**3GPP TSG-RAN WG2 Meeting #126 *R2-240xxxx***

**Fukuoka, Japan May 22nd – 26th, 2024**

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| --- |
| *CR-Form-v12.2* |
| **CHANGE REQUEST** |
|  |
|  | **38.331** | **CR** | **DraftCR** | **rev** | **-** | **Current version:** | **18.1.0** |  |
|  |
| *For* [***HELP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* |
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| ***Proposed change affects:*** | UICC apps |  | ME | **X** | Radio Access Network | **X** | Core Network |  |

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| --- |
|  |
| ***Title:***  | Draft 331 CR for UE capability for feMob  |
|  |  |
| ***Source to WG:*** | Intel Corporation |
| ***Source to TSG:*** | - |
|  |  |
| ***Work item code:*** | NR\_Mob\_enh2-Core |  | ***Date:*** | 2024-26-26 |
|  |  |  |  |  |
| ***Category:*** | **F** |  | ***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-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19)* |
|  |  |
| ***Reason for change:*** | To capture the following R2-125bis meeting agreements on feMobEnh2 on UE capability:* P4 Option 1: A single capability bit for indicating UE’s capability for CHO component as was agreed for *condHandoverWithSCG-NRDC-r17* with different FDD-FR1 bands, TDD-FR1 bands, TDD-FR2-1 bands and TDD-FR2-2 bands, between FR1-FR2 and between FDD-TDD capabilities for the C-SCG component
* Introduce a separate UE capability to indicate whether the UE supports the release of NR-DC configuration as part of MCG LTM execution. This allows deploying MCG LTM even if no network implementation supports MCG LTM with SCG release (which may have issues for the network).
* Other proposals [in [R2-2403289](file:///C%3A/Users/skpalat/OneDrive%20-%20Intel%20Corporation/Documents%201/local_Stds_docs/TSGR2_125bis/Docs/R2-2403289.docx)] by CR post email disc
 |
|  |  |
| ***Summary of change:*** | 1) Introduced capabilities for CHO+Cand SCG addition and SCG change with separate capabilities for the FDD-FR1 bands, TDD-FR1 bands, TDD-FR2-1 bands and TDD-FR2-2 bands, between FR1-FR2 and between FDD-TDD only for the C-SCG component change.2) Updates to the LTM capabilities as proposed in R2-2403289.3) Introduced a new capability for  |
|  |  |
| ***Consequences if not approved:*** | If the CR is not approved, the agreements in R2-125bis will not be included in the specs. |
|  |  |
| ***Clauses affected:*** |  |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** | **X** |  |  Other core specifications  | TS38.306 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:*** |  |

#### – *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,

 ltm-MCG-r18 ENUMERATED {supported} OPTIONAL,

 ltm-SCG-r18 ENUMERATED {supported} OPTIONAL,

 ltm-MCG-NRDC-r18 ENUMERATED {supported} OPTIONAL,

 ltm-MCG-NRDC-Release-r18 ENUMERATED {supported} OPTIONAL,

 ltm-RACH-LessDG-r18 ENUMERATED {supported} OPTIONAL,

 ltm-RACH-LessCG-r18 ENUMERATED {supported} OPTIONAL,

 ltm-Recovery-r18 ENUMERATED {supported} OPTIONAL,

 ltm-ReferenceConfig-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 32-4: Concurrent gaps with NCSG in a FR

 concurrentMeasGapsNCSG-r18 ENUMERATED {supported} OPTIONAL,

 -- R4 32-7: Inter-RAT EUTRAN measurement without gap

 eutra-NoGapMeasurement-r18 ENUMERATED {supported} OPTIONAL,

 -- R4 32-8: Effective measurement window for inter-RAT EUTRAN measurements

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

 -- R4 32-9: Simultaneous reception of NR data and EUTRAN CRS within BWP 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,

 -- R4 39-8: Measurement validation based on EMR measurement during connection setup/resume

 measValidationReportEMR-r18 ENUMERATED {supported} OPTIONAL,

 -- R4 39-9: Measurement validation based on non-EMR measurement during connection setup/resume

 measValidationReportNonEMR-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

#### – *MeasAndMobParametersMRDC*

The IE *MeasAndMobParametersMRDC* is used to convey capability parameters related to RRM measurements and RRC mobility.

*MeasAndMobParametersMRDC* information element

-- ASN1START

-- TAG-MEASANDMOBPARAMETERSMRDC-START

MeasAndMobParametersMRDC ::= SEQUENCE {

 measAndMobParametersMRDC-Common MeasAndMobParametersMRDC-Common OPTIONAL,

 measAndMobParametersMRDC-XDD-Diff MeasAndMobParametersMRDC-XDD-Diff OPTIONAL,

 measAndMobParametersMRDC-FRX-Diff MeasAndMobParametersMRDC-FRX-Diff OPTIONAL

}

MeasAndMobParametersMRDC-v1560 ::= SEQUENCE {

 measAndMobParametersMRDC-XDD-Diff-v1560 MeasAndMobParametersMRDC-XDD-Diff-v1560 OPTIONAL

}

MeasAndMobParametersMRDC-v1610 ::= SEQUENCE {

 measAndMobParametersMRDC-Common-v1610 MeasAndMobParametersMRDC-Common-v1610 OPTIONAL,

 interNR-MeasEUTRA-IAB-r16 ENUMERATED {supported} OPTIONAL

}

MeasAndMobParametersMRDC-v1700 ::= SEQUENCE {

 measAndMobParametersMRDC-Common-v1700 MeasAndMobParametersMRDC-Common-v1700 OPTIONAL

}

MeasAndMobParametersMRDC-v1730 ::= SEQUENCE {

 measAndMobParametersMRDC-Common-v1730 MeasAndMobParametersMRDC-Common-v1730 OPTIONAL

}

MeasAndMobParametersMRDC-v1810 ::= SEQUENCE {

 measAndMobParametersMRDC-Common-v1810 MeasAndMobParametersMRDC-Common-v1810 OPTIONAL

}

MeasAndMobParametersMRDC-Common ::= SEQUENCE {

 independentGapConfig ENUMERATED {supported} OPTIONAL

}

MeasAndMobParametersMRDC-Common-v1610 ::= SEQUENCE {

 condPSCellChangeParametersCommon-r16 SEQUENCE {

 condPSCellChangeFDD-TDD-r16 ENUMERATED {supported} OPTIONAL,

 condPSCellChangeFR1-FR2-r16 ENUMERATED {supported} OPTIONAL

 } OPTIONAL,

 pscellT312-r16 ENUMERATED {supported} OPTIONAL

}

MeasAndMobParametersMRDC-Common-v1700 ::= SEQUENCE {

 condPSCellChangeParameters-r17 SEQUENCE {

 inter-SN-condPSCellChangeFDD-TDD-NRDC-r17 ENUMERATED {supported} OPTIONAL,

 inter-SN-condPSCellChangeFR1-FR2-NRDC-r17 ENUMERATED {supported} OPTIONAL,

 inter-SN-condPSCellChangeFDD-TDD-ENDC-r17 ENUMERATED {supported} OPTIONAL,

 inter-SN-condPSCellChangeFR1-FR2-ENDC-r17 ENUMERATED {supported} OPTIONAL,

 mn-InitiatedCondPSCellChange-FR1FDD-ENDC-r17 ENUMERATED {supported} OPTIONAL,

 mn-InitiatedCondPSCellChange-FR1TDD-ENDC-r17 ENUMERATED {supported} OPTIONAL,

 mn-InitiatedCondPSCellChange-FR2TDD-ENDC-r17 ENUMERATED {supported} OPTIONAL,

 sn-InitiatedCondPSCellChange-FR1FDD-ENDC-r17 ENUMERATED {supported} OPTIONAL,

 sn-InitiatedCondPSCellChange-FR1TDD-ENDC-r17 ENUMERATED {supported} OPTIONAL,

 sn-InitiatedCondPSCellChange-FR2TDD-ENDC-r17 ENUMERATED {supported} OPTIONAL

 } OPTIONAL,

 condHandoverWithSCG-ENDC-r17 ENUMERATED {supported} OPTIONAL,

 condHandoverWithSCG-NEDC-r17 ENUMERATED {supported} OPTIONAL

}

MeasAndMobParametersMRDC-Common-v1730 ::= SEQUENCE {

 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

 }

}

MeasAndMobParametersMRDC-Common-v1810 ::= SEQUENCE {

 mn-ConfiguredMN-TriggerSCPAC-r18 ENUMERATED {supported} OPTIONAL,

 mn-ConfiguredSN-TriggerSCPAC-r18 ENUMERATED {supported} OPTIONAL,

 sn-ConfiguredSCPAC-r18 ENUMERATED {supported} OPTIONAL,

 mn-ConfiguredMN-TriggerSCPAC-afterSCG-release-r18 ENUMERATED {supported} OPTIONAL,

 mn-ConfiguredReferenceConfigSCPAC-r18 ENUMERATED {supported} OPTIONAL,

 sn-ConfiguredReferenceConfigSCPAC-r18 ENUMERATED {supported} OPTIONAL,

 condHandoverWithCandSCG-Addition-r18 ENUMERATED {supported} OPTIONAL,

 condHandoverWithCandSCG-FR1-FR2-change-r18 ENUMERATED {supported} OPTIONAL,

 condHandoverWithCandSCG-FDD-TDD-change-r18 ENUMERATED {supported} OPTIONAL

}

MeasAndMobParametersMRDC-XDD-Diff ::= SEQUENCE {

 sftd-MeasPSCell ENUMERATED {supported} OPTIONAL,

 sftd-MeasNR-Cell ENUMERATED {supported} OPTIONAL

}

MeasAndMobParametersMRDC-XDD-Diff-v1560 ::= SEQUENCE {

 sftd-MeasPSCell-NEDC ENUMERATED {supported} OPTIONAL

}

MeasAndMobParametersMRDC-FRX-Diff ::= SEQUENCE {

 simultaneousRxDataSSB-DiffNumerology ENUMERATED {supported} OPTIONAL

}

-- TAG-MEASANDMOBPARAMETERSMRDC-STOP

-- ASN1STOP

|  |
| --- |
| \*\*\*\*\*\* Next change \*\*\*\*\*\* |

#### – *RF-Parameters*

The IE *RF-Parameters* is used to convey RF-related capabilities for NR operation.

*RF-Parameters* information element

-- ASN1START

-- TAG-RF-PARAMETERS-START

RF-Parameters ::= SEQUENCE {

 supportedBandListNR SEQUENCE (SIZE (1..maxBands)) OF BandNR,

 supportedBandCombinationList BandCombinationList OPTIONAL,

 appliedFreqBandListFilter FreqBandList OPTIONAL,

 ...,

 [[

 supportedBandCombinationList-v1540 BandCombinationList-v1540 OPTIONAL,

 srs-SwitchingTimeRequested ENUMERATED {true} OPTIONAL

 ]],

 [[

 supportedBandCombinationList-v1550 BandCombinationList-v1550 OPTIONAL

 ]],

 [[

 supportedBandCombinationList-v1560 BandCombinationList-v1560 OPTIONAL

 ]],

 [[

 supportedBandCombinationList-v1610 BandCombinationList-v1610 OPTIONAL,

 supportedBandCombinationListSidelinkEUTRA-NR-r16 BandCombinationListSidelinkEUTRA-NR-r16 OPTIONAL,

 supportedBandCombinationList-UplinkTxSwitch-r16 BandCombinationList-UplinkTxSwitch-r16 OPTIONAL

 ]],

 [[

 supportedBandCombinationList-v1630 BandCombinationList-v1630 OPTIONAL,

 supportedBandCombinationListSidelinkEUTRA-NR-v1630 BandCombinationListSidelinkEUTRA-NR-v1630 OPTIONAL,

 supportedBandCombinationList-UplinkTxSwitch-v1630 BandCombinationList-UplinkTxSwitch-v1630 OPTIONAL

 ]],

 [[

 supportedBandCombinationList-v1640 BandCombinationList-v1640 OPTIONAL,

 supportedBandCombinationList-UplinkTxSwitch-v1640 BandCombinationList-UplinkTxSwitch-v1640 OPTIONAL

 ]],

 [[

 supportedBandCombinationList-v1650 BandCombinationList-v1650 OPTIONAL,

 supportedBandCombinationList-UplinkTxSwitch-v1650 BandCombinationList-UplinkTxSwitch-v1650 OPTIONAL

 ]],

 [[

 extendedBand-n77-r16 ENUMERATED {supported} OPTIONAL

 ]],

 [[

 supportedBandCombinationList-UplinkTxSwitch-v1670 BandCombinationList-UplinkTxSwitch-v1670 OPTIONAL

 ]],

 [[

 supportedBandCombinationList-v1680 BandCombinationList-v1680 OPTIONAL

 ]],

 [[

 supportedBandCombinationList-v1690 BandCombinationList-v1690 OPTIONAL,

 supportedBandCombinationList-UplinkTxSwitch-v1690 BandCombinationList-UplinkTxSwitch-v1690 OPTIONAL

 ]],

 [[

 supportedBandCombinationList-v1700 BandCombinationList-v1700 OPTIONAL,

 supportedBandCombinationList-UplinkTxSwitch-v1700 BandCombinationList-UplinkTxSwitch-v1700 OPTIONAL,

 supportedBandCombinationListSL-RelayDiscovery-r17 OCTET STRING OPTIONAL, -- Contains PC5 BandCombinationListSidelinkNR-r16

 supportedBandCombinationListSL-NonRelayDiscovery-r17 OCTET STRING OPTIONAL, -- Contains PC5 BandCombinationListSidelinkNR-r16

 supportedBandCombinationListSidelinkEUTRA-NR-v1710 BandCombinationListSidelinkEUTRA-NR-v1710 OPTIONAL,

 sidelinkRequested-r17 ENUMERATED {true} OPTIONAL,

 extendedBand-n77-2-r17 ENUMERATED {supported} OPTIONAL

 ]],

 [[

 supportedBandCombinationList-v1720 BandCombinationList-v1720 OPTIONAL,

 supportedBandCombinationList-UplinkTxSwitch-v1720 BandCombinationList-UplinkTxSwitch-v1720 OPTIONAL

 ]],

 [[

 supportedBandCombinationList-v1730 BandCombinationList-v1730 OPTIONAL,

 supportedBandCombinationList-UplinkTxSwitch-v1730 BandCombinationList-UplinkTxSwitch-v1730 OPTIONAL,

 supportedBandCombinationListSL-RelayDiscovery-v1730 BandCombinationListSL-Discovery-r17 OPTIONAL,

 supportedBandCombinationListSL-NonRelayDiscovery-v1730 BandCombinationListSL-Discovery-r17 OPTIONAL

 ]],

 [[

 supportedBandCombinationList-v1740 BandCombinationList-v1740 OPTIONAL,

 supportedBandCombinationList-UplinkTxSwitch-v1740 BandCombinationList-UplinkTxSwitch-v1740 OPTIONAL

 ]],

 [[

 supportedBandCombinationList-v1760 BandCombinationList-v1760 OPTIONAL,

 supportedBandCombinationList-UplinkTxSwitch-v1760 BandCombinationList-UplinkTxSwitch-v1760 OPTIONAL

 ]],

 [[

 dummy1 BandCombinationList-v1770 OPTIONAL,

 dummy2 BandCombinationList-UplinkTxSwitch-v1770 OPTIONAL

 ]],

 [[

 supportedBandCombinationList-v1780 BandCombinationList-v1780 OPTIONAL,

 supportedBandCombinationList-UplinkTxSwitch-v1780 BandCombinationList-UplinkTxSwitch-v1780 OPTIONAL

 ]],

 [[

 supportedBandCombinationList-v1800 BandCombinationList-v1800 OPTIONAL,

 supportedBandCombinationList-UplinkTxSwitch-v1800 BandCombinationList-UplinkTxSwitch-v1800 OPTIONAL,

 supportedBandCombinationListSL-U2U-Relay-r18 SEQUENCE {

 supportedBandCombinationListSL-U2U-RelayDiscovery-r18 OCTET STRING OPTIONAL, -- Contains PC5

 -- BandCombinationListSidelinkNR-r16

 supportedBandCombinationListSL-U2U-DiscoveryExt BandCombinationListSL-Discovery-r17 OPTIONAL

 } OPTIONAL

 ]]

}

RF-Parameters-v15g0 ::= SEQUENCE {

 supportedBandCombinationList-v15g0 BandCombinationList-v15g0 OPTIONAL

}

RF-Parameters-v16a0 ::= SEQUENCE {

 supportedBandCombinationList-v16a0 BandCombinationList-v16a0 OPTIONAL,

 supportedBandCombinationList-UplinkTxSwitch-v16a0 BandCombinationList-UplinkTxSwitch-v16a0 OPTIONAL

}

RF-Parameters-v16c0 ::= SEQUENCE {

 supportedBandListNR-v16c0 SEQUENCE (SIZE (1..maxBands)) OF BandNR-v16c0

}

BandNR ::= SEQUENCE {

 bandNR FreqBandIndicatorNR,

 modifiedMPR-Behaviour BIT STRING (SIZE (8)) OPTIONAL,

 mimo-ParametersPerBand MIMO-ParametersPerBand OPTIONAL,

 extendedCP ENUMERATED {supported} OPTIONAL,

 multipleTCI ENUMERATED {supported} OPTIONAL,

 bwp-WithoutRestriction ENUMERATED {supported} OPTIONAL,

 bwp-SameNumerology ENUMERATED {upto2, upto4} OPTIONAL,

 bwp-DiffNumerology ENUMERATED {upto4} OPTIONAL,

 crossCarrierScheduling-SameSCS ENUMERATED {supported} OPTIONAL,

 pdsch-256QAM-FR2 ENUMERATED {supported} OPTIONAL,

 pusch-256QAM ENUMERATED {supported} OPTIONAL,

 ue-PowerClass ENUMERATED {pc1, pc2, pc3, pc4} OPTIONAL,

 rateMatchingLTE-CRS ENUMERATED {supported} OPTIONAL,

 channelBWs-DL CHOICE {

 fr1 SEQUENCE {

 scs-15kHz BIT STRING (SIZE (10)) OPTIONAL,

 scs-30kHz BIT STRING (SIZE (10)) OPTIONAL,

 scs-60kHz BIT STRING (SIZE (10)) OPTIONAL

 },

 fr2 SEQUENCE {

 scs-60kHz BIT STRING (SIZE (3)) OPTIONAL,

 scs-120kHz BIT STRING (SIZE (3)) OPTIONAL

 }

 } OPTIONAL,

 channelBWs-UL CHOICE {

 fr1 SEQUENCE {

 scs-15kHz BIT STRING (SIZE (10)) OPTIONAL,

 scs-30kHz BIT STRING (SIZE (10)) OPTIONAL,

 scs-60kHz BIT STRING (SIZE (10)) OPTIONAL

 },

 fr2 SEQUENCE {

 scs-60kHz BIT STRING (SIZE (3)) OPTIONAL,

 scs-120kHz BIT STRING (SIZE (3)) OPTIONAL

 }

 } OPTIONAL,

 ...,

 [[

 maxUplinkDutyCycle-PC2-FR1 ENUMERATED {n60, n70, n80, n90, n100} OPTIONAL

 ]],

 [[

 pucch-SpatialRelInfoMAC-CE ENUMERATED {supported} OPTIONAL,

 powerBoosting-pi2BPSK ENUMERATED {supported} OPTIONAL

 ]],

 [[

 maxUplinkDutyCycle-FR2 ENUMERATED {n15, n20, n25, n30, n40, n50, n60, n70, n80, n90, n100} OPTIONAL

 ]],

 [[

 channelBWs-DL-v1590 CHOICE {

 fr1 SEQUENCE {

 scs-15kHz BIT STRING (SIZE (16)) OPTIONAL,

 scs-30kHz BIT STRING (SIZE (16)) OPTIONAL,

 scs-60kHz BIT STRING (SIZE (16)) OPTIONAL

 },

 fr2 SEQUENCE {

 scs-60kHz BIT STRING (SIZE (8)) OPTIONAL,

 scs-120kHz BIT STRING (SIZE (8)) OPTIONAL

 }

 } OPTIONAL,

 channelBWs-UL-v1590 CHOICE {

 fr1 SEQUENCE {

 scs-15kHz BIT STRING (SIZE (16)) OPTIONAL,

 scs-30kHz BIT STRING (SIZE (16)) OPTIONAL,

 scs-60kHz BIT STRING (SIZE (16)) OPTIONAL

 },

 fr2 SEQUENCE {

 scs-60kHz BIT STRING (SIZE (8)) OPTIONAL,

 scs-120kHz BIT STRING (SIZE (8)) OPTIONAL

 }

 } OPTIONAL

 ]],

 [[

 asymmetricBandwidthCombinationSet BIT STRING (SIZE (1..32)) OPTIONAL

 ]],

 [[

 -- R1 10: NR-unlicensed

 sharedSpectrumChAccessParamsPerBand-r16 SharedSpectrumChAccessParamsPerBand-r16 OPTIONAL,

 -- R1 11-7b: Independent cancellation of the overlapping PUSCHs in an intra-band UL CA

 cancelOverlappingPUSCH-r16 ENUMERATED {supported} OPTIONAL,

 -- R1 14-1: Multiple LTE-CRS rate matching patterns

 multipleRateMatchingEUTRA-CRS-r16 SEQUENCE {

 maxNumberPatterns-r16 INTEGER (2..6),

 maxNumberNon-OverlapPatterns-r16 INTEGER (1..3)

 } OPTIONAL,

 -- R1 14-1a: Two LTE-CRS overlapping rate matching patterns within a part of NR carrier using 15 kHz overlapping with a LTE carrier

 overlapRateMatchingEUTRA-CRS-r16 ENUMERATED {supported} OPTIONAL,

 -- R1 14-2: PDSCH Type B mapping of length 9 and 10 OFDM symbols

 pdsch-MappingTypeB-Alt-r16 ENUMERATED {supported} OPTIONAL,

 -- R1 14-3: One slot periodic TRS configuration for FR1

 oneSlotPeriodicTRS-r16 ENUMERATED {supported} OPTIONAL,

 olpc-SRS-Pos-r16 OLPC-SRS-Pos-r16 OPTIONAL,

 spatialRelationsSRS-Pos-r16 SpatialRelationsSRS-Pos-r16 OPTIONAL,

 simulSRS-MIMO-TransWithinBand-r16 ENUMERATED {n2} OPTIONAL,

 channelBW-DL-IAB-r16 CHOICE {

 fr1-100mhz SEQUENCE {

 scs-15kHz ENUMERATED {supported} OPTIONAL,

 scs-30kHz ENUMERATED {supported} OPTIONAL,

 scs-60kHz ENUMERATED {supported} OPTIONAL

 },

 fr2-200mhz SEQUENCE {

 scs-60kHz ENUMERATED {supported} OPTIONAL,

 scs-120kHz ENUMERATED {supported} OPTIONAL

 }

 } OPTIONAL,

 channelBW-UL-IAB-r16 CHOICE {

 fr1-100mhz SEQUENCE {

 scs-15kHz ENUMERATED {supported} OPTIONAL,

 scs-30kHz ENUMERATED {supported} OPTIONAL,

 scs-60kHz ENUMERATED {supported} OPTIONAL

 },

 fr2-200mhz SEQUENCE {

 scs-60kHz ENUMERATED {supported} OPTIONAL,

 scs-120kHz ENUMERATED {supported} OPTIONAL

 }

 } OPTIONAL,

 rasterShift7dot5-IAB-r16 ENUMERATED {supported} OPTIONAL,

 ue-PowerClass-v1610 ENUMERATED {pc1dot5} OPTIONAL,

 condHandover-r16 ENUMERATED {supported} OPTIONAL,

 condHandoverFailure-r16 ENUMERATED {supported} OPTIONAL,

 condHandoverTwoTriggerEvents-r16 ENUMERATED {supported} OPTIONAL,

 condPSCellChange-r16 ENUMERATED {supported} OPTIONAL,

 condPSCellChangeTwoTriggerEvents-r16 ENUMERATED {supported} OPTIONAL,

 mpr-PowerBoost-FR2-r16 ENUMERATED {supported} OPTIONAL,

 -- R1 11-9: Multiple active configured grant configurations for a BWP of a serving cell

 activeConfiguredGrant-r16 SEQUENCE {

 maxNumberConfigsPerBWP-r16 ENUMERATED {n1, n2, n4, n8, n12},

 maxNumberConfigsAllCC-r16 INTEGER (2..32)

 } OPTIONAL,

 -- R1 11-9a: Joint release in a DCI for two or more configured grant Type 2 configurations for a given BWP of a serving cell

 jointReleaseConfiguredGrantType2-r16 ENUMERATED {supported} OPTIONAL,

 -- R1 12-2: Multiple SPS configurations

 sps-r16 SEQUENCE {

 maxNumberConfigsPerBWP-r16 INTEGER (1..8),

 maxNumberConfigsAllCC-r16 INTEGER (2..32)

 } OPTIONAL,

 -- R1 12-2a: Joint release in a DCI for two or more SPS configurations for a given BWP of a serving cell

 jointReleaseSPS-r16 ENUMERATED {supported} OPTIONAL,

 -- R1 13-19: Simultaneous positioning SRS and MIMO SRS transmission within a band across multiple CCs

 simulSRS-TransWithinBand-r16 ENUMERATED {n2} OPTIONAL,

 trs-AdditionalBandwidth-r16 ENUMERATED {trs-AddBW-Set1, trs-AddBW-Set2} OPTIONAL,

 handoverIntraF-IAB-r16 ENUMERATED {supported} OPTIONAL

 ]],

 [[

 -- R1 22-5a: Simultaneous transmission of SRS for antenna switching and SRS for CB/NCB /BM for intra-band UL CA

 -- R1 22-5c: Simultaneous transmission of SRS for antenna switching and SRS for antenna switching for intra-band UL CA

 simulTX-SRS-AntSwitchingIntraBandUL-CA-r16 SimulSRS-ForAntennaSwitching-r16 OPTIONAL,

 -- R1 10: NR-unlicensed

 sharedSpectrumChAccessParamsPerBand-v1630 SharedSpectrumChAccessParamsPerBand-v1630 OPTIONAL

 ]],

 [[

 handoverUTRA-FDD-r16 ENUMERATED {supported} OPTIONAL,

 -- R4 7-4: Report the shorter transient capability supported by the UE: 2, 4 or 7us

 enhancedUL-TransientPeriod-r16 ENUMERATED {us2, us4, us7} OPTIONAL,

 sharedSpectrumChAccessParamsPerBand-v1640 SharedSpectrumChAccessParamsPerBand-v1640 OPTIONAL

 ]],

 [[

 type1-PUSCH-RepetitionMultiSlots-v1650 ENUMERATED {supported} OPTIONAL,

 type2-PUSCH-RepetitionMultiSlots-v1650 ENUMERATED {supported} OPTIONAL,

 pusch-RepetitionMultiSlots-v1650 ENUMERATED {supported} OPTIONAL,

 configuredUL-GrantType1-v1650 ENUMERATED {supported} OPTIONAL,

 configuredUL-GrantType2-v1650 ENUMERATED {supported} OPTIONAL,

 sharedSpectrumChAccessParamsPerBand-v1650 SharedSpectrumChAccessParamsPerBand-v1650 OPTIONAL

 ]],

 [[

 enhancedSkipUplinkTxConfigured-v1660 ENUMERATED {supported} OPTIONAL,

 enhancedSkipUplinkTxDynamic-v1660 ENUMERATED {supported} OPTIONAL

 ]],

 [[

 maxUplinkDutyCycle-PC1dot5-MPE-FR1-r16 ENUMERATED {n10, n15, n20, n25, n30, n40, n50, n60, n70, n80, n90, n100} OPTIONAL,

 txDiversity-r16 ENUMERATED {supported} OPTIONAL

 ]],

 [[

 -- R1 36-1: Support of 1024QAM for PDSCH for FR1

 pdsch-1024QAM-FR1-r17 ENUMERATED {supported} OPTIONAL,

 -- R4 22-1 support of FR2 HST operation

 ue-PowerClass-v1700 ENUMERATED {pc5, pc6, pc7} OPTIONAL,

 -- R1 24: NR extension to 71GHz (FR2-2)

 fr2-2-AccessParamsPerBand-r17 FR2-2-AccessParamsPerBand-r17 OPTIONAL,

 rlm-Relaxation-r17 ENUMERATED {supported} OPTIONAL,

 bfd-Relaxation-r17 ENUMERATED {supported} OPTIONAL,

 cg-SDT-r17 ENUMERATED {supported} OPTIONAL,

 locationBasedCondHandover-r17 ENUMERATED {supported} OPTIONAL,

 timeBasedCondHandover-r17 ENUMERATED {supported} OPTIONAL,

 eventA4BasedCondHandover-r17 ENUMERATED {supported} OPTIONAL,

 mn-InitiatedCondPSCellChangeNRDC-r17 ENUMERATED {supported} OPTIONAL,

 sn-InitiatedCondPSCellChangeNRDC-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 29-3a: PDCCH skipping

 pdcch-SkippingWithoutSSSG-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 29-3b: 2 search space sets group switching

 sssg-Switching-1BitInd-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 29-3c: 3 search space sets group switching

 sssg-Switching-2BitInd-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 29-3d: 2 search space sets group switching with PDCCH skipping

 pdcch-SkippingWithSSSG-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 29-3e: Support Search space set group switching capability 2 for FR1

 searchSpaceSetGrp-switchCap2-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 26-1: Uplink Time and Frequency pre-compensation and timing relationship enhancements

 uplinkPreCompensation-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 26-4: UE reporting of information related to TA pre-compensation

 uplink-TA-Reporting-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 26-5: Increasing the number of HARQ processes

 max-HARQ-ProcessNumber-r17 ENUMERATED {u16d32, u32d16, u32d32} OPTIONAL,

 -- R1 26-6: Type-2 HARQ codebook enhancement

 type2-HARQ-Codebook-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 26-6a: Type-1 HARQ codebook enhancement

 type1-HARQ-Codebook-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 26-6b: Type-3 HARQ codebook enhancement

 type3-HARQ-Codebook-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 26-9: UE-specific K\_offset

 ue-specific-K-Offset-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 24-1f: Multiple PDSCH scheduling by single DCI for 120kHz in FR2-1

 multiPDSCH-SingleDCI-FR2-1-SCS-120kHz-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 24-1g: Multiple PUSCH scheduling by single DCI for 120kHz in FR2-1

 multiPUSCH-SingleDCI-FR2-1-SCS-120kHz-r17 ENUMERATED {supported} OPTIONAL,

 -- R4 14-4: Parallel PRS measurements in RRC\_INACTIVE state, FR1/FR2 diff

 parallelPRS-MeasRRC-Inactive-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 27-1-2: Support of UE-TxTEGs for UL TDOA

 nr-UE-TxTEG-ID-MaxSupport-r17 ENUMERATED {n1, n2, n3, n4, n6, n8} OPTIONAL,

 -- R1 27-17: PRS processing in RRC\_INACTIVE

 prs-ProcessingRRC-Inactive-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 27-3-2: DL PRS measurement outside MG and in a PRS processing window

 prs-ProcessingWindowType1A-r17 ENUMERATED {option1, option2, option3} OPTIONAL,

 prs-ProcessingWindowType1B-r17 ENUMERATED {option1, option2, option3} OPTIONAL,

 prs-ProcessingWindowType2-r17 ENUMERATED {option1, option2, option3} OPTIONAL,

 -- R1 27-15: Positioning SRS transmission in RRC\_INACTIVE state for initial UL BWP

 srs-AllPosResourcesRRC-Inactive-r17 SRS-AllPosResourcesRRC-Inactive-r17 OPTIONAL,

 -- R1 27-16: OLPC for positioning SRS in RRC\_INACTIVE state - gNB

 olpc-SRS-PosRRC-Inactive-r17 OLPC-SRS-Pos-r16 OPTIONAL,

 -- R1 27-19: Spatial relation for positioning SRS in RRC\_INACTIVE state - gNB

 spatialRelationsSRS-PosRRC-Inactive-r17 SpatialRelationsSRS-Pos-r16 OPTIONAL,

 -- R1 30-1: Increased maximum number of PUSCH Type A repetitions

 maxNumberPUSCH-TypeA-Repetition-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 30-2: PUSCH Type A repetitions based on available slots

 puschTypeA-RepetitionsAvailSlot-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 30-3: TB processing over multi-slot PUSCH

 tb-ProcessingMultiSlotPUSCH-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 30-3a: Repetition of TB processing over multi-slot PUSCH

 tb-ProcessingRepMultiSlotPUSCH-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 30-4: The maximum duration for DM-RS bundling

 maxDurationDMRS-Bundling-r17 SEQUENCE {

 fdd-r17 ENUMERATED {n4, n8, n16, n32} OPTIONAL,

 tdd-r17 ENUMERATED {n2, n4, n8, n16} OPTIONAL

 } OPTIONAL,

 -- R1 30-6: Repetition of PUSCH transmission scheduled by RAR UL grant and DCI format 0\_0 with CRC scrambled by TC-RNTI

 pusch-RepetitionMsg3-r17 ENUMERATED {supported} OPTIONAL,

 sharedSpectrumChAccessParamsPerBand-v1710 SharedSpectrumChAccessParamsPerBand-v1710 OPTIONAL,

 -- R4 25-2: Parallel measurements on cells belonging to a different NGSO satellite than a serving satellite without scheduling restrictions

 -- on normal operations with the serving cell

 parallelMeasurementWithoutRestriction-r17 ENUMERATED {supported} OPTIONAL,

 -- R4 25-5: Parallel measurements on multiple NGSO satellites within a SMTC

 maxNumber-NGSO-SatellitesWithinOneSMTC-r17 ENUMERATED {n1, n2, n3, n4} OPTIONAL,

 -- R1 26-10: K1 range extension

 k1-RangeExtension-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 35-1: Aperiodic CSI-RS for tracking for fast SCell activation

 aperiodicCSI-RS-FastScellActivation-r17 SEQUENCE {

 maxNumberAperiodicCSI-RS-PerCC-r17 ENUMERATED {n8, n16, n32, n48, n64, n128, n255},

 maxNumberAperiodicCSI-RS-AcrossCCs-r17 ENUMERATED {n8, n16, n32, n64, n128, n256, n512, n1024}

 } OPTIONAL,

 -- R1 35-2: Aperiodic CSI-RS bandwidth for tracking for fast SCell activation for 10MHz UE channel bandwidth

 aperiodicCSI-RS-AdditionalBandwidth-r17 ENUMERATED {addBW-Set1, addBW-Set2} OPTIONAL,

 -- R1 28-1a: RRC-configured DL BWP without CD-SSB or NCD-SSB

 bwp-WithoutCD-SSB-OrNCD-SSB-RedCap-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 28-3: Half-duplex FDD operation type A for (e)RedCap UE

 halfDuplexFDD-TypeA-RedCap-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 27-15b: Positioning SRS transmission in RRC\_INACTIVE state configured outside initial UL BWP

 posSRS-RRC-Inactive-OutsideInitialUL-BWP-r17 PosSRS-RRC-Inactive-OutsideInitialUL-BWP-r17 OPTIONAL,

 -- R4 15-3 UE support of CBW for 480kHz SCS

 channelBWs-DL-SCS-480kHz-FR2-2-r17 BIT STRING (SIZE (8)) OPTIONAL,

 channelBWs-UL-SCS-480kHz-FR2-2-r17 BIT STRING (SIZE (8)) OPTIONAL,

 -- R4 15-4 UE support of CBW for 960kHz SCS

 channelBWs-DL-SCS-960kHz-FR2-2-r17 BIT STRING (SIZE (8)) OPTIONAL,

 channelBWs-UL-SCS-960kHz-FR2-2-r17 BIT STRING (SIZE (8)) OPTIONAL,

 -- R4 17-1 UL gap for Tx power management

 ul-GapFR2-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 25-4: One-shot HARQ ACK feedback triggered by DCI format 1\_2

 oneShotHARQ-feedbackTriggeredByDCI-1-2-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 25-5: PHY priority handling for one-shot HARQ ACK feedback

 oneShotHARQ-feedbackPhy-Priority-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 25-6: Enhanced type 3 HARQ-ACK codebook feedback

 enhancedType3-HARQ-CodebookFeedback-r17 SEQUENCE {

 enhancedType3-HARQ-Codebooks-r17 ENUMERATED {n1, n2, n4, n8},

 maxNumberPUCCH-Transmissions-r17 ENUMERATED {n1, n2, n3, n4, n5, n6, n7}

 } OPTIONAL,

 -- R1 25-7: Triggered HARQ-ACK codebook re-transmission

 triggeredHARQ-CodebookRetx-r17 SEQUENCE {

 minHARQ-Retx-Offset-r17 ENUMERATED {n-7, n-5, n-3, n-1, n1},

 maxHARQ-Retx-Offset-r17 ENUMERATED {n4, n6, n8, n10, n12, n14, n16, n18, n20, n22, n24}

 } OPTIONAL

 ]],

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 -- R4 22-2 support of one shot large UL timing adjustment

 ue-OneShotUL-TimingAdj-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 25-2: Repetitions for PUCCH format 0, and 2 over multiple slots with K = 2, 4, 8

 pucch-Repetition-F0-2-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 25-11a: 4-bits subband CQI for NTN and unlicensed

 cqi-4-BitsSubbandNTN-SharedSpectrumChAccess-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 25-16: HARQ-ACK with different priorities multiplexing on a PUCCH/PUSCH

 mux-HARQ-ACK-DiffPriorities-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 25-20a: Propagation delay compensation based on Rel-15 TA procedure for NTN and unlicensed

 ta-BasedPDC-NTN-SharedSpectrumChAccess-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 33-2b: DCI-based enabling/disabling ACK/NACK-based feedback for dynamic scheduling for multicast

 ack-NACK-FeedbackForMulticastWithDCI-Enabler-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 33-2e: Multiple G-RNTIs for group-common PDSCHs

 maxNumberG-RNTI-r17 INTEGER (2..8) OPTIONAL,

 -- R1 33-2f: Dynamic multicast with DCI format 4\_2

 dynamicMulticastDCI-Format4-2-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 33-2i: Supported maximal modulation order for multicast PDSCH

 maxModulationOrderForMulticast-r17 CHOICE {

 fr1-r17 ENUMERATED {qam256, qam1024},

 fr2-r17 ENUMERATED {qam64, qam256}

 } OPTIONAL,

 -- R1 33-3-1: Dynamic Slot-level repetition for group-common PDSCH for TN and licensed

 dynamicSlotRepetitionMulticastTN-NonSharedSpectrumChAccess-r17 ENUMERATED {n8, n16} OPTIONAL,

 -- R1 33-3-1a: Dynamic Slot-level repetition for group-common PDSCH for NTN and unlicensed

 dynamicSlotRepetitionMulticastNTN-SharedSpectrumChAccess-r17 ENUMERATED {n8, n16} OPTIONAL,

 -- R1 33-4-1: DCI-based enabling/disabling NACK-only based feedback for dynamic scheduling for multicast

 nack-OnlyFeedbackForMulticastWithDCI-Enabler-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 33-5-1b: DCI-based enabling/disabling ACK/NACK-based feedback for dynamic scheduling for multicast

 ack-NACK-FeedbackForSPS-MulticastWithDCI-Enabler-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 33-5-1h: Multiple G-CS-RNTIs for SPS group-common PDSCHs

 maxNumberG-CS-RNTI-r17 INTEGER (2..8) OPTIONAL,

 -- R1 33-10: Support group-common PDSCH RE-level rate matching for multicast

 re-LevelRateMatchingForMulticast-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 36-1a: Support of 1024QAM for PDSCH with maximum 2 MIMO layers for FR1

 pdsch-1024QAM-2MIMO-FR1-r17 ENUMERATED {supported} OPTIONAL,

 -- R4 14-3 PRS measurement without MG

 prs-MeasurementWithoutMG-r17 ENUMERATED {cpLength, quarterSymbol, halfSymbol, halfSlot} OPTIONAL,

 -- R4 25-7: The number of target LEO satellites the UE can monitor per carrier

 maxNumber-LEO-SatellitesPerCarrier-r17 INTEGER (3..4) OPTIONAL,

 -- R1 27-3-3 DL PRS Processing Capability outside MG - buffering capability

 prs-ProcessingCapabilityOutsideMGinPPW-r17 SEQUENCE (SIZE(1..3)) OF PRS-ProcessingCapabilityOutsideMGinPPWperType-r17 OPTIONAL,

 -- R1 27-15a: Positioning SRS transmission in RRC\_INACTIVE state for initial UL BWP with semi-persistent SRS

 srs-SemiPersistent-PosResourcesRRC-Inactive-r17 SEQUENCE {

 maxNumOfSemiPersistentSRSposResources-r17 ENUMERATED {n1, n2, n4, n8, n16, n32, n64},

 maxNumOfSemiPersistentSRSposResourcesPerSlot-r17 ENUMERATED {n1, n2, n3, n4, n5, n6, n8, n10, n12, n14}

 } OPTIONAL,

 -- R2: UE support of CBW for 120kHz SCS

 channelBWs-DL-SCS-120kHz-FR2-2-r17 BIT STRING (SIZE (8)) OPTIONAL,

 channelBWs-UL-SCS-120kHz-FR2-2-r17 BIT STRING (SIZE (8)) OPTIONAL

 ]],

 [[

 -- R1 30-4a: DM-RS bundling for PUSCH repetition type A

 dmrs-BundlingPUSCH-RepTypeA-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 30-4b: DM-RS bundling for PUSCH repetition type B

 dmrs-BundlingPUSCH-RepTypeB-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 30-4c: DM-RS bundling for TB processing over multi-slot PUSCH

 dmrs-BundlingPUSCH-multiSlot-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 30-4d: DMRS bundling for PUCCH repetitions

 dmrs-BundlingPUCCH-Rep-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 30-4e: Enhanced inter-slot frequency hopping with inter-slot bundling for PUSCH

 interSlotFreqHopInterSlotBundlingPUSCH-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 30-4f: Enhanced inter-slot frequency hopping for PUCCH repetitions with DMRS bundling

 interSlotFreqHopPUCCH-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 30-4g: Restart DM-RS bundling

 dmrs-BundlingRestart-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 30-4h: DM-RS bundling for non-back-to-back transmission

 dmrs-BundlingNonBackToBackTX-r17 ENUMERATED {supported} OPTIONAL

 ]],

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 -- R1 33-5-1e: Dynamic Slot-level repetition for SPS group-common PDSCH for multicast

 maxDynamicSlotRepetitionForSPS-Multicast-r17 ENUMERATED {n8, n16} OPTIONAL,

 -- R1 33-5-1g: DCI-based enabling/disabling NACK-only based feedback for SPS group-common PDSCH for multicast

 nack-OnlyFeedbackForSPS-MulticastWithDCI-Enabler-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 33-5-1i: Multicast SPS scheduling with DCI format 4\_2

 sps-MulticastDCI-Format4-2-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 33-5-2: Multiple SPS group-common PDSCH configuration on PCell

 sps-MulticastMultiConfig-r17 INTEGER (1..8) OPTIONAL,

 -- R1 33-6-1: DL priority indication for multicast in DCI

 priorityIndicatorInDCI-Multicast-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 33-6-1a: DL priority configuration for SPS multicast

 priorityIndicatorInDCI-SPS-Multicast-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 33-6-2: Two HARQ-ACK codebooks simultaneously constructed for supporting HARQ-ACK codebooks with different priorities

 -- for unicast and multicast at a UE

 twoHARQ-ACK-CodebookForUnicastAndMulticast-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 33-6-3: More than one PUCCH for HARQ-ACK transmission for multicast or for unicast and multicast within a slot

 multiPUCCH-HARQ-ACK-ForMulticastUnicast-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 33-9: Supporting unicast PDCCH to release SPS group-common PDSCH

 releaseSPS-MulticastWithCS-RNTI-r17 ENUMERATED {supported} OPTIONAL

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 -- R1 41-3-1a UE automomous TA adjustment when cell-reselection happens

 posUE-TA-AutoAdjustment-r18 ENUMERATED {supported} OPTIONAL,

 -- R1 41-3-1: SRS for positioning configuration in multiple cells for UEs in RRC\_INACTIVE state for initial UL BWP

 posSRS-ValidityAreaRRC-InactiveInitialUL-BWP-r18 ENUMERATED {supported} OPTIONAL,

 -- R1 41-3-2: SRS for positioning configuration in multiple cells for UEs in RRC\_INACTIVE state for configured outside

 -- initial UL BWP

 posSRS-ValidityAreaRRC-InactiveOutsideInitialUL-BWP-r18 ENUMERATED {supported} OPTIONAL,

 -- R1 41-5-1:PRS measurement with Rx frequency hopping within a MG and measurement reporting RRC\_CONNECTED for RedCap UEs

 dl-PRS-MeasurementWithRxFH-RRC-ConnectedForRedCap-r18 DL-PRS-MeasurementWithRxFH-RRC-Connected-r18 OPTIONAL,

 -- R1 41-5-2: Support of positioning SRS with Tx frequency hopping in RRC\_CONNECTED for RedCap UEs

 posSRS-TxFH-RRC-ConnectedForRedCap-r18 PosSRS-TxFrequencyHoppingRRC-Connected-r18 OPTIONAL,

 -- R1 41-5-2a: Support of positioning SRS with Tx frequency hopping in RRC\_INACTIVE for RedCap UEs

 posSRS-TxFH-RRC-InactiveForRedCap-r18 PosSRS-TxFrequencyHoppingRRC-Inactive-r18 OPTIONAL,

 -- R1 41-4-8: Support of Positioning SRS bandwidth aggregation in RRC\_INACTIVE

 posSRS-BWA-RRC-Inactive-r18 PosSRS-BWA-RRC-Inactive-r18 OPTIONAL,

 -- R1 41-4-6a support a Rel-17 single DCI scheduling positioning SRS resource sets across the linked carriers

 -- for SRS bandwidth aggregation in RRC\_CONNECTED state

 posJointTriggerBySingleDCI-RRC-Connected-r18 ENUMERATED {supported} OPTIONAL,

 -- R1 41-5-1a PRS measurement with Rx frequency hopping in RRC\_INACTIVE for RedCap UEs

 dl-PRS-MeasurementWithRxFH-RRC-InactiveforRedCap-r18 ENUMERATED {supported} OPTIONAL,

 -- R1 41-5-1b PRS measurement with Rx frequency hopping in RRC\_IDLE for RedCap UEs

 dl-PRS-MeasurementWithRxFH-RRC-IdleforRedCap-r18 ENUMERATED {supported} OPTIONAL,

 -- R1 42-1: Spatial domain adaptation with CSI feedback based on CSI report sub-configuration(s) for periodic CSI reporting

 spatialAdaptation-CSI-Feedback-r18 SEQUENCE {

 csiFeedbackType-r18 ENUMERATED {sdType1, sdType2, both},

 maxNumberLmax-r18 INTEGER (2..4),

 maxNumberCSI-ResourcePerCC-r18 SEQUENCE {

 sdType1-Resource-r18 INTEGER (1..32),

 sdType2-Resource-r18 INTEGER (1..32)

 },

 maxNumberTotalCSI-ResourcePerCC-r18 SEQUENCE {

 sdType1-Resource-r18 ENUMERATED {n8, n16, n24, n32, n64, n128},

 sdType2-Resource-r18 ENUMERATED {n8, n16, n24, n32, n64, n128}

 },

 totalNumberCSI-Reporting-r18 INTEGER (2..4)

 } OPTIONAL,

 -- R1 42-1a: Spatial domain adaptation with CSI feedback based on CSI report sub-configuration(s) for periodic CSI

 -- reporting on PUSCH

 spatialAdaptation-CSI-FeedbackPUSCH-r18 SEQUENCE {

 csiFeedbackType-r18 ENUMERATED {sdType1, sdType2, both},

 maxNumberLmax-r18 INTEGER (2..8),

 subReportCSI-r18 INTEGER (2..4),

 maxNumberCSI-ResourcePerCC-r18 INTEGER (1..32),

 maxNumberTotalCSI-ResourcePerCC-r18 ENUMERATED {n8, n16, n24, n32, n64, n128},

 totalNumberCSI-Reporting-r18 INTEGER (2..12)

 } OPTIONAL,

 -- R1 42-1b: Spatial domain adaptation with CSI feedback based on CSI report sub-configuration(s) for aperiodic CSI reporting

 spatialAdaptation-CSI-FeedbackAperiodic-r18 SEQUENCE {

 csiFeedbackType-r18 ENUMERATED {sdType1, sdType2, both},

 maxNumberLmax-r18 INTEGER (2..8),

 subReportCSI-r18 INTEGER (2..4),

 maxNumberCSI-ResourcePerCC-r18 SEQUENCE {

 sdType1-Resource-r18 INTEGER (1..32),

 sdType2-Resource-r18 INTEGER (1..32)

 },

 maxNumberTotalCSI-ResourcePerCC-r18 SEQUENCE {

 sdType1-Resource-r18 ENUMERATED {n8, n16, n24, n32, n64, n128},

 sdType2-Resource-r18 ENUMERATED {n8, n16, n24, n32, n64, n128}

 },

 totalNumberCSI-Reporting-r18 INTEGER (2..12)

 } OPTIONAL,

 -- R1 42-1c: Spatial domain adaptation with CSI feedback based on CSI report sub-configuration(s) for semi-persistent

 -- CSI reporting on PUCCH

 spatialAdaptation-CSI-FeedbackPUCCH-r18 SEQUENCE {

 csiFeedbackType-r18 ENUMERATED {sdType1, sdType2, both},

 maxNumberLmax-r18 INTEGER (2..4),

 subReportCSI-r18 INTEGER (2..4),

 maxNumberCSI-ResourcePerCC-r18 INTEGER (1..32),

 maxNumberTotalCSI-ResourcePerCC-r18 ENUMERATED {n8, n16, n24, n32, n64, n128},

 totalNumberCSI-Reporting-r18 INTEGER (2..4)

 } OPTIONAL,

 -- R1 42-2: Power domain adaptation with CSI feedback based on CSI report sub-configuration(s) for periodic CSI reporting

 powerAdaptation-CSI-Feedback-r18 SEQUENCE {

 maxNumberLmax-r18 INTEGER (2..4),

 maxNumberCSI-ResourcePerCC-r18 INTEGER (1..32),

 maxNumberTotalCSI-ResourcePerCC-r18 ENUMERATED {n8, n16, n24, n32, n64, n128},

 totalNumberCSI-Reporting-r18 INTEGER (2..4)

 } OPTIONAL,

 -- R1 42-2a: Power domain adaptation with CSI feedback based on CSI report sub-configuration(s) for semi-persistent CSI

 -- reporting on PUSCH

 powerAdaptation-CSI-FeedbackPUSCH-r18 SEQUENCE {

 maxNumberLmax-r18 INTEGER (2..8),

 subReportCSI-r18 INTEGER (2..4),

 maxNumberCSI-ResourcePerCC-r18 INTEGER (1..32),

 maxNumberTotalCSI-ResourcePerCC-r18 ENUMERATED {n8, n16, n24, n32, n64, n128},

 totalNumberCSI-Reporting-r18 INTEGER (2..12)

 } OPTIONAL,

 -- R1 42-2b: Power domain adaptation with CSI feedback based on CSI report sub-configuration(s) for aperiodic CSI reporting

 powerAdaptation-CSI-FeedbackAperiodic-r18 SEQUENCE {

 maxNumberLmax-r18 INTEGER (2..8),

 subReportCSI-r18 INTEGER (2..4),

 maxNumberCSI-ResourcePerCC-r18 INTEGER (1..32),

 maxNumberTotalCSI-ResourcePerCC-r18 ENUMERATED {n8, n16, n24, n32, n64, n128},

 totalNumberCSI-Reporting-r18 INTEGER (2..12)

 } OPTIONAL,

 -- R1 42-2c: Power domain adaptation with CSI feedback based on CSI report sub-configuration(s) for semi-persistent CSI

 -- reporting on PUCCH

 powerAdaptation-CSI-FeedbackPUCCH-r18 SEQUENCE {

 maxNumberLmax-r18 INTEGER (2..4),

 subReportCSI-r18 INTEGER (2..4),

 maxNumberCSI-ResourcePerCC-r18 INTEGER (1..32),

 maxNumberTotalCSI-ResourcePerCC-r18 ENUMERATED {n8, n16, n24, n32, n64, n128},

 totalNumberCSI-Reporting-r18 INTEGER (2..4)

 } OPTIONAL,

 -- R1 42-4: Cell DTX and/or DRX operation based on RRC configuration

 nes-CellDTX-DRX-r18 ENUMERATED {cellDTXonly, cellDRXonly, both} OPTIONAL,

 -- R1 42-5: Cell DTX/DRX operation triggered by DCI format 2\_9

 nes-CellDTX-DRX-DCI2-9-r18 ENUMERATED {supported} OPTIONAL,

 -- R1 42-7: Mixed codebook combination for spatial domain adaptation with CSI feedback based on CSI report sub-configuration(s),

 -- each containing one port subset configuration

 mixCodeBookSpatialAdaptation-r18 ENUMERATED {supported} OPTIONAL,

 -- R1 44-2: NTN DMRS bundling enhancement for PUSCH in NGSO scenarios

 ntn-DMRS-BundlingNGSO-r18 ENUMERATED {n4, n8, n16, n32} OPTIONAL,

 -- R1 45-3: Beam indication with joint DL/UL LTM TCI states

 ltm-BeamIndicationJointTCI-r18 SEQUENCE {

 maxNumberJointTCI-PerCell-r18 ENUMERATED {n8,n12,n16,n24,n32,n48,n64,n128},

 qcl-Resource-r18 ENUMERATED {srs, trs, both},

 maxNumberJointTCI-AcrossCells-r18 INTEGER (1..128),

 maxNumberCells-r18 INTEGER (1..8)

 } OPTIONAL,

 -- R1 45-3a: MAC-CE activated joint LTM TCI states

 ltm-MAC-CE-JointTCI-r18 SEQUENCE {

 qcl-Resource-r18 ENUMERATED {srs, trs, both},

 maxNumberJointTCI-PerCell-r18 INTEGER (1..16),

 maxNumberJointTCI-AcrossCells-r18 ENUMERATED {n1,n2,n3,n4,n8,n16,n32}

 } OPTIONAL,

 -- R1 45-4: Beam indication with separate DL/UL LTM TCI states

 ltm-BeamIndicationSeparateTCI-r18 SEQUENCE {

 maxNumberDL-TCI-PerCell-r18 ENUMERATED {n4,n8,n12,n16,n24,n32,n48,n64,n128},

 maxNumberUL-TCI-PerCell-r18 ENUMERATED {n4,n8,n12,n16,n24,n32,n48,n64},

 qcl-Resource-r18 ENUMERATED {srs, trs, both},

 maxNumberDL-TCI-AcrossCells-r18 INTEGER (1..128),

 maxNumberUL-TCI-AcrossCells-r18 INTEGER (1..64),

 maxNumberCells-r18 INTEGER (1..8)

 } OPTIONAL,

 -- R1 45-4a: MAC-CE activated DL/UL LTM TCI states

 ltm-MAC-CE-SeparateTCI-r18 SEQUENCE {

 qcl-Resource-r18 ENUMERATED {srs, trs, both},

 maxNumberDL-TCI-PerCell-r18 INTEGER (1..8),

 maxNumberUL-TCI-PerCell-r18 INTEGER (1..8),

 maxNumberDL-TCI-AcrossCells-r18 ENUMERATED {n1,n2,n4,n8,n16},

 maxNumberUL-TCI-AcrossCells-r18 ENUMERATED {n1,n2,n4,n8,n16}

 } OPTIONAL,

 -- R1 45-5: RACH-based early TA acquisition

 rach-EarlyTA-Measurement-r18 INTEGER (1..8) OPTIONAL,

 -- R1 45-6: UE-based TA measurement

 ue-TA-Measurement-r18 INTEGER (1..8) OPTIONAL,

 -- R1 45-7: TA indication in cell switch command

 ta-IndicationCellSwitch-r18 ENUMERATED {supported} OPTIONAL,

 -- R1 50-1: Multi-PUSCHs for Configured Grant

 multiPUSCH-CG-r18 ENUMERATED {n16, n32} OPTIONAL,

 -- R1 50-1a: Multiple active multi-PUSCHs configured grant configurations for a BWP of a serving cell

 multiPUSCH-ActiveConfiguredGrant-r18 SEQUENCE {

 maxNumberConfigsPerBWP ENUMERATED {n1, n2, n4, n8, n12},

 maxNumberConfigsAllCC-FR1 INTEGER (2..32),

 maxNumberConfigsAllCC-FR2 INTEGER (2..32)

 } OPTIONAL,

 -- R1 50-1b: Joint release in a DCI for two or more configured grant Type 2 configurations, including multi-PUSCH CG

 -- configuration(s), for a given BWP of a serving cell

 jointReleaseDCI-r18 ENUMERATED {supported} OPTIONAL,

 -- R1 50-2: UCI indication of unused CG-PUSCH transmission occasions

 cg-PUSCH-UTO-UCI-Ind-r18 ENUMERATED {supported} OPTIONAL,

 -- R1 50-3: PDCCH monitoring resumption after UL NACK

 pdcch-MonitoringResumptionAfterUL-NACK-r18 ENUMERATED {supported} OPTIONAL,

 -- R1 51-1: support for 3MHz channel bandwidth

 support-3MHz-ChannelBW-r18 ENUMERATED {supported} OPTIONAL,

 -- R1 51-2: support 12 PRB CORESET0

 support-12PRB-CORESET0-r18 ENUMERATED {supported} OPTIONAL,

 -- R1 52-1: Reception of NR PDCCH candidates overlapping with LTE CRS REs

 nr-PDCCH-OverlapLTE-CRS-RE-r18 SEQUENCE {

 overlapInRE-r18 ENUMERATED {oneSymbolNoOverlap, someOrAllSymOverlap},

 overlapInSymbol-r18 ENUMERATED {symbol2,symbol1And2}

 } OPTIONAL,

 -- Editor's Note: someOrAllSymOverlap considers to be supported in overlapInRE-r18 only if RAN4 performance requirements for

 -- someOrAllSymOverlap are not defined

 -- R1 52-1a: Reception of NR PDCCH candidates overlapping with LTE CRS REs with multiple non-overlapping CRS rate matching patterns

 nr-PDCCH-OverlapLTE-CRS-RE-MultiPatterns-r18 ENUMERATED {supported} OPTIONAL,

 -- R1 52-1b: NR PDCCH reception that overlaps with LTE CRS within a single span of 3 consecutive OFDM symbols that is within the

 -- first 4 OFDM symbols in a slot

 nr-PDCCH-OverlapLTE-CRS-RE-Span-3-4-r18 ENUMERATED {supported} OPTIONAL,

 -- R1 52-2: Two LTE-CRS overlapping rate matching patterns within NR 15 kHz carrier overlapping with LTE carrier (regardless of

 -- support or configuration of multi-TRP)

 twoRateMatchingEUTRA-CRS-patterns-3-4-r18 SEQUENCE {

 maxNumberPatterns-r18 INTEGER (2..6),

 maxNumberNon-OverlapPatterns-r18 INTEGER (1..3)

 } OPTIONAL,

 -- R1 52-2a: Two LTE-CRS overlapping rate matching patterns with two different values of coresetPoolIndex within NR 15 kHz carrier

 -- overlapping with LTE carrier

 overlapRateMatchingEUTRA-CRS-Patterns-3-4-Diff-CS-Pool-r18 ENUMERATED {supported} OPTIONAL,

 -- R1 53-3: Support RLM/BM/BFD measurements based on NCD-SSB within active BWP

 ncd-SSB-BWP-Wor-r18 ENUMERATED {supported} OPTIONAL,

 -- R1 53-4: Support Support RLM/BM/BFD measurements based on CSI-RS when CD-SSB is outside active BWP

 rlm-BM-BFD-CSI-RS-OutsideActiveBWP-r18 ENUMERATED {supported} OPTIONAL,

 -- R1 54-1: PRACH coverage enhancements

 prach-CoverageEnh-r18 ENUMERATED {supported} OPTIONAL,

 -- R1 54-1a: PRACH repetitions with less than N symbols gap

 prach-Repetition-r18 ENUMERATED {supported} OPTIONAL,

 -- R1 54-3: Dynamic waveform switching

 dynamicWaveformSwitch-r18 ENUMERATED {supported} OPTIONAL,

 -- R1 54-3a: PHR enhancement for dynamic waveform switching

 dynamicWaveformSwitchPHR-r18 ENUMERATED {supported} OPTIONAL,

 -- R1 54-3b: Dynamic waveform switching for intra-band UL CA

 dynamicWaveformSwitchIntraCA-r18 INTEGER (2..8) OPTIONAL,

 -- R1 55-3: Multiple PUSCHs scheduling by single DCI for non-consecutive slots in FR1

 multiPUSCH-SingleDCI-NonConsSlots-r18 ENUMERATED {supported} OPTIONAL,

 -- R1 55-2d: single-symbol DL-PRS used in RTT-based Propagation delay compensation

 pdc-maxNumberPRS-ResourceProcessedPerSlot-r18 SEQUENCE {

 fr1-r18 SEQUENCE {

 scs-15kHz-r18 ENUMERATED {n1, n2, n4, n6, n8, n12, n16, n24, n32, n48, n64} OPTIONAL,

 scs-30kHz-r18 ENUMERATED {n1, n2, n4, n6, n8, n12, n16, n24, n32, n48, n64} OPTIONAL,

 scs-60kHz-r18 ENUMERATED {n1, n2, n4, n6, n8, n12, n16, n24, n32, n48, n64} OPTIONAL

 },

 fr2-r18 SEQUENCE {

 scs-60kHz-r18 ENUMERATED {n1, n2, n4, n6, n8, n12, n16, n24, n32, n48, n64} OPTIONAL,

 scs-120kHz-r18 ENUMERATED {n1, n2, n4, n6, n8, n12, n16, n24, n32, n48, n64} OPTIONAL

 }

 } OPTIONAL,

 -- R4 27-2: LowerMSD for inter-band NR CA and EN-DC

 lowerMSD-r18 SEQUENCE (SIZE (1..maxLowerMSD-r18)) OF LowerMSD-r18 OPTIONAL,

 lowerMSD-ENDC-r18 SEQUENCE (SIZE (1..maxLowerMSD-r18)) OF LowerMSD-r18 OPTIONAL,

 -- R4 28-1: Enhanced channel raster

 enhancedChannelRaster-r18 ENUMERATED {supported} OPTIONAL,

 -- R4 31-2 Beam sweeping factor reduction for FR2 unknown SCell activation

 beamSweepingFactorReduction-r18 SEQUENCE {

 reduceForCellDetection ENUMERATED {n1, n2, n4, n6},

 reduceForSSB-L1-RSRP-Meas INTEGER (0..7)

 } OPTIONAL,

 -- R4 34-1: Support of NR FR2 HST with simultaneous DL reception with two different QCL TypeD RSs

 simultaneousReceptionTwoQCL-r18 ENUMERATED {supported} OPTIONAL,

 -- R4 34-2: Enhanced FR2 HST RRM requirements for intra-band CA and inter-frequency measurements in connected mode

 measEnhCAInterFreqFR2-r18 ENUMERATED {supported} OPTIONAL,

 -- R4 34-4: Support of enhanced MAC CE for TCI state switch indication for FR2 HST

 tci-StateSwitchInd-r18 ENUMERATED {supported} OPTIONAL,

 -- R4 35-2: the requirements defined for ATG UE with antenna array or omni-direction antenna requirements.

 antennaArrayType-r18 ENUMERATED {supported} OPTIONAL,

 locationBasedCondHandoverATG-r18 ENUMERATED {supported} OPTIONAL,

 -- R4 35-3: rated maximum output power value range from 23dBm to 40dBm with 1dB as granularity at maximum modulation order and full

 -- PRB configurations.

 maxOutputPowerATG-r18 INTEGER (1..18) OPTIONAL,

 eventA4BasedCondHandoverNES-r18 ENUMERATED {supported} OPTIONAL,

 nesBasedCondHandoverWithDCI-r18 ENUMERATED {supported} OPTIONAL,

 rachLessHandoverNTN-r18 ENUMERATED {supported} OPTIONAL,

 locationBasedCondHandoverEMC-r18 ENUMERATED {supported} OPTIONAL,

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

 posSRS-PreconfigureRRC-InactiveInitialUL-BWP-r18 ENUMERATED {supported} OPTIONAL,

 posSRS-PreconfigureRRC-InactiveOutsideInitialUL-BWP-r18 ENUMERATED {supported} OPTIONAL,

 cg-SDT-PeriodicityExt-r18 ENUMERATED {supported} OPTIONAL,

 -- R2: 2Rx XR UEs

 supportOf2RxXR-r18 ENUMERATED {supported} OPTIONAL,

 condHandoverWithCandSCG-change-r18 ENUMERATED {supported} OPTIONAL

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}

BandNR-v16c0 ::= SEQUENCE {

 pusch-RepetitionTypeA-v16c0 ENUMERATED {supported} OPTIONAL,

 ...

}

LowerMSD-r18 ::= SEQUENCE {

 aggressorband1-r18 CHOICE {

 nr FreqBandIndicatorNR,

 eutra FreqBandIndicatorEUTRA

 },

 aggressorband2-r18 FreqBandIndicatorNR OPTIONAL,

 msd-Information-r18 SEQUENCE (SIZE (1..maxLowerMSDInfo-r18)) OF MSD-Information-r18

}

MSD-Information-r18 ::= SEQUENCE {

 msd-Type-r18 ENUMERATED {harmonic, harmonicMixing, crossBandIsolation, imd2, imd3, imd4, imd5, all, spare8, spare7,

 spare6, spare5,spare4, spare3, spare2, spare1},

 msd-PowerClass-r18 ENUMERATED {pc1dot5, pc2, pc3},

 msd-Class-r18 ENUMERATED {classI, classII, classIII, classIV, classV, classVI, classVII, classVIII }

}

-- TAG-RF-PARAMETERS-STOP

-- ASN1STOP

|  |
| --- |
| *RF-Parameters* field descriptions |
| ***appliedFreqBandListFilter***In this field the UE mirrors the *FreqBandList* that the NW provided in the capability enquiry, if any, as described in clause 5.6.1.4. The UE filtered the band combinations in the *supportedBandCombinationList* in accordance with this *appliedFreqBandListFilter*. The UE does not include this field if the UE capability is requested by E-UTRAN and the network request includes the field *eutra-nr-only* [10]. |
| ***dummy1, dummy2***The fields are not used in the specification and the network ignores the received values. |
| ***supportedBandCombinationList***A list of band combinations that the UE supports for NR (and NR-DC, if requested). The *FeatureSetCombinationId*:s in this list refer to the *FeatureSetCombination* entries in the *featureSetCombinations* list in the *UE-NR-Capability* IE. The UE does not include this field if the UE capability is requested by E-UTRAN and the network request includes the field *eutra-nr-only* [10]. |
| ***supportedBandCombinationListSidelinkEUTRA-NR***A list of band combinations that the UE supports for NR sidelink communication only, for joint NR sidelink communication and V2X sidelink communication, or for V2X sidelink communication only. The UE does not include this field if the UE capability is requested by E-UTRAN (see TS 36.331[10]) and the network request includes the field *eutra-nr-only*. |
| ***supportedBandCombinationListSL-NonRelayDiscovery***A list of band combinations that the UE supports for NR sidelink non-relay discovery. The encoding is defined in PC5 *BandCombinationListSidelinkNR-r16.* |
| ***supportedBandCombinationListSL-RelayDiscovery***A list of band combinations that the UE supports for NR sidelink relay discovery. The encoding is defined in PC5 *BandCombinationListSidelinkNR-r16.* |
| ***supportedBandCombinationListSL-U2U-DiscoveryExt***This field indicates the band parameter in *BandCombinationListSL-Discovery-r17* that the UE supports for NR U2U sidelink relay discovery in a band included in *supportedBandCombinationListSL-U2U-RelayDiscovery*. |
| ***supportedBandCombinationListSL-U2U-RelayDiscovery***A list of band combinations that the UE supports for NR U2U sidelink relay discovery. The encoding is defined in PC5 *BandCombinationListSidelinkNR-r16.* |
| ***supportedBandCombinationList-UplinkTxSwitch***A list of band combinations that the UE supports dynamic uplink Tx switching for NR UL CA and SUL. The *FeatureSetCombinationId*:s in this list refer to the *FeatureSetCombination* entries in the *featureSetCombinations* list in the *UE-NR-Capability* IE. The UE does not include this field if the UE capability is requested by E-UTRAN and the network request includes the field *eutra-nr-only* [10]. |
| ***supportedBandListNR***A list of NR bands supported by the UE. If *supportedBandListNR-v16c0* is included, the UE shall include the same number of entries, and listed in the same order, as in *supportedBandListNR* (without suffix). |