**3GPP TSG-RAN WG2 Meeting #131 R2-250xxxx**

**Bengaluru, India, 25 - 29 August 2025**

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| *CR-Form-v12.3* |
| **CHANGE REQUEST** |
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|  | **38.306** | **CR** | **DraftCR** | **rev** | **-** | **Current version:** | **18.6.0** |  |
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| *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:***  | Draft CR for Rel-19 NR NTN UE capabilities |
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| ***Source to WG:*** | Apple |
| ***Source to TSG:*** | R2 |
|  |  |
| ***Work item code:*** | NR\_NTN\_Ph3-Core |  | ***Date:*** | 2025-08-15 |
|  |  |  |  |  |
| ***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 canbe 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)* |
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| ***Reason for change:*** | Introduction of Rel-19 NR NTN UE capabilities. |
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| ***Summary of change:*** | Adding new Rel-19 NR NTN UE capabilities.1) Introduction of MBS broadcast service intended serivice area2) Implementation of ETWS geo-fencing and PWS UE capability for NTN is added to the PWS feature3) SMTC enhancement to support configuring two different SMTC periodicities for RRC connected UE.4) SMTC selection based on reference location associated with each SMTC configuration among SMTC configurations with 2 periodicities and 6 SMTC offsets, for RRC idle/inactive UE.RAN2#130 Agreement:- Implementation of ETWS geo-fencing and PWS UE capability for NTN is added to the PWS feature- the maximum configured SMTCs per frequency for idle/inactive UEs is 6 - We introduce a location-based SMTC selection procedure where each SMTC can be associated with a reference location of the intended neighbor cells that need to be measured by the UE. RAN2#129bis Agreement:- We add a sentence saying that the UE can optionally support intended service area provision for MBS broadcast service via NTN.- No new UE capability is foreseen for regenerative payload.- RAN2 considers to support configuring two different SMTC periodicities (with different offsets) for SMTCs in one frequency layer for idle, inactive and connected mode. - We support configuring more than 4 SMTCs per frequency (e.g. 6) for idle/inactive UEs. It will be up to UE implementation to select which of the SMTCs to consider (send this RAN2 decision to RAN4 for checking) |
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| ***Consequences if not approved:*** | The Rel-19 NR NTN UE capabilities remain absent. |
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| ***Clauses affected:*** | 4.2.9, 5.1, 5.6, 5.10 |
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|  | **Y** | **N** |  |  |
| ***Other specs*** | **X** |  |  Other core specifications  | TS 38.331 CR xxx  |
| ***affected:*** |  | **X** |  Test specifications | TS/TR ... CR ...  |
| ***(show related CRs)*** |  | **X** |  O&M Specifications | TS/TR ... CR ...  |
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| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** | R2-2502512, R2-2504171 |

### 4.2.9 *MeasAndMobParameters*

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| Definitions for parameters | Per | M | FDD-TDD DIFF | FR1-FR2 DIFF |
| ***bestCellChangeReport-r18***Indicates whether the UE supports the sending of the measurement report if the measured first best cell changed as specified in TS 38.331 [9]. | UE | No | No | No |
| ***cellIndividualOffsetPerMeasEvent-r18***Indicates whether the UE supports the configuration of a cell individual offset per measurement event within *reportConfigNR* or *reportConfigInterRAT* as specified in TS 38.331 [9]. | UE | No | No | No |
| ***cli-RSSI-Meas-r16***Indicates whether the UE can perform CLI RSSI measurements as specified in TS 38.215 [13] and supports periodical reporting and measurement event triggering as specified in TS 38.331 [9]. If the UE supports this feature, the UE needs to report *maxNumberCLI-RSSI-r16*. If this parameter is indicated for FR1 and FR2 differently, each indication corresponds to the frequency range of measurement resources to be measured. | UE | No | TDD only | Yes |
| ***cli-SRS-RSRP-Meas-r16***Indicates whether the UE can perform SRS RSRP measurements as specified in TS 38.215 [13] and supports periodical reporting and measurement event triggering based on SRS-RSRP as specified in TS 38.331 [9]. If the UE supports this feature, the UE needs to report *maxNumberCLI-SRS-RSRP-r16* and *maxNumberPerSlotCLI-SRS-RSRP-r16*. If this parameter is indicated for FR1 and FR2 differently, each indication corresponds to the frequency range of measurement resources to be measured. | UE | No | TDD only | Yes |
| ***concurrentMeasCRS-InsideBWP-EUTRA-r18***Indicates whether the UE supports concurrent inter-RAT measurement on EUTRAN cell in non-DSS and PDCCH or PDSCH reception from the serving cell with a different numerology.A UE supporting this feature shall also indicate support of *eutra-NoGapMeasurementInsideBWP-r18* or *eutra-NoGapMeasurementOutsideBWP-r18*. | UE | No | No | FR1 only |
| ***concurrentMeasGap-r17***Indicates whether the UE supports the concurrent measurements gaps as specified in TS 38.133 [5]. The capability signalling comprises the following parameters:- *concurrentPerUE-OnlyMeasGap-r17* indicates whether the UE supports more than 1 per-UE measurement gap configurations (i.e. gap combination configuration id = 2 as specified in TS 38.133 [5]), or*-* *concurrentPerUE-PerFRCombMeasGap-r17* indicates whether the UE supports all concurrent gap combination configurations as specified in TS 38.133 [5] including support of more than 1 per-UE measurement gap configurations. For UE capable of Rel-15 per-FR gap (*independentGapConfig*), this field indicates whether the UE supports more than 1 per-FR gap measurement gap configurations in an FR, or simultaneous 1 per UE measurement gap plus 1 per-FR measurement gap configurations in an FR, or more than 1 per-UE measurement gap configurations (i.e. gap combination configuration id = 2 as specified in TS 38.133 [5]). | UE | No | No | No |
| ***concurrentMeasGapEUTRA-r17***Indicates whether the UE support the configurations of E-UTRAN measurement objectives associated with more than 1 concurrent measurement gaps as specified in TS 38.133 [5]. The UE indicating support of this feature shall also indicate support of *concurrentMeasGap-r17*. | UE | No | No | No |
| ***concurrentMeasGapsNCSG-r18***Indicates whether the UE supports multiple per-UE (or per-FR) measurement gap patterns with at least one per-UE (or per-FR) NCSG as specified in TS 38.133 [5].A UE supporting this feature shall also indicate support of *nr-NeedForGapNCSG-Reporting-r17* and *concurrentMeasGap-r17.* | UE | No | No | No |
| ***concurrentMeasGapsPreMG-r18***Indicates whether the UE supports multiple per-UE (or per-FR) measurement gap patterns with at least one per-UE (or per-FR) Pre-MG as specified in TS 38.133 [5].A UE supporting this feature shall also indicate support of *concurrentMeasGap-r17* and one of *preconfiguredNW-ControlledMeasGap-r17* and *preconfiguredUE-AutonomousMeasGap-r17*. | UE | No | No | No |
| ***condHandoverFDD-TDD-r16***Indicates whether the UE supports conditional handover between FDD and TDD cells. The parameter can only be set if *condHandover-r16* is set for both FDD and TDD. The UE that indicates support of this feature shall also indicate support of *handoverFDD-TDD*. | UE | No | No | No |
| ***condHandoverFR1-FR2-r16***Indicates whether the UE supports conditional handover HO between FR1 and FR2. The parameter can only be set if *condHandover-r16* is set for both FR1 and FR2. The UE that indicates support of this feature shall also indicate support of *handoverFR1-FR2*. | UE | No | No | No |
| ***condHandoverWithSCG-NRDC-r17***Indicates whether the UE supports conditional handover with NR SCG configuration for NR-DC. The UE indicating support of this feature shall also indicate the support of *condHandover-r16* and support of at least one NR-DC band combination. | UE | No | No | No |
| ***csi-RS-RLM***Indicates whether the UE can perform radio link monitoring procedure based on measurement of CSI-RS as specified in TS 38.213 [11] and TS 38.133 [5]. If the UE supports this feature, the UE needs to report *maxNumberResource-CSI-RS-RLM*. This applies only to non-shared spectrum channel access. For shared spectrum channel access, *csi-RS-RLM-r16* applies. | UE | Yes | No | Yes |
| ***csi-RSRP-AndRSRQ-MeasWithSSB***Indicates whether the UE can perform CSI-RSRP and CSI-RSRQ measurement as specified in TS 38.215 [13], where CSI-RS resource is configured with an associated SS/PBCH. If this parameter is indicated for FR1 and FR2 differently, each indication corresponds to the frequency range of measured target cell. If the UE supports this feature, the UE needs to report *maxNumberCSI-RS-RRM-RS-SINR*. This applies only to non-shared spectrum channel access. For shared spectrum channel access, *csi-RS-RLM-r16* applies. | UE | No | No | Yes |
| ***csi-RSRP-AndRSRQ-MeasWithoutSSB***Indicates whether the UE can perform CSI-RSRP and CSI-RSRQ measurement as specified in TS 38.215 [13], where CSI-RS resource is configured for a cell that transmits SS/PBCH block and without an associated SS/PBCH block. If this parameter is indicated for FR1 and FR2 differently, each indication corresponds to the frequency range of measured target cell. If the UE supports this feature, the UE needs to report *maxNumberCSI-RS-RRM-RS-SINR*. This applies only to non-shared spectrum channel access. For shared spectrum channel access, *csi-RSRP-AndRSRQ-MeasWithoutSSB-r16* applies. | UE | No | No | Yes |
| ***csi-SINR-Meas***Indicates whether the UE can perform CSI-SINR measurements based on configured CSI-RS resources as specified in TS 38.215 [13]. If this parameter is indicated for FR1 and FR2 differently, each indication corresponding to the frequency range of measured target cell. If the UE supports this feature, the UE needs to report *maxNumberCSI-RS-RRM-RS-SINR*. This applies only to non-shared spectrum channel access. For shared spectrum channel access, *csi-SINR-Meas-r16* applies. | UE | No | No | Yes |
| ***deriveSSB-IndexFromCellInterNon-NCSG-r17***Indicates whether the UE supports configuration of *deriveSSB-IndexFromCellInter-r17* in *MeasObjectNR*. This field applies to NR SA, MN configured measurements when NR-DC or NE-DC is configured, and SN configured measurements when NR-DC or (NG)EN-DC is configured. UE supporting this feature is required to meet the measurement requirements in TS 38.133 [5]. This field applies only to non-NCSG capable UEs (i.e. UEs not supporting *ncsg-MeasGapNR-Patterns-r17*). | UE | No | No | No |
| ***dynamicCollision-r18***Indicates whether the UE supports RRM requirements for handling dynamic collisions between a Pre-MG and another measurement gap or Pre-MG.A UE supporting this feature shall also indicate support of *concurrentMeasGapsPreMG-r18*. | UE | No | No | No |
| ***enterAndLeaveCellReport-r18***Indicates whether the UE supports the report of cell(s) that meet the event leaving condition and the report of cell(s) that meet the event entering condition as defined in TS 38.331 [9] clause 5.5.4.2. | UE | No | No | No |
| ***eutra-AutonomousGaps-r16***Defines whether the UE supports, upon configuration of *useAutonomousGaps* by the network, acquisition of relevant information from a neighbouring E-UTRA cell by reading the SI of the neighbouring cell using autonomous gap and reporting the acquired information to the network as specified in TS 38.331 [9] when MR-DC is not configured.  | UE | No | No | No |
| ***eutra-AutonomousGaps-NEDC-r16***Defines whether the UE supports, upon configuration of *useAutonomousGaps* by the network, acquisition of relevant information from a neighbouring E-UTRA cell by reading the SI of the neighbouring cell using autonomous gap and reporting the acquired information to the network as specified in TS 38.331 [9] when NE-DC is configured. | UE | No | No | No |
| ***eutra-AutonomousGaps-NRDC-r16***Defines whether the UE supports, upon configuration of *useAutonomousGaps* by the network, acquisition of relevant information from a neighbouring E-UTRA cell by reading the SI of the neighbouring cell using autonomous gap and reporting the acquired information to the network as specified in TS 38.331 [9] when NR-DC is configured. | UE | No | No | No |
| ***eutra-CGI-Reporting***Defines whether the UE supports acquisition of relevant CGI-information from a neighbouring E-UTRA cell by reading the SI of the neighbouring cell and reporting the acquired information to the network as specified in TS 38.331 [9] when the (NG)EN-DC and NE-DC are not configured or, when consistent DRX is configured in NR-DC. The consistent DRX configuration implies that MN and SN have the same DRX cycle and on-duration configured by MN completely contains on-duration configured by SN. It is mandated if the UE supports EUTRA. It is optional for (e)RedCap UEs. | UE | CY | No | No |
| ***eutra-CGI-Reporting-NEDC***Defines whether the UE supports acquisition of relevant information from a neighbouring E-UTRA cell by reading the SI of the neighbouring cell and reporting the acquired information to the network as specified in TS 38.331 [9] when theNE-DCis configured. | UE | No | No | No |
| ***eutra-CGI-Reporting-NRDC***Defines whether the UE supports acquisition of relevant information from a neighbouring E-UTRA cell by reading the SI of the neighbouring cell and reporting the acquired information to the network as specified in TS 38.331 [9] when theNR-DC is configured wherein MN and SN have different DRX cycles, or on-duration configured by MN does not contain on-duration configured by SN if the DRX cycles are the same. | UE | No | No | No |
| ***eutra-MeasEMW-r18***Indicates whether the UE supports configuration of effective measurement window for inter-RAT EUTRAN measurements, including offset, duration and periodicity.The leftmost bit in the bitmap corresponds to EMW pattern #0 and the right most bit in the bitmap corresponds to EMW pattern #5. The bitmap for EMW patterns are defined in TS 38.133 [5].EMW patterns #0 and #1 are mandatory (i.e. the corresponding bits in the bitmap is set to 1) if UE supports EMW feature. Other patterns are optional.A UE supporting this feature shall also indicate support of *eutra-NoGapMeasurementOutsideBWP-r18* or *eutra-NoGapMeasurementInsideBWP-r18*.If a UE does not support this feature, a UE is not allowed to cause scheduling restriction defined in TS 38.133 [5] for *eutra-NoGapMeasurementOutsideBWP-r18* or *eutra-NoGapMeasurementInsideBWP-r18*.NOTE: If UE supports *eutra-NoGapMeasurementOutsideBWP-r18* or *eutra-NoGapMeasurementInsideBWP-r18* and UE requires scheduling restriction, UE should support this feature. | UE | No | No | No |
| ***eutra-NeedForGapNCSG-Reporting-r17***Indicates whether the UE supports reporting of the NCSG and measurement gap requirement information for E-UTRA target bands in the UE response to a network configuration RRC message as specified in TS 38.331 [9]. | UE | No | No | No |
| ***eutra-NoGapMeasurementInsideBWP-r18***Indicates whether the UE supports inter-RAT EUTRAN measurements without gap when CRS is completely contained within UE's active DL BWP. | UE | No | No | FR1 only |
| ***eutra-NoGapMeasurementOutsideBWP-r18***Indicates whether the UE supports inter-RAT EUTRAN measurements outside active DL BWP for nogap-noncsg.A UE supporting this feature shall also indicate support of *eutra-NeedForGapNCSG-Reporting-r17*. | UE | No | No | No |
| ***eventA-MeasAndReport***Indicates whether the UE supports NR measurements and events A triggered reporting as specified in TS 38.331 [9]. This field only applies to SN configured measurement when (NG)EN-DC is configured. For NR SA, MN and SN configured measurement when NR-DC is configured, and MN configured measurement when NE-DC is configured, this feature is mandatory supported. | UE | Yes | Yes | No |
| ***eventB-MeasAndReport***Indicates whether the UE supports EUTRA measurement and event B triggered reporting as specified in TS 38.331 [9]. It is mandated if the UE supports EUTRA. | UE | CY | No | No |
| ***eventD1-MeasReportTrigger-r17***Indicates whether the UE supports location-based triggered measurement reporting (i.e., event D1) as specified in TS 38.331 [9]. It is mandated if the UE supports *locationBasedCondHandover-r17* in any NTN band. It is mandated if the UE supports *locationBasedCondHandoverATG-r18* in any ATG band. | UE | CY | No | No |
| ***eventD2-MeasReportTrigger-r18***Indicates whether the UE supports location-based triggered measurement reporting for an NTN Earth-moving cell (i.e., event D2) as specified in TS 38.331 [9]. It is mandated if the UE supports *locationBasedCondHandoverEMC-r18* in any NTN band. | UE | CY | No | No |
| ***gNB-ID-LengthReporting-r17***Indicates whether the UE supports acquisition and reporting of gNB ID length from a neighbouring intra-frequency or inter-frequency NR cell by reading the SI of the neighbouring cell and reporting the acquired gNB ID length to the network as specified in TS 38.331 [9] when (NG)EN-DC and NE-DC are not configured or, when consistent DRX is configured in NR-DC. The consistent DRX configuration implies that MN and SN have the same DRX cycle and on-duration configured by MN completely contains on-duration configured by SN. It is mandated if UE supports NR CGI reporting (NG)EN-DC and NE-DC are not configured or, when consistent DRX is configured in NR-DC. | UE | CY | No | No |
| ***gNB-ID-LengthReporting-ENDC-r17***Indicates whether the UE supports acquisition and reporting of gNB ID length from a neighbouring intra-frequency or inter-frequency NR cell by reading the SI of the neighbouring cell and reporting the acquired gNB ID length to the network as specified in TS 38.331 [9] when the (NG)EN-DC is configured. It is mandated if UE supports NR CGI reporting when (NG)EN-DC is configured. | UE | CY | No | No |
| ***gNB-ID-LengthReporting-NEDC-r17***Indicates whether the UE supports acquisition and reporting of gNB ID length from a neighbouring intra-frequency or inter-frequency NR cell by reading the SI of the neighbouring cell and reporting the acquired gNB ID length to the network as specified in TS 38.331 [9] when the NE-DC is configured. It is mandated if UE supports NR CGI reporting when NE-DC is configured. | UE | CY | No | No |
| ***gNB-ID-LengthReporting-NRDC-r17***Indicates whether the UE supports acquisition and reporting of gNB ID length from a neighbouring intra-frequency or inter-frequency NR cell by reading the SI of the neighbouring cell and reporting the acquired gNB ID length to the network as specified in TS 38.331 [9] when the NR-DC is configured wherein MN and SN have different DRX cycles, or on-duration configured by MN does not contain on-duration configured by SN if the DRX cycles are the same. It is mandated if UE supports NR CGI reporting when NR-DC is configured. | UE | CY | No | No |
| ***gNB-ID-LengthReporting-NPN-r17***Indicates whether the UE supports acquisition of NPN-relevant gNB ID length from a neighbouring intra-frequency or inter-frequency NR NPN cell by reading the SI of the neighbouring cell and reporting the acquired gNB ID length to the network as specified in TS 38.331 [9]. It is mandated if UE supports NPN CGI reporting. | UE | CY | No | No |
| ***handoverLTE-5GC, handoverLTE-5GC-r17***Indicates whether the UE supports HO to EUTRA connected to 5GC. It is mandated if the UE supports EUTRA connected to 5GC. | UE | CY | Yes | Yes(Incl FR2-2 DIFF) |
| ***handoverFDD-TDD***Indicates whether the UE supports HO between FDD and TDD. It is mandated if the UE supports both FDD and TDD. This field only applies to NR SA/NR-DC/NE-DC (e.g. PCell handover). For PSCell change when (NG)EN-DC/NR-DC is configured, this feature is mandatory supported. UEs supporting this shall indicate support of *handoverInterF* for both FDD and TDD. | UE | Yes | No | No |
| ***handoverFR1-FR2***Indicates whether the UE supports HO between FR1 and FR2. Support is mandatory for the UE supporting both FR1 and FR2. This field only applies to NR SA/NR-DC/NE-DC (e.g. PCell handover). For PSCell change when (NG)EN-DC/NR-DC is configured, this feature is mandatory supported. UEs supporting this shall indicate support of *handoverInterF* for both FR1 and FR2. | UE | Yes | No | No |
| ***handoverFR1-FR2-2-r17***Indicates whether the UE supports HO between FR1 and FR2-2. This field only applies to NR SA/NR-DC/NE-DC (e.g. PCell handover) and PSCell change when (NG)EN-DC/NR-DC is configured. UEs supporting this shall indicate support of *handoverInterF* for both FR1 and FR2-2. | UE | No | No | No |
| ***handoverFR2-1-FR2-2-r17***Indicates whether the UE supports HO between FR2-1 and FR2-2. This field only applies to NR SA/NR-DC/NE-DC (e.g. PCell handover) and PSCell change when (NG)EN-DC/NR-DC is configured. UEs supporting this shall indicate support of *handoverInterF* for both FR2-1 and FR2-2. | UE | No | No | No |
| ***handoverInterF, handoverInterF-r17***Indicates whether the UE supports inter-frequency HO. It indicates the support for inter-frequency HO from the corresponding duplex mode and from frequency range indicated to be supported as described in Annex B. This field only applies to NR SA/NR-DC/NE-DC (e.g. PCell handover). For PSCell change when (NG)EN-DC/NR-DC is configured, this feature is mandatory supported. | UE | Yes | Yes | Yes(Incl FR2-2 DIFF) |
| ***handoverLTE-EPC, handoverLTE-EPC-r17***Indicates whether the UE supports HO to EUTRA connected to EPC. It is mandated if the UE supports EUTRA connected to EPC. | UE | CY | Yes | Yes(Incl FR2-2 DIFF) |
| ***idleInactiveNR-MeasReport-r16, idleInactiveNR-MeasReport-r17***Indicates whether the UE supports configuration of NR SSB measurements in RRC\_IDLE/RRC\_INACTIVE and reporting of the corresponding results upon network request as specified in TS 38.331 [9]. If this parameter is indicated for FR1 and FR2 differently, each indication corresponds to the frequency range of measured target cell. | UE | No | No | Yes(Incl FR2-2 DIFF) |
| ***idleInactiveNR-MeasBeamReport-r16***Indicates whether the UE supports beam level measurements in RRC\_IDLE/RRC\_INACTIVE and reporting of the corresponding beam measurement results upon network request as specified in TS 38.331 [9]. A UE supports this feature shall also support *idleInactiveNR-MeasReport-r16*. If this parameter is indicated for FR1 and FR2 differently, each indication corresponds to the frequency range of measured target cell. | UE | No | No | Yes |
| ***idleInactiveEUTRA-MeasReport-r16***Indicates whether the UE supports configuration of E-UTRA measurements in RRC\_IDLE/RRC\_INACTIVE and reporting of the corresponding results upon network request as specified in TS 38.331 [9]. | UE | No | No | No |
| ***idleInactive-ValidityArea-r16***Indicates whether the UE supports configuration of a validity area for NR measurements in RRC\_IDLE/RRC\_INACTIVE as specified in TS 38.331 [9]. | UE | No | No | No |
| ***increasedNumberofCSIRSPerMO-r16***Indicates support of up to 192 CSI-RS resource for L3 mobility configuration per measurement object configured with *associatedSSB*. If this parameter is indicated for FR1 and FR2 differently, each indication corresponds to the frequency range of the cells to be measured within *MeasObjectNR*. | UE | No | No | Yes |
| ***independentGapConfig***This field indicates whether the UE supports two independent measurement gap configurations for FR1 and FR2 specified in clause 9.1.2 of TS 38.133 [5]. The field also indicates whether the UE supports the FR2 inter-RAT measurement without gaps when (NG)EN-DC is not configured. | UE | No | No | No |
| ***independentGapConfig-maxCC-r17***This field indicates whether the UE supports two independent measurement gap configurations for FR1 and FR2 as specified in clause 9.1.2 of TS 38.133 [5] while the number of configured serving cells is less than or equal to the indicated number.The capability signalling includes the following parameters:- *fr1-Only-r17* indicates the maximum number of configured serving cells when only NR FR1 serving cells are configured- *fr2-Only-r17* indicates the maximum number of configured serving cells when only NR FR2 serving cells are configured- *fr1-AndFR2-r17* indicates the maximum number of configured serving cells when both NR FR1 and NR FR2 serving cells are configuredThe absence of the *fr1-Only-r17* or *fr2-Only-r17* field indicates that per-FR gap is not supported when only FR1 or FR2 serving cells are configured. Absence of the *fr1-AndFR2* field indicates that per-FR-gap is not supported when both FR1 and FR2 serving cells are configured. Value "1" for *fr1-Only-r17* or *fr2-Only-r17* indicates support of the per-FR gap when only PCell is configured (no additional CC). Value "2" for *fr1-Only-r17* or *fr2-Only-r17* indicates support of the per-FR gap when PCell and 1 additional CC are configured, and so on. Value "1" or "2" for *fr1-AndFR2-r17* indicates the support of per-FR gap when PCell and "1" additional CC are configured.UE indicating support of this feature in *UE-NR-Capability* shall not indicate support of *independentGapConfig* in *UE-NR-Capability*. | UE | No | No | No |
| ***independentGapConfigPRS-r17***Indicates whether the UE supports two independent measurement gap configurations for FR1 and FR2 for PRS measurement, as specified in clause 9.1.2 of TS 38.133 [5]. | UE | No | No | No |
| ***intraAndInterF-MeasAndReport***Indicates whether the UE supports NR intra-frequency and inter-frequency measurements and at least periodical reporting. This field only applies to SN configured measurement when (NG)EN-DC is configured. For NR SA, MN and SN configured measurement when NR-DC is configured, and MN configured measurement when NE-DC is configured, this feature is mandatory supported. | UE | Yes | Yes | No |
| ***intraF-NeighMeasForSCellWithoutSSB***Indicates whether the UE supports the configuration of *servingCellMO* for SCell that does not transmit SS/PBCH block. A UE supporting this feature shall also support NR intra-frequency measurements on neighbour cells based on *servingCellMO* associated with SCell that does not transmit SS/PBCH block.A UE supporting this feature shall also indicate support of *scellWithoutSSB* or *scellWithoutSSB-InterBandCA-r18* or both. | UE | No | No | FR1 only |
| ***interFrequencyMeas-NoGap-r16***Indicates whether the UE can perform inter-frequency SSB based measurements without measurement gaps if the SSB is completely contained in the active BWP of the UE as specified in TS 38.133 [5]. If this parameter is indicated for FR1 and FR2 differently, each indication corresponds to the frequency range of cells to be measured. | UE | No | No | Yes |
| ***interSatMeas-r17***Indicates whether the UE supports inter-satellite measurement as specified in TS 38.331 [9]. It is mandatory if the UE supports *nonTerrestrialNetwork-r17*. | UE | CY | No | No |
| ***l3-MeasUnknownSCellActivation-r18***Indicates whether the UE supports reporting valid L3 measurement results triggered by the unknown SCell activation commandUE is required to meet the shortened SCell activation delay requirement in TS 38.133 [5] if the feature is supported, including single SCell activation, single PUCCH SCell activation, and multiple SCell activation with/without PUCCH SCell. | UE | No | No | No |
| ***ltm-FastUE-Processing-r18***Indicates the reduced TLTM\_processing delay of the UE during cell switch.The capability signalling includes the following parameters:- *fr1-r18* indicates the reduced TLTM\_processing for cell switch from FR1 to FR1.- *fr2-r18* indicates the reduced TLTM\_processing for cell switch from FR2 to FR2.- *fr1-AndFR2-r18* indicates the reduced TLTM\_processing for cell switch from FR1/FR2 to FR2/FR1. | UE | No | No | No |
| ***ltm-InterFreq-r18***Indicates UE supports inter-frequency MCG LTM on all the bands where the UE indicates support of *ltm-MCG-IntraFreq-r18* or inter-frequency SCG LTM on all the bands where the UE indicates support of *ltm-SCG-IntraFreq-r18* respectively.A UE supporting this feature shall also indicate support of *ltm-MCG-IntraFreq-r18* or *ltm-SCG-IntraFreq-r18.* | UE | No | No | No |
| ***ltm-interFreqL1-OnlyInBC-r18***When included, for each BC in which the UE indicates support of *interFreqL1-MeasConfig-r18*, the UE only supports inter-frequency L1-RSRP measurement and reporting based on SSB(s) of LTM candidate cell(s) that are inside the BC. When not included, the description in *interFreqL1-MeasConfig-r18* is applicable.A UE supporting this feature shall also indicate support of *interFreqL1-MeasConfig-r18*. | UE | No | No | No |
| ***ltm-InterFreqMeasGap-r18***Indicates whether the UE supports SSB based inter-frequency L1-RSRP measurements with measurement gaps for LTM.A UE supporting this feature shall also indicate support of *interFreqL1-MeasConfig-r18*. | UE | No | No | No |
| ***ltm-MCG-NRDC-r18***Indicates whether the UE supports LTM for MCG with RACH with NR-DC configured as defined in TS 38.331 [9] and TS 38.321 [8]. UE indicating support for this feature shall also indicate support of *ltm-MCG-IntraFreq-r18.* | UE | No | No | No |
| ***ltm-MCG-NRDC-Release-r18***Indicates whether the UE supports LTM for MCG with the release of NR-DC configuration as part of LTM execution when LTM cell switch command MAC CE is received. UE indicating support for this feature shall also indicate support of *ltm-MCG-IntraFreq-r18.* | UE | No | No | No |
| ***ltm-RACH-LessCG-r18***Indicates whether the UE supports RACH-less LTM with configured grant for MCG LTM if the UE indicates support of *ltm-MCG-IntraFreq-r18* or for SCG LTM if the UE indicates support of *ltm-SCG-IntraFreq-r18* respectively.UE indicating support for this feature shall also indicate support of either *ltm-BeamIndicationJointTCI-r18* or *ltm-BeamIndicationSeparateTCI-r18* for at least one band and either *ta-IndicationCellSwitch-r18* or *ue-TA-Measurement-r18*. | UE | No | No | No |
| ***ltm-RACH-LessDG-r18***Indicates whether the UE supports RACH-Less LTM with dynamic grant, for MCG LTM if the UE indicates support of *ltm-MCG-IntraFreq-r18* or for SCG LTM if the UE indicates support of *ltm-SCG-IntraFreq-r18* respectively.UE indicating support for this feature shall also indicate support of either *ltm-BeamIndicationJointTCI-r18* or *ltm-BeamIndicationSeparateTCI-r18* for at least one band and TA indication in *ta-IndicationCellSwitch-r18* or *ue-TA-Measurement-r18*. | UE | No | No | No |
| ***ltm-Recovery-r18***Indicates whether the UE supports recovery procedure for MCG LTM execution when the selected cell in RRC re-establishment procedure is a LTM candidate as specified in TS 38.331 [9].UE indicating support for this feature shall also indicate support of *ltm-MCG-IntraFreq-r18* for at least one band. | UE | No | No | No |
| ***ltm-ReferenceConfig-r18***Indicates whether UE supports a reference configuration for LTM.UE indicating support for this feature shall also indicate support of either *ltm-MCG-IntraFreq-r18* or *ltm-SCG-IntraFreq-r18* for at least one band. | UE | No | No | No |
| ***maxNumberCLI-RSSI-r16***Defines the maximum number of CLI-RSSI measurement resources for CLI RSSI measurement. If the UE supports *cli-RSSI-Meas-r16*, the UE shall report this capability. | UE | CY | TDD only | No |
| ***maxNumberCLI-SRS-RSRP-r16***Defines the maximum number of SRS-RSRP measurement resources for SRS-RSRP measurement. If the UE supports *cli-SRS-RSRP-Meas-r16*, the UE shall report this capability.NOTE 1: A slot is based on minimum SCS among active BWPs across all CCs configured for SRS-RSRP measurement.NOTE 2: A SRS resource occasion that overlaps with the slot is counted as one measurement resource in the slot. | UE | CY | TDD only | No |
| ***maxNumberCSI-RS-RRM-RS-SINR***Defines the maximum number of CSI-RS resources for RRM and RS-SINR measurement across all measurement frequencies per slot. UE indicating support of this feature shall also indicate support of *csi-RSRP-AndRSRQ-MeasWithSSB*, *csi-RSRP-AndRSRQ-MeasWithoutSSB* or *csi-SINR-Meas*. If UE supports any of *csi-RSRP-AndRSRQ-MeasWithSSB*, *csi-RSRP-AndRSRQ-MeasWithoutSSB*, and *csi-SINR-Meas*, UE shall report this capability.NOTE: A slot is based on minimum SCS among all measurement frequencies configured for RRM and RS-SINR measurement. | UE | CY | No | No |
| ***maxNumberPerSlotCLI-SRS-RSRP-r16***Defines the maximum number of SRS-RSRP measurement resources per slot for SRS-RSRP measurement. If the UE supports *cli-SRS-RSRP-Meas-r16*, the UE shall report this capability. | UE | CY | TDD only | No |
| ***maxNumberResource-CSI-RS-RLM***Defines the maximum number of CSI-RS resources within a slot per spCell for CSI-RS based RLM. UE indicating support of this feature shall also indicate support of *csi-RS-RLM* or *ssb-AndCSI-RS-RLM*, If UE supports any of *csi-RS-RLM* and *ssb-AndCSI-RS-RLM*, UE shall report this capability. | UE | CY | No | Yes |
| ***measSequenceConfig-r18***Indicates whether the UE supports configuration of *measSequence-r18* in *MeasObjectNR* and *MeasObjectEUTRA* for recommended sequence for intra/inter-RAT intra/inter-frequency measurement. | UE | No | No | No |
| ***ncsg-MeasGapNR-Patterns-r17***Indicates whether the UE supports NR-only NCSG patterns. The left most bit in the bitmap corresponds to NCSG pattern #0 and the right most bit in the bitmap corresponds to NCSG pattern #23. A bit in the bitmap is set to 1 if the corresponding pattern is supported by the UE. NCSG patterns #0 to #23 are as specified in TS 38.133 [5].NCSG patterns #2 and #3 are mandatory (i.e. the corresponding bits in the bitmap is set to 1) if the UE includes this field. NCSG patterns #17 and #18 are mandatory (i.e. the corresponding bits in the bitmap is set to 1) if UE includes this field and supports a FR2 band. UEs supporting this shall indicate support of *nr-NeedForGapNCSG-Reporting-r17*. | UE | No | No | No |
| ***ncsg-MeasGapPatterns-r17***Indicates whether the UE supports NCSG patterns. The left most bit in the bitmap corresponds to NCSG pattern #0 and the right most bit in the bitmap corresponds to NCSG pattern #23. A bit in the bitmap is set to 1 if the corresponding pattern is supported by the UE. NCSG patterns #0 to #23 are as specified in TS 38.133 [5].NCSG patterns #0 and #1 are mandatory (i.e. the corresponding bits in the bitmap is set to 1) if the UE includes this field. NCSG patterns #13 and #14 are mandatory (i.e. the corresponding bits in the bitmap is set to 1) if UE supports *ncsg-MeasGapPerFR-r17* or if the UE is NCSG capable and supports FR2 band in standalone mode. UEs supporting this shall indicate support of *nr-NeedForGapNCSG-Reporting-r17* or *eutra-NeedForGapNCSG-Reporting-r17*. | UE | No | No | No |
| ***ncsg-MeasGapPerFR-r17***Indicates whether the UE supports per-FR NCSG. UEs supporting this shall indicate support of *nr-NeedForGapNCSG-Reporting-r17*. | UE | No | No | No |
| ***ncsg-SymbolLevelScheduleRestrictionInter-r17***Indicates whether the UE supports performing measurement with NCSG based on flag *deriveSSB-IndexFromCell-inter* and meeting the following requirements that the scheduling restriction in FR2 serving cell during NCSG ML is on SSB symbol level. UEs supporting this shall indicate support of *nr-NeedForGapNCSG-Reporting-r17*. | UE | No | No | FR2 only |
| ***nr-AutonomousGaps-r16***Defines whether the UE supports, upon configuration of *useAutonomousGaps* by the network, acquisition of relevant information from a neighbouring NR cell by reading the SI of the neighbouring cell using autonomous gap and reporting the acquired information to the network as specified in TS 38.331 [9] when MR-DC is not configured. If this parameter is indicated for FR1 and FR2 differently, each indication corresponds to the frequency range of measured target cell. | UE | No | No | Yes |
| ***nr-AutonomousGaps-ENDC-r16***Defines whether the UE supports, upon configuration of *useAutonomousGaps* by the network, acquisition of relevant information from a neighbouring NR cell by reading the SI of the neighbouring cell using autonomous gap and reporting the acquired information to the network as specified in TS 38.331 [9] when (NG)EN-DC is configured. If this parameter is indicated for FR1 and FR2 differently, each indication corresponds to the frequency range of measured target cell. | UE | No | No | Yes |
| ***nr-AutonomousGaps-NEDC-r16***Defines whether the UE supports, upon configuration of *useAutonomousGaps* by the network, acquisition of relevant information from a neighbouring NR cell by reading the SI of the neighbouring cell using autonomous gap and reporting the acquired information to the network as specified in TS 38.331 [9] when NE-DC is configured. If this parameter is indicated for FR1 and FR2 differently, each indication corresponds to the frequency range of measured target cell. | UE | No | No | Yes |
| ***nr-AutonomousGaps-NRDC-r16***Defines whether the UE supports, upon configuration of *useAutonomousGaps* by the network, acquisition of relevant information from a neighbouring NR cell by reading the SI of the neighbouring cell using autonomous gap and reporting the acquired information to the network as specified in TS 38.331 [9] when NR-DC is configured. If this parameter is indicated for FR1 and FR2 differently, each indication corresponds to the frequency range of measured target cell. | UE | No | No | Yes |
| ***nr-CGI-Reporting***Defines whether the UE supports acquisition of relevant CGI-information from a neighbouring intra-frequency or inter-frequency NR cell by reading the SI of the neighbouring cell and reporting the acquired information to the network as specified in TS 38.331 [9] when (NG)EN-DC and NE-DC are not configured or, when consistent DRX is configured in NR-DC. The consistent DRX configuration implies that MN and SN have the same DRX cycle and on-duration configured by MN completely contains on-duration configured by SN. It is optional for (e)RedCap UEs. | UE | CY | No | No |
| ***nr-CGI-Reporting-ENDC***Defines whether the UE supports acquisition of relevant CGI-information from a neighbouring intra-frequency or inter-frequency NR cell by reading the SI of the neighbouring cell and reporting the acquired information to the network as specified in TS 38.331 [9] when the (NG)EN-DC is configured. | UE | Yes | No | No |
| ***nr-CGI-Reporting-NEDC***Defines whether the UE supports acquisition of relevant information from a neighbouring intra-frequency or inter-frequency NR cell by reading the SI of the neighbouring cell and reporting the acquired information to the network as specified in TS 38.331 [9] when the NE-DC is configured. | UE | Yes | No | No |
| ***nr-CGI-Reporting-NPN-r16***Defines whether the UE supports acquisition of NPN-relevant CGI-information from a neighbouring intra-frequency or inter-frequency NR NPN cell by reading the SI of the neighbouring cell and reporting the acquired information to the network as specified in TS 38.331 [9]. If UE supports NPN, UE shall report this capability. It is optional for (e)RedCap UEs. | UE | CY | No | No |
| ***nr-CGI-Reporting-NRDC***Defines whether the UE supports acquisition of relevant information from a neighbouring intra-frequency or inter-frequency NR cell by reading the SI of the neighbouring cell and reporting the acquired information to the network as specified in TS 38.331 [9] when the NR-DC is configured wherein MN and SN have different DRX cycles, or on-duration configured by MN does not contain on-duration configured by SN if the DRX cycles are the same. | UE | Yes | No | No |
| ***nr-NeedForGapNCSG-Reporting-r17***Indicates whether the UE supports reporting of the NCSG and measurement gap requirement information for SSB based measurement in the UE response to a network configuration RRC message as specified in TS 38.331 [9]. | UE | No | No | No |
| ***nr-NeedForGap-Reporting-r16***Indicates whether the UE supports reporting the measurement gap requirement information for NR target in the UE response to a network configuration RRC message. | UE | No | No | No |
| ***nr-NeedForInterruptionReport-r18***Indicates whether the UE supports reporting the interruption requirement information for SSB based measurement towards NR target without gap in the UE response to a network configuration RRC message. The UE supporting this feature shall also indicate support of *nr-NeedForGap-Reporting-r16*. | UE | No | No | No |
| ***ntn-NeighbourCellInfoSupport-r18***Indicates whether the UE supports configuration of *ntn-NeighbourCellInfo-r18* in *MeasObjectNR* for dedicated ephemeris. A UE supporting this feature shall also indicate the support of *nonTerrestrialNetwork-r17*. | UE | No | No | No |
| ***parallelMeasurementGap-r17***Indicates whether the UE supports 2 parallel measurement gaps for NTN SSB based RRM measurements. If a UE does not include this field but includes *nonTerrestrialNetwork-r17*, the UE supports 1 measurement gap for NTN SSB based RRM measurements. If this parameter is indicated, a UE shall also support that two parallel measurement gaps with the same gap type can be associated to one frequency layer. A UE supporting this feature shall also indicate the support of *nonTerrestrialNetwork-r17*. | UE | No | FDD only | FR1 only |
| ***parallelSMTC-r17***Indicates whether the UE supports NTN SSB based RRM measurements on target cells belonging to 4 SMTC-s on a single frequency carrier. If a UE does not include this field but includes *nonTerrestrialNetwork-r17*, the UE supports NTN SSB based RRM measurements on target cells belonging to 2 SMTC-s on a single frequency carrier. | UE | No | FDD only | FR1 only |
| ***parallelSMTC-enh-r19***Indicates whether the UE supports NTN SSB based RRM measurements on target cells with two SMTC periodicities on a single frequency carrier.  | UE | No | FDD only | FR1 only |
| ***periodicEUTRA-MeasAndReport***Indicates whether the UE supports periodic EUTRA measurement and reporting. It is mandated if the UE supports EUTRA. | UE | CY | No | No |
| ***pcellT312-r16***Indicates whether the UE supports T312 based fast failure recovery for PCell. | UE | No | No | No |
| ***preconfiguredUE-AutonomousMeasGap-r17***Indicates whether the UE supports the preconfigured measurement gap with UE-autonomous mechanism for activation and deactivation as specified in TS 38.133 [5]. | UE | No | No | No |
| ***preconfiguredNW-ControlledMeasGap-r17***Indicates whether the UE supports the preconfigured measurement gap with network-controlled mechanism for activation and deactivation as specified in TS 38.133 [5]. | UE | No | No | No |
| ***rach-LessHandoverInterFreq-r18***Indicates whether the UE supports inter-frequency RACH-less handover. The UE supports inter-frequency RACH-less handover on all the bands where the UE indicates support for *rach-LessHandoverCG-r18* or *rach-LessHandoverDG-r18*.If the UE does not support *rach-LessHandoverInterFreq-r18*but indicates support of *rach-LessHandoverCG-r18 or rach-LessHandoverDG-r18*, the UE only supports intra-frequency RACH-less handover with configured grant or dynamic grant, respectively, on the corresponding bands. | UE | No | No | No |
| ***reportAddNeighMeasForPeriodic-r16***Defines whether the UE supports periodic reporting of best neighbour cells per serving frequency, as defined in TS 38.331 [9]. It is optional for (e)RedCap UEs. | UE | CY | No | No |
| ***secondBestCellChangeReport-r18***Indicates whether the UE supports the sending of the measurement report if more than one of two best cells changed as specified in TS 38.331 [9]. | UE | No | No | No |
| ***serviceLinkPropDelayDiffReporting-r17***Indicates whether the UE supports the reporting of service link propagation delay difference between serving cell and neighbour cell(s). A UE supporting this feature shall also indicate the support of *nonTerrestrialNetwork-r17*. | UE | No | No | No |
| ***sftd-MeasPSCell***Indicates whether the UE supports SFTD measurements between the PCell and a configured PSCell. If this capability is included in UE-MRDC-Capability, it indicates that the UE supports SFTD measurement between PCell and PSCell in (NG)EN-DC. If this capability is included in UE-NR-Capability, it indicates that the UE supports SFTD measurement between PCell and PSCell in NR-DC. | UE | No | Yes | No |
| ***sftd-MeasPSCell-NEDC***Indicates whether the UE supports SFTD measurement between the NR PCell and a configured E-UTRA PSCell in NE-DC. | UE | No | Yes | No |
| ***sftd-MeasNR-Cell***Indicates whether the SFTD measurement with and without measurement gaps between the EUTRA PCell and the NR cells is supported by the UE which is capable of EN-DC/NGEN-DC when EN-DC/NGEN-DC is not configured. The SFTD measurement without gaps can be used when the UE supports at least one EN-DC band combination consisting of the set of the current E-UTRA serving frequencies and the NR frequency where SFTD measurement is configured. In UE-NR-Capability, this field is not used, and UE does not include the field. | UE | No | Yes | No |
| ***sftd-MeasNR-Neigh***Indicates whether the inter-frequency SFTD measurement with and without measurement gaps between the NR PCell and inter-frequency NR neighbour cells is supported by the UE when MR-DC is not configured. The SFTD measurement without gaps can be used when the UE supports at least one DC or CA band combination consisting of the set of the current NR serving frequencies and the NR frequency where SFTD measurement is configured.  | UE | No | Yes | No |
| ***sftd-MeasNR-Neigh-DRX***Indicates whether the inter-frequency SFTD measurement using DRX off period between the NR PCell and the inter-frequency NR neighbour cells is supported by the UE when MR-DC is not configured. | UE | No | Yes | No |
| ***shortMeasInterval-r18***Indicates whether the UE supports using SSB periodicity instead of SMTC periodicity for the measurement interval during unknown SCell activation when the SMTC is only configured in measurement object for enhanced unknown SCell activation requirement and performing L1-RSRP measurement in non-DRX mode even DRX is configured during unknown SCell activation.UE is required to meet the shortened SCell activation delay requirement in TS 38.133 [5] if the feature is supported. | UE | No | No | No |
| ***simultaneousRxDataSSB-DiffNumerology***Indicates whether the UE supports concurrent intra-frequency measurement on serving cell or neighbouring cell and PDCCH or PDSCH reception from the serving cell with a different numerology as defined in clause 8 and 9 of TS 38.133 [5]. | UE | No | No | Yes |
| ***simultaneousRxDataSSB-DiffNumerology-Inter-r16***Indicates whether the UE supports concurrent SSB based inter-frequency measurement without measurement gap on neighbouring cell and PDCCH or PDSCH reception from the serving cell with a different numerology as defined in clause 8 and 9 of TS 38.133 [5]. UE indicates support of this indicates support of *interFrequencyMeas-NoGap-r16*. If this parameter is indicated for FR1 and FR2 differently, each indication corresponds to the frequency range where the SSB and PDCCH/PDSCH are received. | UE | No | No | Yes |
| ***ssb-RLM***Indicates whether the UE can perform radio link monitoring procedure based on measurement of SS/PBCH block as specified in TS 38.213 [11] and TS 38.133 [5]. This field shall be set to *supported*. This applies only to non-shared spectrum channel access. For shared spectrum channel access, *ssb-RLM-DynamicChAccess-r16* or *ssb-RLM-Semi-StaticChAccess-r16* applies. | UE | Yes | No | No |
| ***ssb-AndCSI-RS-RLM***Indicates whether the UE can perform radio link monitoring procedure based on measurement of SS/PBCH block and CSI-RS as specified in TS 38.213 [11] and TS 38.133 [5]. UE indicating support of this feature shall also indicate support of *ssb-RLM* and *csi-RS-RLM*. If the UE supports this feature, the UE needs to report *maxNumberResource-CSI-RS-RLM*. This applies only to non-shared spectrum channel access. For shared spectrum channel access, *ssb-AndCSI-RS-RLM-r16* applies. | UE | No | No | No |
| ***ss-SINR-Meas***Indicates whether the UE can perform SS-SINR measurement as specified in TS 38.215 [13]. If this parameter is indicated for FR1 and FR2 differently, each indication corresponds to the frequency range of measured target cell. This applies only to non-shared spectrum channel access. For shared spectrum channel access, *ss-SINR-Meas-r16* applies. | UE | No | No | Yes |
| ***supportedGapPattern***Indicates measurement gap pattern(s) optionally supported by the UE for NR SA, for NR-DC, for NE-DC and for independent measurement gap configuration on FR2 in (NG)EN-DC. The leading / leftmost bit (bit 0) corresponds to the gap pattern 2, the next bit corresponds to the gap pattern 3, as specified in TS 38.133 [5] and so on. The UE shall set the bits corresponding to the measurement gap pattern 13, 14, 17, 18 and 19 to 1 if the UE is an NR standalone capable UE that supports a band in FR2 or if the UE is an (NG)EN-DC capable UE that supports *independentGapConfig* and supports a band in FR2. | UE | CY | No | No |
| ***supportedGapPattern-r16***Indicates measurement gap pattern(s) optionally supported by the UE for NR SA, for NR-DC for PRS measurement and NR/E-UTRA RRM measurement. The leading / leftmost bit (bit 0) corresponds to the gap pattern 24, the next bit corresponds to the gap pattern 25, as specified in TS 38.133 [5]. The applicability of the gap patterns 24 and 25 is defined in clause 9.1.2 of TS 38.133 [5]. A UE that indicates support of this capability shall indicate support of *NR-DL-PRS-ProcessingCapability-r16* defined in TS 37.355 [22]. | UE | No | No | No |
| ***supportedGapPattern-NRonly-r16***Indicates measurement gap pattern(s) optionally supported by the UE for NR SA and NR-DC when the frequencies to be measured within this measurement gap are all NR frequencies. The leading / leftmost bit (bit 0) corresponds to the gap pattern 2, the next bit corresponds to the gap pattern 3 and so on. The UE shall set the bits corresponding to the measurement gap pattern 2, 3 and 11 to 1. | UE | FD | No | No |
| ***supportedGapPattern-NRonly-NEDC-r16***Indicates whether the UE supports gap patterns 2, 3 and 11 in NE-DC when the frequencies to be measured within this measurement gap are all NR frequencies. | UE | No | No | No |

Editor’s Note: SMTC enhancements in connected mode for NTN DL coverage enhancements are pending RAN4 confirmation: "RAN2 considers to introduce signalling support for different SMTC periodicity and offset in the same frequency layer, for both idle and connected mode. Ask RAN4 for confirmation”.

Editor’s Note: Applicability to FR1/FR2 is FFS.

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# 5 Optional features without UE radio access capability parameters

## 5.1 PWS features

| Definitions for feature |
| --- |
| **CMAS**It is optional for UE to support CMAS reception as specified in TS 38.331 [9]. It is optional for a CMAS-capable UE to support Geofencing information (*warningAreaCoordinates*) as specified in TS 38.331 [9]. |
| **ETWS**It is optional for UE to support ETWS reception as specified in TS 38.331 [9]. |
| **ETWS geofencing in NTN**It is optional for an ETWS-capable NTN UE to support Geofencing information (warningAreaCoordinates) as specified in TS 38.331 [9]. |
| **KPAS**It is optional for UE to support Korean Public Alert System (KPAS) reception as specified in TS 38.331 [9]. KPAS uses the same AS mechanisms as defined for CMAS. Therefore a KPAS-capable UE shall support all behaviour that is included in TS 38.331 [9] and TS 38.304 [21] for a CMAS-capable UE. |
| **EU-Alert**It is optional for UE to support EU-Alert reception as specified in TS 38.331 [9]. EU-Alert uses the same AS mechanisms as defined for CMAS. Therefore a EU-Alert-capable UE shall support all behaviour that is included in TS 38.331 [9] and TS 38.304 [21] for a CMAS-capable UE. |

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## 5.6 RRM measurement features

| Definitions for feature |
| --- |
| **Cell reselection from TN to NTN**It is optional for the UE in RRC\_IDLE or in RRC\_INACTIVE in a TN cell to support the measurement of NTN neighbour cells for cell reselection based on the information acquired in SIB19 as specified in TS 38.304 [21] andin TS 38.133 [5]. This feature is only applicable if the UE supports *nonTerrestrialNetwork-r17*. |
| **Enhanced inter-frequency IDLE/INACTIVE measurements for HST FR2**It is optional for UE to support RRM requirement for inter-frequency measurements in idle and inactive mode to support FR2 high speed up to 350 km/h, as specified in TS 38.133 [5].A UE supporting this feature shall also indicate support of PC6 in *ue-PowerClass-v1700*. |
| **Enhanced RRM requirements for measurements in IDLE and INACTIVE modes**It is optional for UE to support enhanced RRM requirements for measurements for NTN bands (FR1 only and FDD only) in RRC\_IDLE/RRC\_INACTIVE as specified in TS 38.133 [5]. If UE does not support this feature, other NTN measurement requirements (as specified in TS 38.133 [5], clause 4.2C.2 for RRC\_IDLE and clause 5.1C.2 for RRC\_INACTIVE) are applied. |
| **Enhanced RRM requirements for measurements in IDLE and INACTIVE modes for ATG**It is optional for the UE in RRC\_IDLE/RRC\_INACTIVE to support the enhanced inter-frequency cell re-selection requirements for ATG (as specified in TS 38.133 [5], Table 4.2D.2.4-2). If UE does not support this feature, other measurement requirements as specified in TS 38.133 [5], Table 4.2D.2.4-1 are applied. |
| **Enhanced RRM requirements for measurements in IDLE and INACTIVE modes for FR2-NTN**It is optional for UE to support enhanced RRM requirements for measurements for FDD FR2-NTN bands in RRC\_IDLE/RRC\_INACTIVE as specified in TS 38.133 [5]. If UE does not support this feature, other NTN measurement requirements (as specified in TS 38.133 [5], clause 4.2C.2 for RRC\_IDLE and clause 5.1C.2 for RRC\_INACTIVE) are applied. |
| **High speed inter-frequency IDLE/INACTIVE measurements**It is optional for UE to support high speed inter-frequency measurements in RRC\_IDLE/RRC\_INACTIVE as specified in TS 38.133 [5]. |
| **Location-based measurement initiation**It is optional for the UE in RRC\_IDLE/RRC\_INACTIVE to support location based RRM measurements of neighbour cells in NTN (quasi-)Earth fixed cell as specified in TS 38.304 [21]. |
| **Location-based measurement initiation for NTN Earth-moving cell**It is optional for the UE in RRC\_IDLE/RRC\_INACTIVE to support location based RRM measurements of neighbour cells in NTN Earth-moving cell as specified in TS 38.304 [21]. |
| **Location based SMTC selection for RRC\_IDLE/RRC\_INACTIVE**It is optional for the UE in RRC\_IDLE/RRC\_INACTIVE to support SMTC selection based on associated location for each SMTC in NTN. |
| **Relaxed measurement**It is optional for UE to support relaxed RRM measurements of neighbour cells in RRC\_IDLE/RRC\_INACTIVE as specified in TS 38.304 [21]. |
| **Rel-17 relaxed measurement for RRC\_IDLE/RRC\_INACTIVE**It is optional for (e)RedCap UE to support Rel-17 relaxed RRM measurements of neighbour cells in RRC\_IDLE/RRC\_INACTIVE as specified in TS 38.304 [21]. |
| **Skipping TN measurements**It is optional for the UE in RRC\_IDLE/RRC\_INACTIVE to support skipping the neighbour cell measurements for TN neighbour cells in an area where there is no TN network coverage as specified in TS 38.304 [21]. |
| **SMTC adjustment for RRC\_IDLE/RRC\_INACTIVE**It is optional for the UE in RRC\_IDLE/RRC\_INACTIVE to support SMTC adjustment based on propagation delay difference between serving and neighbour cells. |
| **Time-based measurement initiation**It is optional for the UE in RRC\_IDLE/RRC\_INACTIVE to support time based RRM measurements of neighbour cells in NTN quasi-Earth fixed cell as specified in TS 38.304 [21]. |
| **Time-based measurement initiation for NTN Earth-moving cell**It is optional for the UE in RRC\_IDLE/RRC\_INACTIVE to support time based RRM measurements of neighbour cells in NTN Earth-moving cell as specified in TS 38.304 [21]. |

Editor’s Note: SMTC enhancements in idle mode for NTN DL coverage enhancements are pending RAN4 confirmation: "RAN2 considers to introduce signalling support for different SMTC periodicity and offset in the same frequency layer, for both idle and connected mode. Ask RAN4 for confirmation”.

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## 5.10 MBS features

| Definitions for feature |
| --- |
| **Broadcast reception**It is optional for UE to support broadcast reception as specified in TS 38.331 [9]. A UE that supports the feature shall also support:- Group-common PDCCH/PDSCH for broadcast with CRC scrambled by MCCH-RNTI;- Group-common PDCCH/PDSCH for broadcast with CRC scrambled by G-RNTI(s) for MTCH;- CFR configuration for broadcast;- CORESET and common search space for broadcast;- DCI format 4\_0 with CRC scrambled with G-RNTI/MCCH-RNTI for broadcast;- Inter-slot TDM between unicast PDSCH and MCCH group-common PDSCH or MTCH group-common PDSCH, or between MCCH group-common PDSCH and MTCH group-common PDSCH, or among unicast PDSCH and MCCH group-common PDSCH and MTCH group-common PDSCH in different slots;- MCCH change notification indication via DCI;- RRC configured slot-level repetition up to 8 for MTCH;- One G-RNTI per UE is supported for broadcast reception;- Support of FDMed MCCH and PBCH;- Support of up to 64QAM for FR1/FR2;- 4 broadcast MRBs as the minimum number;- PDCP 12 bits SN;- ROHC with profiles 0x0000, 0x0001 and 0x0002;- 4 ROHC context sessions;- RLC UM with 6 bits SN;- RLC UM with 12 bits SN;- DRX with long DRX cycle for MBS broadcast as specified in TS 38.321 [8].An (e)RedCap UE supporting Broadcast reception also supports CFR and MCCH configuration for (e)RedCap UE.An NTN UE supporting Broadcast reception may optionally support the intended service area(s) associated with a broadcast service. |

# Annex: RAN2 capability UE feature list - NTN

### 8.2.x NR\_NTN\_Ph3-Core

Table 8.2.x-1: Layer-2 and Layer-3 feature list for NR\_NTN\_Ph3-Core

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **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** |
| x. NR\_NTN\_Ph3-Core | x-1 | Intended service area for MBS broadcast service | Indicates whether the UE supports intended service areas(s) associated with broadcast services via NTN.  | 33-1 | n/a | n/a | n/a | n/a |  | Optional without capability signaling |
| x. NR\_NTN\_Ph3-Core | x-2 | ETWS geofencing | Indicates whether the UE supports geofencing for ETWS messages. | n/a | n/a | n/a | n/a | n/a |  | Optional without capability signaling |
| x. NR\_NTN\_Ph3-Core | x-3 | SMTC enhancement with two periodicities | Indicates whether the UE supports measurement on target cells belonging to two SMTC periodicities on a single frequency carrier. | n/a | *parallelSMTC-enh-r19* | *MeasAndMobParametersCommon* | FDD only | FR1 only |  | Optional with capability signaling |
| x. NR\_NTN\_Ph3-Core | x-4 | Location based SMTC selection | Indicates whether the UE supports SMTC(s) selection based on associated reference location to each SMTC in RRC idle/inactive. | n/a | n/a | n/a | FDD only | FR1 only |  | Optional without capability signaling |