**3GPP TSG-RAN WG2 Meeting #127 *R2-24xxxxx***

**Maastricht, Netherlands, Aug 19th – 23rd, 2024**

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| --- |
| *CR-Form-v12.3* |
| **CHANGE REQUEST** |
|  |
|  | **38.331** | **CR** | **-** | **rev** | **-** | **Current version:** | **18.2.0** |  |
|  |
| *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 |  |

|  |
| --- |
|  |
| ***Title:***  | UE Capabilities for dedicated NTN assistance information and for acquiring SIB19 |
|  |  |
| ***Source to WG:*** | Intel Corporation |
| ***Source to TSG:*** | R2 |
|  |  |
| ***Work item code:*** | NR\_NTN\_enh-Core |  | ***Date:*** | 2024-08-28 |
|  |  |  |  |  |
| ***Category:*** | **-** |  | ***Release:*** | Rel-18 |
|  | *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)* |
|  |  |
| ***Reason for change:*** | 1. UE needs to be able to indicate whether it supports configuration of *ntn-NeighbourCellInfo-r18* in *MeasObjectNR* for dedicated ephemeris.
2. UE needs to be able to indicate whether it supports reception of SIB19 in TN cell for UEs in connected mode to acquire satellite assistance information for NTN access.
 |
|  |  |
| ***Summary of change:*** | 1. Define *ntn-NeighbourCellInfoSupport-r18* UE capability in *MeasAndMobParametersCommon*.
2. Define *sib19-Support-r18* UE capability in *UE-NR-Capability*.
 |
|  |  |
| ***Consequences if not approved:*** | For 1), network is not aware when UE supports configuration of dedicated ephemeris and epoch time in measurement object configuration for connected mode RRM measurements.For 2), network does not know when a Rel-18 NTN capable UE is able to acquire SIB19 in TN cell in connected mode. |
|  |  |
| ***Clauses affected:*** | 6.3.3 |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** | **X** |  |  Other core specifications  | TS/TR ..38.306. CR ...  |
| ***affected:*** |  | **x** |  Test specifications | TS/TR ... CR ...  |
| ***(show related CRs)*** |  | **x** |  O&M Specifications | TS/TR ... CR ...  |
|  |  |
| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** |  |

***START OF CHANGE***

### 6.3.3 UE capability information elements

*<<OMMITTED TEXT>>*

– *MeasAndMobParameters*

The IE *MeasAndMobParameters* is used to convey UE capabilities related to measurements for radio resource management (RRM), radio link monitoring (RLM) and mobility (e.g. handover).

***MeasAndMobParameters* information element**

-- ASN1START

-- TAG-MEASANDMOBPARAMETERS-START

MeasAndMobParameters ::= SEQUENCE {

 measAndMobParametersCommon MeasAndMobParametersCommon OPTIONAL,

 measAndMobParametersXDD-Diff MeasAndMobParametersXDD-Diff OPTIONAL,

 measAndMobParametersFRX-Diff MeasAndMobParametersFRX-Diff OPTIONAL

}

MeasAndMobParameters-v1700 ::= SEQUENCE {

 measAndMobParametersFR2-2-r17 MeasAndMobParametersFR2-2-r17 OPTIONAL

}

MeasAndMobParametersCommon ::= SEQUENCE {

 supportedGapPattern BIT STRING (SIZE (22)) OPTIONAL,

 ssb-RLM ENUMERATED {supported} OPTIONAL,

 ssb-AndCSI-RS-RLM ENUMERATED {supported} OPTIONAL,

 ...,

 [[

 eventB-MeasAndReport ENUMERATED {supported} OPTIONAL,

 handoverFDD-TDD ENUMERATED {supported} OPTIONAL,

 eutra-CGI-Reporting ENUMERATED {supported} OPTIONAL,

 nr-CGI-Reporting ENUMERATED {supported} OPTIONAL

 ]],

 [[

 independentGapConfig ENUMERATED {supported} OPTIONAL,

 periodicEUTRA-MeasAndReport ENUMERATED {supported} OPTIONAL,

 handoverFR1-FR2 ENUMERATED {supported} OPTIONAL,

 maxNumberCSI-RS-RRM-RS-SINR ENUMERATED {n4, n8, n16, n32, n64, n96} OPTIONAL

 ]],

 [[

 nr-CGI-Reporting-ENDC ENUMERATED {supported} OPTIONAL

 ]],

 [[

 eutra-CGI-Reporting-NEDC ENUMERATED {supported} OPTIONAL,

 eutra-CGI-Reporting-NRDC ENUMERATED {supported} OPTIONAL,

 nr-CGI-Reporting-NEDC ENUMERATED {supported} OPTIONAL,

 nr-CGI-Reporting-NRDC ENUMERATED {supported} OPTIONAL

 ]],

 [[

 reportAddNeighMeasForPeriodic-r16 ENUMERATED {supported} OPTIONAL,

 condHandoverParametersCommon-r16 SEQUENCE {

 condHandoverFDD-TDD-r16 ENUMERATED {supported} OPTIONAL,

 condHandoverFR1-FR2-r16 ENUMERATED {supported} OPTIONAL

 } OPTIONAL,

 nr-NeedForGap-Reporting-r16 ENUMERATED {supported} OPTIONAL,

 supportedGapPattern-NRonly-r16 BIT STRING (SIZE (10)) OPTIONAL,

 supportedGapPattern-NRonly-NEDC-r16 ENUMERATED {supported} OPTIONAL,

 maxNumberCLI-RSSI-r16 ENUMERATED {n8, n16, n32, n64} OPTIONAL,

 maxNumberCLI-SRS-RSRP-r16 ENUMERATED {n4, n8, n16, n32} OPTIONAL,

 maxNumberPerSlotCLI-SRS-RSRP-r16 ENUMERATED {n2, n4, n8} OPTIONAL,

 mfbi-IAB-r16 ENUMERATED {supported} OPTIONAL,

 dummy ENUMERATED {supported} OPTIONAL,

 nr-CGI-Reporting-NPN-r16 ENUMERATED {supported} OPTIONAL,

 idleInactiveEUTRA-MeasReport-r16 ENUMERATED {supported} OPTIONAL,

 idleInactive-ValidityArea-r16 ENUMERATED {supported} OPTIONAL,

 eutra-AutonomousGaps-r16 ENUMERATED {supported} OPTIONAL,

 eutra-AutonomousGaps-NEDC-r16 ENUMERATED {supported} OPTIONAL,

 eutra-AutonomousGaps-NRDC-r16 ENUMERATED {supported} OPTIONAL,

 pcellT312-r16 ENUMERATED {supported} OPTIONAL,

 supportedGapPattern-r16 BIT STRING (SIZE (2)) OPTIONAL

 ]],

 [[

 -- R4 19-2 Concurrent measurement gaps

 concurrentMeasGap-r17 CHOICE {

 concurrentPerUE-OnlyMeasGap-r17 ENUMERATED {supported},

 concurrentPerUE-PerFRCombMeasGap-r17 ENUMERATED {supported}

 } OPTIONAL,

 -- R4 19-1 Network controlled small gap (NCSG)

 nr-NeedForGapNCSG-Reporting-r17 ENUMERATED {supported} OPTIONAL,

 eutra-NeedForGapNCSG-Reporting-r17 ENUMERATED {supported} OPTIONAL,

 -- R4 19-1-1 per FR Network controlled small gap (NCSG)

 ncsg-MeasGapPerFR-r17 ENUMERATED {supported} OPTIONAL,

 -- R4 19-1-2 Network controlled small gap (NCSG) supported patterns

 ncsg-MeasGapPatterns-r17 BIT STRING (SIZE(24)) OPTIONAL,

 -- R4 19-1-3 Network controlled small gap (NCSG) supported NR-only patterns

 ncsg-MeasGapNR-Patterns-r17 BIT STRING (SIZE(24)) OPTIONAL,

 -- R4 19-3-2 pre-configured measurement gap

 preconfiguredUE-AutonomousMeasGap-r17 ENUMERATED {supported} OPTIONAL,

 -- R4 19-3-1 pre-configured measurement gap

 preconfiguredNW-ControlledMeasGap-r17 ENUMERATED {supported} OPTIONAL,

 handoverFR1-FR2-2-r17 ENUMERATED {supported} OPTIONAL,

 handoverFR2-1-FR2-2-r17 ENUMERATED {supported} OPTIONAL,

 -- RAN4 14-1: per-FR MG for PRS measurement

 independentGapConfigPRS-r17 ENUMERATED {supported} OPTIONAL,

 rrm-RelaxationRRC-ConnectedRedCap-r17 ENUMERATED {supported} OPTIONAL,

 -- R4 25-3: Parallel measurements with multiple measurement gaps

 parallelMeasurementGap-r17 ENUMERATED {n2} OPTIONAL,

 condHandoverWithSCG-NRDC-r17 ENUMERATED {supported} OPTIONAL,

 gNB-ID-LengthReporting-r17 ENUMERATED {supported} OPTIONAL,

 gNB-ID-LengthReporting-ENDC-r17 ENUMERATED {supported} OPTIONAL,

 gNB-ID-LengthReporting-NEDC-r17 ENUMERATED {supported} OPTIONAL,

 gNB-ID-LengthReporting-NRDC-r17 ENUMERATED {supported} OPTIONAL,

 gNB-ID-LengthReporting-NPN-r17 ENUMERATED {supported} OPTIONAL

 ]],

 [[

 -- R4 25-1: Parallel measurements on multiple SMTC-s for a single frequency carrier

 parallelSMTC-r17 ENUMERATED {n4} OPTIONAL,

 -- R4 19-2-1 Concurrent measurement gaps for EUTRA

 concurrentMeasGapEUTRA-r17 ENUMERATED {supported} OPTIONAL,

 serviceLinkPropDelayDiffReporting-r17 ENUMERATED {supported} OPTIONAL,

 -- R4 19-1-4 Network controlled small gap (NCSG) performing measurement based on flag deriveSSB-IndexFromCellInter

 ncsg-SymbolLevelScheduleRestrictionInter-r17 ENUMERATED {supported} OPTIONAL

 ]],

 [[

 eventD1-MeasReportTrigger-r17 ENUMERATED {supported} OPTIONAL,

 independentGapConfig-maxCC-r17 SEQUENCE {

 fr1-Only-r17 INTEGER (1..32) OPTIONAL,

 fr2-Only-r17 INTEGER (1..32) OPTIONAL,

 fr1-AndFR2-r17 INTEGER (1..32) OPTIONAL

 } OPTIONAL

 ]],

 [[

 interSatMeas-r17 ENUMERATED {supported} OPTIONAL,

 deriveSSB-IndexFromCellInterNon-NCSG-r17 ENUMERATED {supported} OPTIONAL

 ]],

 [[

 -- R4 31-1 Enhanced L3 measurement reporting for unknown SCell activation if the valid L3 measurement results are available

 l3-MeasUnknownSCellActivation-r18 ENUMERATED {supported} OPTIONAL,

 -- R4 31-3 Shorter measurement interval for unknown SCell activation

 shortMeasInterval-r18 ENUMERATED {supported} OPTIONAL,

 nr-NeedForInterruptionReport-r18 ENUMERATED {supported} OPTIONAL,

 measSequenceConfig-r18 ENUMERATED {supported} OPTIONAL,

 cellIndividualOffsetPerMeasEvent-r18 ENUMERATED {supported} OPTIONAL,

 eventD2-MeasReportTrigger-r18 ENUMERATED {supported} OPTIONAL,

 -- R4 32-1: Concurrent gaps with Pre-MG in a FR

 concurrentMeasGapsPreMG-r18 ENUMERATED {supported} OPTIONAL,

 -- R4 32-2: Support for dynamic collisions

 dynamicCollision-r18 ENUMERATED {supported} OPTIONAL,

 -- R4 32-3: Concurrent gaps with NCSG in a FR

 concurrentMeasGapsNCSG-r18 ENUMERATED {supported} OPTIONAL,

 -- R4 32-4: Inter-RAT EUTRAN measurements without gap and outside active DL BWP

 eutra-NoGapMeasurementOutsideBWP-r18 ENUMERATED {supported} OPTIONAL,

 -- R4 32-5: Inter-RAT EUTRAN measurement without gap and within active DL BWP

 eutra-NoGapMeasurementInsideBWP-r18 ENUMERATED {supported} OPTIONAL,

 -- R4 32-6: Effective measurement window for inter-RAT EUTRAN measurements

 eutra-MeasEMW-r18 BIT STRING (SIZE(6)) OPTIONAL,

 -- R4 32-7: Simultaneous reception of NR data and EUTRAN CRS with different numerology

 concurrentMeasCRS-InsideBWP-EUTRA-r18 ENUMERATED {supported} OPTIONAL,

 -- R4 39-2a: SSB based inter-frequency L1-RSRP measurements with measurement gaps

 ltm-InterFreqMeasGap-r18 ENUMERATED {supported} OPTIONAL,

 -- R4 39-7: Faster UE processing time during cell switch

 ltm-FastUE-Processing-r18 SEQUENCE {

 fr1-r18 ENUMERATED {ms10, ms15},

 fr2-r18 ENUMERATED {ms10, ms15},

 fr1-AndFR2-r18 ENUMERATED {ms20, ms30}

 } OPTIONAL,

 rach-LessHandoverInterFreq-r18 ENUMERATED {supported} OPTIONAL,

 enterAndLeaveCellReport-r18 ENUMERATED {supported} OPTIONAL,

 bestCellChangeReport-r18 ENUMERATED {supported} OPTIONAL,

 secondBestCellChangeReport-r18 ENUMERATED {supported} OPTIONAL

 ]],

 [[

 ntn-NeighbourCellInfoSupport-r18 ENUMERATED {supported} OPTIONAL

 ]]

}

MeasAndMobParametersXDD-Diff ::= SEQUENCE {

 intraAndInterF-MeasAndReport ENUMERATED {supported} OPTIONAL,

 eventA-MeasAndReport ENUMERATED {supported} OPTIONAL,

 ...,

 [[

 handoverInterF ENUMERATED {supported} OPTIONAL,

 handoverLTE-EPC ENUMERATED {supported} OPTIONAL,

 handoverLTE-5GC ENUMERATED {supported} OPTIONAL

 ]],

 [[

 sftd-MeasNR-Neigh ENUMERATED {supported} OPTIONAL,

 sftd-MeasNR-Neigh-DRX ENUMERATED {supported} OPTIONAL

 ]],

 [[

 dummy ENUMERATED {supported} OPTIONAL

 ]]

}

MeasAndMobParametersFRX-Diff ::= SEQUENCE {

 ss-SINR-Meas ENUMERATED {supported} OPTIONAL,

 csi-RSRP-AndRSRQ-MeasWithSSB ENUMERATED {supported} OPTIONAL,

 csi-RSRP-AndRSRQ-MeasWithoutSSB ENUMERATED {supported} OPTIONAL,

 csi-SINR-Meas ENUMERATED {supported} OPTIONAL,

 csi-RS-RLM ENUMERATED {supported} OPTIONAL,

 ...,

 [[

 handoverInterF ENUMERATED {supported} OPTIONAL,

 handoverLTE-EPC ENUMERATED {supported} OPTIONAL,

 handoverLTE-5GC ENUMERATED {supported} OPTIONAL

 ]],

 [[

 maxNumberResource-CSI-RS-RLM ENUMERATED {n2, n4, n6, n8} OPTIONAL

 ]],

 [[

 simultaneousRxDataSSB-DiffNumerology ENUMERATED {supported} OPTIONAL

 ]],

 [[

 nr-AutonomousGaps-r16 ENUMERATED {supported} OPTIONAL,

 nr-AutonomousGaps-ENDC-r16 ENUMERATED {supported} OPTIONAL,

 nr-AutonomousGaps-NEDC-r16 ENUMERATED {supported} OPTIONAL,

 nr-AutonomousGaps-NRDC-r16 ENUMERATED {supported} OPTIONAL,

 dummy ENUMERATED {supported} OPTIONAL,

 cli-RSSI-Meas-r16 ENUMERATED {supported} OPTIONAL,

 cli-SRS-RSRP-Meas-r16 ENUMERATED {supported} OPTIONAL,

 interFrequencyMeas-NoGap-r16 ENUMERATED {supported} OPTIONAL,

 simultaneousRxDataSSB-DiffNumerology-Inter-r16 ENUMERATED {supported} OPTIONAL,

 idleInactiveNR-MeasReport-r16 ENUMERATED {supported} OPTIONAL,

 -- R4 6-2: Support of beam level Early Measurement Reporting

 idleInactiveNR-MeasBeamReport-r16 ENUMERATED {supported} OPTIONAL

 ]],

 [[

 increasedNumberofCSIRSPerMO-r16 ENUMERATED {supported} OPTIONAL

 ]]

}

MeasAndMobParametersFR2-2-r17 ::= SEQUENCE {

 handoverInterF-r17 ENUMERATED {supported} OPTIONAL,

 handoverLTE-EPC-r17 ENUMERATED {supported} OPTIONAL,

 handoverLTE-5GC-r17 ENUMERATED {supported} OPTIONAL,

 idleInactiveNR-MeasReport-r17 ENUMERATED {supported} OPTIONAL,

...

}

-- TAG-MEASANDMOBPARAMETERS-STOP

-- ASN1STOP

*<<OMMITTED TEXT>>*

***NEXT CHANGE***

#### – *UE-NR-Capability*

The IE *UE-NR-Capability* is used to convey the NR UE Radio Access Capability Parameters, see TS 38.306 [26].

*UE-NR-Capability* information element

-- ASN1START

-- TAG-UE-NR-CAPABILITY-START

UE-NR-Capability ::= SEQUENCE {

 accessStratumRelease AccessStratumRelease,

 pdcp-Parameters PDCP-Parameters,

 rlc-Parameters RLC-Parameters OPTIONAL,

 mac-Parameters MAC-Parameters OPTIONAL,

 phy-Parameters Phy-Parameters,

 rf-Parameters RF-Parameters,

 measAndMobParameters MeasAndMobParameters OPTIONAL,

 fdd-Add-UE-NR-Capabilities UE-NR-CapabilityAddXDD-Mode OPTIONAL,

 tdd-Add-UE-NR-Capabilities UE-NR-CapabilityAddXDD-Mode OPTIONAL,

 fr1-Add-UE-NR-Capabilities UE-NR-CapabilityAddFRX-Mode OPTIONAL,

 fr2-Add-UE-NR-Capabilities UE-NR-CapabilityAddFRX-Mode OPTIONAL,

 featureSets FeatureSets OPTIONAL,

 featureSetCombinations SEQUENCE (SIZE (1..maxFeatureSetCombinations)) OF FeatureSetCombination OPTIONAL,

 lateNonCriticalExtension OCTET STRING (CONTAINING UE-NR-Capability-v15c0) OPTIONAL,

 nonCriticalExtension UE-NR-Capability-v1530 OPTIONAL

}

-- Regular non-critical Rel-15 extensions:

UE-NR-Capability-v1530 ::= SEQUENCE {

 fdd-Add-UE-NR-Capabilities-v1530 UE-NR-CapabilityAddXDD-Mode-v1530 OPTIONAL,

 tdd-Add-UE-NR-Capabilities-v1530 UE-NR-CapabilityAddXDD-Mode-v1530 OPTIONAL,

 dummy ENUMERATED {supported} OPTIONAL,

 interRAT-Parameters InterRAT-Parameters OPTIONAL,

 inactiveState ENUMERATED {supported} OPTIONAL,

 delayBudgetReporting ENUMERATED {supported} OPTIONAL,

 nonCriticalExtension UE-NR-Capability-v1540 OPTIONAL

}

UE-NR-Capability-v1540 ::= SEQUENCE {

 sdap-Parameters SDAP-Parameters OPTIONAL,

 overheatingInd ENUMERATED {supported} OPTIONAL,

 ims-Parameters IMS-Parameters OPTIONAL,

 fr1-Add-UE-NR-Capabilities-v1540 UE-NR-CapabilityAddFRX-Mode-v1540 OPTIONAL,

 fr2-Add-UE-NR-Capabilities-v1540 UE-NR-CapabilityAddFRX-Mode-v1540 OPTIONAL,

 fr1-fr2-Add-UE-NR-Capabilities UE-NR-CapabilityAddFRX-Mode OPTIONAL,

 nonCriticalExtension UE-NR-Capability-v1550 OPTIONAL

}

UE-NR-Capability-v1550 ::= SEQUENCE {

 reducedCP-Latency ENUMERATED {supported} OPTIONAL,

 nonCriticalExtension UE-NR-Capability-v1560 OPTIONAL

}

UE-NR-Capability-v1560 ::= SEQUENCE {

 nrdc-Parameters NRDC-Parameters OPTIONAL,

 receivedFilters OCTET STRING (CONTAINING UECapabilityEnquiry-v1560-IEs) OPTIONAL,

 nonCriticalExtension UE-NR-Capability-v1570 OPTIONAL

}

UE-NR-Capability-v1570 ::= SEQUENCE {

 nrdc-Parameters-v1570 NRDC-Parameters-v1570 OPTIONAL,

 nonCriticalExtension UE-NR-Capability-v1610 OPTIONAL

}

-- Late non-critical Rel-15 extensions:

UE-NR-Capability-v15c0 ::= SEQUENCE {

 nrdc-Parameters-v15c0 NRDC-Parameters-v15c0 OPTIONAL,

 partialFR2-FallbackRX-Req ENUMERATED {true} OPTIONAL,

 nonCriticalExtension UE-NR-Capability-v15g0 OPTIONAL

}

UE-NR-Capability-v15g0 ::= SEQUENCE {

 rf-Parameters-v15g0 RF-Parameters-v15g0 OPTIONAL,

 nonCriticalExtension UE-NR-Capability-v15j0 OPTIONAL

}

UE-NR-Capability-v15j0 ::= SEQUENCE {

 -- Following field is only for REL-15 late non-critical extensions

 lateNonCriticalExtension OCTET STRING OPTIONAL,

 nonCriticalExtension UE-NR-Capability-v16a0 OPTIONAL

}

-- Regular non-critical Rel-16 extensions:

UE-NR-Capability-v1610 ::= SEQUENCE {

 inDeviceCoexInd-r16 ENUMERATED {supported} OPTIONAL,

 dl-DedicatedMessageSegmentation-r16 ENUMERATED {supported} OPTIONAL,

 nrdc-Parameters-v1610 NRDC-Parameters-v1610 OPTIONAL,

 powSav-Parameters-r16 PowSav-Parameters-r16 OPTIONAL,

 fr1-Add-UE-NR-Capabilities-v1610 UE-NR-CapabilityAddFRX-Mode-v1610 OPTIONAL,

 fr2-Add-UE-NR-Capabilities-v1610 UE-NR-CapabilityAddFRX-Mode-v1610 OPTIONAL,

 bh-RLF-Indication-r16 ENUMERATED {supported} OPTIONAL,

 directSN-AdditionFirstRRC-IAB-r16 ENUMERATED {supported} OPTIONAL,

 bap-Parameters-r16 BAP-Parameters-r16 OPTIONAL,

 referenceTimeProvision-r16 ENUMERATED {supported} OPTIONAL,

 sidelinkParameters-r16 SidelinkParameters-r16 OPTIONAL,

 highSpeedParameters-r16 HighSpeedParameters-r16 OPTIONAL,

 mac-Parameters-v1610 MAC-Parameters-v1610 OPTIONAL,

 mcgRLF-RecoveryViaSCG-r16 ENUMERATED {supported} OPTIONAL,

 resumeWithStoredMCG-SCells-r16 ENUMERATED {supported} OPTIONAL,

 resumeWithStoredSCG-r16 ENUMERATED {supported} OPTIONAL,

 resumeWithSCG-Config-r16 ENUMERATED {supported} OPTIONAL,

 ue-BasedPerfMeas-Parameters-r16 UE-BasedPerfMeas-Parameters-r16 OPTIONAL,

 son-Parameters-r16 SON-Parameters-r16 OPTIONAL,

 onDemandSIB-Connected-r16 ENUMERATED {supported} OPTIONAL,

 nonCriticalExtension UE-NR-Capability-v1640 OPTIONAL

}

UE-NR-Capability-v1640 ::= SEQUENCE {

 redirectAtResumeByNAS-r16 ENUMERATED {supported} OPTIONAL,

 phy-ParametersSharedSpectrumChAccess-r16 Phy-ParametersSharedSpectrumChAccess-r16 OPTIONAL,

 nonCriticalExtension UE-NR-Capability-v1650 OPTIONAL

}

UE-NR-Capability-v1650 ::= SEQUENCE {

 mpsPriorityIndication-r16 ENUMERATED {supported} OPTIONAL,

 highSpeedParameters-v1650 HighSpeedParameters-v1650 OPTIONAL,

 nonCriticalExtension UE-NR-Capability-v1690 OPTIONAL

}

UE-NR-Capability-v1690 ::= SEQUENCE {

 ul-RRC-Segmentation-r16 ENUMERATED {supported} OPTIONAL,

 nonCriticalExtension UE-NR-Capability-v1700 OPTIONAL

}

-- Late non-critical extensions from Rel-16 onwards:

UE-NR-Capability-v16a0 ::= SEQUENCE {

 phy-Parameters-v16a0 Phy-Parameters-v16a0 OPTIONAL,

 rf-Parameters-v16a0 RF-Parameters-v16a0 OPTIONAL,

 nonCriticalExtension UE-NR-Capability-v16c0 OPTIONAL

}

UE-NR-Capability-v16c0 ::= SEQUENCE {

 rf-Parameters-v16c0 RF-Parameters-v16c0 OPTIONAL,

 nonCriticalExtension UE-NR-Capability-v16d0 OPTIONAL

}

UE-NR-Capability-v16d0 ::= SEQUENCE {

 featureSets-v16d0 FeatureSets-v16d0 OPTIONAL,

 nonCriticalExtension SEQUENCE {} OPTIONAL

}

-- Regular non-critical Rel-17 extensions:

UE-NR-Capability-v1700 ::= SEQUENCE {

 inactiveStatePO-Determination-r17 ENUMERATED {supported} OPTIONAL,

 highSpeedParameters-v1700 HighSpeedParameters-v1700 OPTIONAL,

 powSav-Parameters-v1700 PowSav-Parameters-v1700 OPTIONAL,

 mac-Parameters-v1700 MAC-Parameters-v1700 OPTIONAL,

 ims-Parameters-v1700 IMS-Parameters-v1700 OPTIONAL,

 measAndMobParameters-v1700 MeasAndMobParameters-v1700,

 appLayerMeasParameters-r17 AppLayerMeasParameters-r17 OPTIONAL,

 redCapParameters-r17 RedCapParameters-r17 OPTIONAL,

 ra-SDT-r17 ENUMERATED {supported} OPTIONAL,

 srb-SDT-r17 ENUMERATED {supported} OPTIONAL,

 gNB-SideRTT-BasedPDC-r17 ENUMERATED {supported} OPTIONAL,

 bh-RLF-DetectionRecovery-Indication-r17 ENUMERATED {supported} OPTIONAL,

 nrdc-Parameters-v1700 NRDC-Parameters-v1700 OPTIONAL,

 bap-Parameters-v1700 BAP-Parameters-v1700 OPTIONAL,

 musim-GapPreference-r17 ENUMERATED {supported} OPTIONAL,

 musimLeaveConnected-r17 ENUMERATED {supported} OPTIONAL,

 mbs-Parameters-r17 MBS-Parameters-r17,

 nonTerrestrialNetwork-r17 ENUMERATED {supported} OPTIONAL,

 ntn-ScenarioSupport-r17 ENUMERATED {gso, ngso} OPTIONAL,

 sliceInfoforCellReselection-r17 ENUMERATED {supported} OPTIONAL,

 ue-RadioPagingInfo-r17 UE-RadioPagingInfo-r17 OPTIONAL,

 -- R4 17-2 UL gap pattern for Tx power management

 ul-GapFR2-Pattern-r17 BIT STRING (SIZE (4)) OPTIONAL,

 ntn-Parameters-r17 NTN-Parameters-r17 OPTIONAL,

 nonCriticalExtension UE-NR-Capability-v1740 OPTIONAL

}

UE-NR-Capability-v1740 ::= SEQUENCE {

 redCapParameters-v1740 RedCapParameters-v1740,

 nonCriticalExtension UE-NR-Capability-v1750 OPTIONAL

}

UE-NR-Capability-v1750 ::= SEQUENCE {

 crossCarrierSchedulingConfigurationRelease-r17 ENUMERATED {supported} OPTIONAL,

 nonCriticalExtension UE-NR-Capability-v1800 OPTIONAL

}

-- Regular non-critical Rel-18 extensions:

UE-NR-Capability-v1800 ::= SEQUENCE {

 airToGroundNetwork-r18 ENUMERATED {supported} OPTIONAL,

 eRedCapParameters-r18 ERedCapParameters-r18 OPTIONAL,

 ncr-Parameters-r18 NCR-Parameters-r18 OPTIONAL,

 softSatelliteSwitchResyncNTN-r18 ENUMERATED {supported} OPTIONAL,

 hardSatelliteSwitchResyncNTN-r18 ENUMERATED {supported} OPTIONAL,

 mt-SDT-r18 ENUMERATED {supported} OPTIONAL,

 mt-SDT-NTN-r18 ENUMERATED {supported} OPTIONAL,

 inDeviceCoexIndAutonomousDenial-r18 ENUMERATED {supported} OPTIONAL,

 inDeviceCoexIndFDM-r18 ENUMERATED {supported} OPTIONAL,

 inDeviceCoexIndTDM-r18 ENUMERATED {supported} OPTIONAL,

 musim-GapPriorityPreference-r18 ENUMERATED {supported} OPTIONAL,

 musim-CapabilityRestriction-r18 ENUMERATED {supported} OPTIONAL,

 multiRx-FR2-Preference-r18 ENUMERATED {supported} OPTIONAL,

 ra-InsteadCG-SDT-r18 ENUMERATED {supported} OPTIONAL,

 resumeAfterSDT-Release-r18 ENUMERATED {supported} OPTIONAL,

 ul-TrafficInfo-r18 ENUMERATED {supported} OPTIONAL,

 aerialParameters-r18 AerialParameters-r18 OPTIONAL,

 --R4 40-2: beam steering

 ntn-VSAT-AntennaType-r18 ENUMERATED {electronic, mechanical} OPTIONAL,

 --R4 40-1: VSAT UE type in NTN

 ntn-VSAT-MobilityType-r18 ENUMERATED {fixed, mobile} OPTIONAL,

 ntn-Parameters-v1820 NTN-Parameters-v1820 OPTIONAL,

 nonCriticalExtension UE-NR-Capability-v1830 OPTIONAL

}

UE-NR-Capability-v1830 ::= SEQUENCE {

 sib19-Support-r18 ENUMERATED {supported} OPTIONAL,

 nonCriticalExtension SEQUENCE{} OPTIONAL

}

UE-NR-CapabilityAddXDD-Mode ::= SEQUENCE {

 phy-ParametersXDD-Diff Phy-ParametersXDD-Diff OPTIONAL,

 mac-ParametersXDD-Diff MAC-ParametersXDD-Diff OPTIONAL,

 measAndMobParametersXDD-Diff MeasAndMobParametersXDD-Diff OPTIONAL

}

UE-NR-CapabilityAddXDD-Mode-v1530 ::= SEQUENCE {

 eutra-ParametersXDD-Diff EUTRA-ParametersXDD-Diff

}

UE-NR-CapabilityAddFRX-Mode ::= SEQUENCE {

 phy-ParametersFRX-Diff Phy-ParametersFRX-Diff OPTIONAL,

 measAndMobParametersFRX-Diff MeasAndMobParametersFRX-Diff OPTIONAL

}

UE-NR-CapabilityAddFRX-Mode-v1540 ::= SEQUENCE {

 ims-ParametersFRX-Diff IMS-ParametersFRX-Diff OPTIONAL

}

UE-NR-CapabilityAddFRX-Mode-v1610 ::= SEQUENCE {

 powSav-ParametersFRX-Diff-r16 PowSav-ParametersFRX-Diff-r16 OPTIONAL,

 mac-ParametersFRX-Diff-r16 MAC-ParametersFRX-Diff-r16 OPTIONAL

}

BAP-Parameters-r16 ::= SEQUENCE {

 flowControlBH-RLC-ChannelBased-r16 ENUMERATED {supported} OPTIONAL,

 flowControlRouting-ID-Based-r16 ENUMERATED {supported} OPTIONAL

}

BAP-Parameters-v1700 ::= SEQUENCE {

 bapHeaderRewriting-Rerouting-r17 ENUMERATED {supported} OPTIONAL,

 bapHeaderRewriting-Routing-r17 ENUMERATED {supported} OPTIONAL

}

MBS-Parameters-r17 ::= SEQUENCE {

 maxMRB-Add-r17 INTEGER (1..16) OPTIONAL

}

-- TAG-UE-NR-CAPABILITY-STOP

-- ASN1STOP

|  |
| --- |
| *UE-NR-Capability* field descriptions |
| ***featureSetCombinations***A list of *FeatureSetCombination:s* for *supportedBandCombinationList* in *UE-NR-Capability*. The *FeatureSetDownlink:s* and *FeatureSetUplink:s* referred to from these *FeatureSetCombination:s* are defined in the *featureSets* list in *UE-NR-Capability*. |

|  |
| --- |
| *UE-NR-Capability-v1540 field descriptions* |
| ***fr1-fr2-Add-UE-NR-Capabilities***This instance of *UE-NR-CapabilityAddFRX-Mode* does not include any other fields than *csi-RS-IM-ReceptionForFeedback*/ *csi-RS-ProcFrameworkForSRS*/ *csi-ReportFramework*. |

***END OF CHANGE***