLE and RRC\_INACTIVE state. | UE | No | No | No |
| ***loggedMeasurements***  Indicates whether the UE supports logged measurements in RRC\_IDLE and RRC\_INACTIVE~~upon request from the network~~. A UE that supports logged measurements shall support both periodical logging and event-triggered logging. The memory size of MDT logged measurements is 64KB. | UE | No | No | No |
| ***loggedMeasWLAN***  Indicates whether the UE supports WLAN measurements in RRC\_IDLE and RRC\_INACTIVE state. | UE | No | No | No |
| ***orientationMeasReport***  Indicates whether the UE supports orientation information reporting upon request from the network. | UE | No | No | No |
| ***speedMeasReport***  Indicates whether the UE supports speed information reporting upon request from the network. | UE | No | No | No |
| ***gnss-Location***  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 or MDT related measurements in RRC\_CONNECTED, RRC\_IDLE and RRC\_INACTIVE. | UE | No | No | No |
| ***ulPDCP-Delay***  Indicates whether the UE supports UL PDCP Packet Average Delay measurement (as specified in TS 38.314 [xx]) and reporting in RRC\_CONNECTED state. | UE | No | No | No |

NEXT CHANGES

# 5 Optional features without UE radio access capability parameters

| **Definitions for feature** |
| --- |
| SU-MIMO Interference Mitigation advanced receiver  - R-ML (reduced complexity ML) receivers with enhanced inter-stream interference suppression for SU-MIMO transmissions with rank 2 with 2 RX antennas  - R-ML (reduced complexity ML) receivers with enhanced inter-stream interference suppression for SU-MIMO transmissions with rank 2, 3, and 4 with 4 RX antennas  UE supporting the feature is required to meet the Enhanced Receiver Type requirements in TS 38.101-4 [18]. |
| Mobility history information storage  It is optional for UE to support the storage of mobility history information and the reporting in *UEInformationResponse* message as specified in TS 38.331 [9]. UE is not required to report this capability. |
| crossRATRLF-Report  Indicates whether the UE supports delivery of EUTRA RLF report to an NR node upon request from the network. UE is not required to report this capability. |
| Radio Link Failure Report for inter-RAT MRO EUTRA  It is optional for UE to include EUTRA CGI and associated TAC as *failedPCellId* in *RLF-Report* upon request from the network as specified in TS 38.331 [9]. |
| Reconnection Report for inter-RAT MRO EUTRA  It is optional for UE to include *eutra-CellIdentity* in *reconnectionCellIdentity* in the *VarRLF-Report* upon UE has radio link failure or handover failure and successfully re-connected to an E-UTRA cell as specified in TS 38.331 [9]. |

END OF CHANGES

Annex (not part of the specification): RAN2 Agreements

## RAN2#108 meeting:

**Agreements:**

Logged MDT:

1 Introduce loggedMeasurements Capability to indicate whether the UE supports logged measurements in RRC\_IDLE and RRC\_INACTIVE. A UE that supports logged measurements shall support both periodical logging and event-triggered logging.

Location related capability:

2 locationReport is mandatory supported without UE capability, i.e. if location information is available, UE shall include location information while performing MDT.

3 Reuse standaloneGNSS-Location capability to indicate whether the UE is equipped with a standalone GNSS receiver, same as LTE.

4 Reuse loggedMeasBT, loggedMeasWLAN, immMeasBT, immMeasWLAN capability to indicate whether UE support Bluetooth and WLAN measurements, same as LTE.

5 Introduce barometerMeasReport, speedMeasReport, orientationMeasReport capabilities to indicate whether UE supports sensor data reporting for MDT.

Packet Delay measurement:

6 Reuse ulPDCP-Delay capability to indicate whether the UE supports UL PDCP Packet delay measurement, same as LTE.

SON related capability:

7 CEF reporting and RLF reporting are mandatory supported without UE capability, same as LTE.

8 Reuse rach-Report capability to indicate whether the UE supports delivery of rachReport upon request from the network, same as LTE.

9 Reuse mobility history information storage capability and no need to report. It is optional for UE to support the storage of mobility history information and the reporting in UEInformationResponse message, same as LTE.

## RAN2#109-e meeting:

**Agreements:**

1 Introduce a capability in 38.306 for cross-RAT RLF report delivery.

## RAN2#109b-e meeting:

**Agreements:**

12 If the RAN2 needs to introduce inter-RAT MRO related LTE RLF report in RRC specification based on the RAN3 LS, RAN2 agrees that the support of inter-RAT MRO report associated LTE RLF reporting as an optional feature without UE capability bit.