**3GPP TSG-RAN2 Meeting #109e *R2-20xxxxx***

**e-meeting, 24th February – 6th March 2020**

|  |
| --- |
| *CR-Form-v11.4* |
| **CHANGE REQUEST** |
|  |
|  | **38.331** | **CR** | **1434** | **rev** | **1** | **Current version:** | **15.8.0** |  |
|  |
| *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)*.* |
|  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME | **X** | Radio Access Network | **X** | Core Network |  |

|  |
| --- |
|  |
| ***Title:***  | Introducing autonomous gap in CGI reporting |
|  |  |
| ***Source to WG:*** | ZTE Coporation, Sanechips, CATT, OPPO, CMCC, MediaTek Inc, Vivo, Ericsson, Qualcomm Incorporated, Intel, Nokia, Huawei, HiSilicon, China Telecom, China Unicom, NTT DOCOMO |
| ***Source to TSG:*** | R2 |
|  |  |
| ***Work item code:*** | NR\_RRM\_Enh,TEI16 |  | ***Date:*** |  2019-02-27 |
|  |  |  |  |  |
| ***Category:*** | **F** |  | ***Release:*** | Rel-16 |
|  | *Use one of the following categories:****F*** *(correction)****A*** *(mirror corresponding to a change in an earlier release)****B*** *(addition of feature),* ***C*** *(functional modification of feature)****D*** *(editorial modification)*Detailed explanations of the above categories 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-12 (Release 12)**Rel-13 (Release 13)Rel-14 (Release 14)Rel-15 (Release 15)Rel-16 (Release 16)* |
|  |  |
| ***Reason for change:*** | * Based on WID RP-191601 and RAN4’s LS (R4-1914782), for CGI reading with automous gap, various scenarios will be supported in Rel-16.
* AT RAN2#108 meeting, RAN2 has discussed Autonomous Gap capability for CGI reporting in TEI-16 and made the following agreement:
* R2 assumes that autonomous gap is to be supported for CGI reading for: UE served by NR/LTE cell towards NR cell, UE served by NR cell towards LTE cell, expect to see CRs next meeting.

This CR is provided to capture the signalling and new UE capabilities for supporting NR configured SI acquisition of LTE and NR neighbouring cell by using autonomous gap.  |
|  |  |
| ***Summary of change:*** | 1. Add new T321 timer values for autonomous gap operation in section 5.5.2.3.
2. Add autonomous gap for reportCGI on NR cell in section 5.5.3.1;
3. Introduce useAutonomousGaps field in ReportConfigInterRAT and ReportConfigNR;
4. Add new UE capabilities in section 6.3.6, differentiates TDD/FDD and NR FR1/FR2.
 |
|  |  |
| ***Consequences if not approved:*** | UE cannot perform NR configured CGI reporting towards LTE or NR neighbouring cells by using autonomous gap. |
|  |  |
| ***Clauses affected:*** | 5.5.2.3, 5.5.3.1, 6.3.2, 6.3.3 |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** |  | **X** |  Other core specifications  | TS 38.306, TS38.331  |
| ***affected:*** |  | **X** |  Test specifications | TS/TR ... CR ...  |
| ***(show related CRs)*** |  | **X** |  O&M Specifications | CR R2-2000217.  |
|  |  |
| ***Other comments:*** |  |
|  |  |

*START OF CHANGES*

## 5.5 Measurements

\*\*\*\*\* skip non-related part \*\*\*\*\*

#### 5.5.2.3 Measurement identity addition/modification

The network applies the procedure as follows:

- configure a *measId* only if the corresponding measurement object, the corresponding reporting configuration and the corresponding quantity configuration, are configured.

The UE shall:

1> for each *measId* included in the received *measIdToAddModList*:

2> if an entry with the matching *measId* exists in the *measIdList* within the *VarMeasConfig*:

3> replace the entry with the value received for this *measId*;

2> else:

3> add a new entry for this *measId* within the *VarMeasConfig*;

2> remove the measurement reporting entry for this *measId* from the *VarMeasReportList*, if included;

2> stop the periodical reporting timer or timer T321 or timer T322, whichever one is running, and reset the associated information (e.g. *timeToTrigger*) for this *measId*;

2> if the *reportType* is set to *reportCGI* in the *reportConfig* associated with this *measId*:

3> if the *measObject* associated with this *measId* concerns E-UTRA:

4> if the *useAutonomousGaps* is included in the *reportConfig* associated with this *measId*:

5> start timer T321 with the timer value set to [xx seconds] for this *measId*;

4> else:

5> start timer T321 with the timer value set to 1 second for this *measId*;

3> if the *measObject* associated with this *measId* concerns NR:

4> if the *measObject* associated with this *measId* concerns FR1:

5> if the *useAutonomousGaps* is included in the *reportConfig* associated with this *measId*:

6> start timer T321 with the timer value set to [xx seconds] for this *measId*;

5> else:

6> start timer T321 with the timer value set to 2 seconds for this *measId*;

4> if the *measObject* associated with this *measId* concerns FR2:

5> if the *useAutonomousGaps* is included in the *reportConfig* associated with this *measId*:

6> start timer T321 with the timer value set to [xx seconds] for this *measId*;

5> else:

6> start timer T321 with the timer value set to 16 seconds for this *measId*.

2> if the *reportType* is set to *reportSFTD* in the *reportConfigNR* associated with this *measId* and the *drx-SFTD-NeighMeas* is included:

3> if the *measObject* associated with this *measId* concerns FR1:

4> start timer T322 with the timer value set to 3 seconds for this *measId*;

3> if the *measObject* associated with this *measId* concerns FR2:

4> start timer T322 with the timer value set to 24 seconds for this *measId*.

*NEXT CHANGE*

### 5.5.3 Performing measurements

#### 5.5.3.1 General

An RRC\_CONNECTED UE shall derive cell measurement results by measuring one or multiple beams associated per cell as configured by the network, as described in 5.5.3.3. For all cell measurement results in RRC\_CONNECTED the UE applies the layer 3 filtering as specified in 5.5.3.2, before using the measured results for evaluation of reporting criteria and measurement reporting. For cell measurements, the network can configure RSRP, RSRQ or SINR as trigger quantity. Reporting quantities can be any combination of quantities (i.e. only RSRP; only RSRQ; only SINR; RSRP and RSRQ; RSRP and SINR; RSRQ and SINR; RSRP, RSRQ and SINR), irrespective of the trigger quantity.

The network may also configure the UE to report measurement information per beam (which can either be measurement results per beam with respective beam identifier(s) or only beam identifier(s)), derived as described in 5.5.3.3a. If beam measurement information is configured to be included in measurement reports, the UE applies the layer 3 beam filtering as specified in 5.5.3.2. On the other hand, the exact L1 filtering of beam measurements used to derive cell measurement results is implementation dependent.

The UE shall:

1> whenever the UE has a *measConfig*, perform RSRP and RSRQ measurements for each serving cell for which *servingCellMO* is configured as follows:

2> if the *reportConfig* associated with at least one *measId* included in the *measIdList* within *VarMeasConfig* contains an *rsType* set to *ssb* and *ssb-ConfigMobility* is configured in the *measObject* indicated by the *servingCellMO*:

3> if the *reportConfig* associated with at least one *measId* included in the *measIdList* within *VarMeasConfig* contains a *reportQuantityRS-Indexes* and *maxNrofRS-IndexesToReport* and contains an *rsType* set to *ssb*:

4> derive layer 3 filtered RSRP and RSRQ per beam for the serving cell based on SS/PBCH block, as described in 5.5.3.3a;

3> derive serving cell measurement results based on SS/PBCH block, as described in 5.5.3.3;

2> if the *reportConfig* associated with at least one *measId* included in the *measIdList* within *VarMeasConfig* contains an *rsType* set to *csi-rs* and *CSI-RS-ResourceConfigMobility* is configured in the *measObject* indicated by the *servingCellMO*:

3> if the *reportConfig* associated with at least one *measId* included in the *measIdList* within *VarMeasConfig* contains a *reportQuantityRS-Indexes* and *maxNrofRS-IndexesToReport* and contains an *rsType* set to *csi-rs*:

4> derive layer 3 filtered RSRP and RSRQ per beam for the serving cell based on CSI-RS, as described in 5.5.3.3a;

3> derive serving cell measurement results based on CSI-RS, as described in 5.5.3.3;

1> for each serving cell for which *servingCellMO* is configured, if the *reportConfig* associated with at least one *measId* included in the *measIdList* within *VarMeasConfig* contains SINR as trigger quantity and/or reporting quantity:

2> if the *reportConfig* contains *rsType* set to *ssb* and *ssb-ConfigMobility* is configured in the *servingCellMO*:

3> if the *reportConfig*contains a *reportQuantityRS-Indexes* and *maxNrofRS-IndexesToReport*:

4> derive layer 3 filtered SINR per beam for the serving cell based on SS/PBCH block, as described in 5.5.3.3a;

3> derive serving cell SINR based on SS/PBCH block, as described in 5.5.3.3;

2> if the *reportConfig* contains *rsType* set to *csi-rs* and *CSI-RS-ResourceConfigMobility* is configured in the *servingCellMO*:

3> if the *reportConfig*contains a *reportQuantityRS-Indexes* and *maxNrofRS-IndexesToReport*:

4> derive layer 3 filtered SINR per beam for the serving cell based on CSI-RS, as described in 5.5.3.3a;

3> derive serving cell SINR based on CSI-RS, as described in 5.5.3.3;

1> for each *measId* included in the *measIdList* within *VarMeasConfig*:

2> if the *reportType* for the associated *reportConfig* is set to *reportCGI* and timer T321 is running:

3> if *useAutonomousGaps* is configured for the associated *reportConfig*:

4> perform the corresponding measurements on the frequency and RAT indicated in the associated *measObject* using autonomous gaps as necessary;

3> else:

4> perform the corresponding measurements on the frequency and RAT indicated in the associated *measObject* using available idle periods;

3> if the cell indicated by *reportCGI* field for the associated *measObject* is an NR cell and that indicated cell is broadcasting *SIB1* (see TS 38.213 [13], clause 13):

4> try to acquire *SIB1* in the concerned cell;

3> if the cell indicated by *reportCGI* field is an E-UTRA cell:

4> try to acquire *SystemInformationBlockType1* in the concerned cell;

2> if the *reportType* for the associated *reportConfig* is *periodical* or *eventTriggered*:

3> if a measurement gap configuration is setup, or

3> if the UE does not require measurement gaps to perform the concerned measurements:

4> if *s-MeasureConfig* is not configured, or

4> if *s-MeasureConfig* is set to *ssb-RSRP* and the NR SpCell RSRP based on SS/PBCH block, after layer 3 filtering, is lower than *ssb-RSRP,* or

4> if *s-MeasureConfig* is set to *csi-RSRP* and the NR SpCell RSRP based on CSI-RS, after layer 3 filtering, is lower than *csi-RSRP*:

5> if the *measObject* is associated to NR and the *rsType* is set to *csi-rs*:

6> if *reportQuantityRS-Indexes* and *maxNrofRS-IndexesToReport* for the associated *reportConfig* are configured:

7> derive layer 3 filtered beam measurements only based on CSI-RS for each measurement quantity indicated in *reportQuantityRS-Indexes*, as described in 5.5.3.3a;

6> derive cell measurement results based on CSI-RS for the trigger quantity and each measurement quantity indicated in *reportQuantityCell* using parameters from the associated *measObject*, as described in 5.5.3.3;

5> if the *measObject* is associated to NR and the *rsType* is set to *ssb*:

6> if *reportQuantityRS-Indexes* and *maxNrofRS-IndexesToReport* for the associated *reportConfig* are configured:

7> derive layer 3 beam measurements only based on SS/PBCH block for each measurement quantity indicated in *reportQuantityRS-Indexes*, as described in 5.5.3.3a;

6> derive cell measurement results based on SS/PBCH block for the trigger quantity and each measurement quantity indicated in *reportQuantityCell* using parameters from the associated *measObject*, as described in 5.5.3.3;

5> if the *measObject* is associated to E-UTRA:

6> perform the corresponding measurements associated to neighbouring cells on the frequencies indicated in the concerned *measObject*, as described in 5.5.3.2;

2> if the *reportType* for the associated *reportConfig* is set to *reportSFTD*:

3> if the *reportSFTD-Meas* is set to *true:*

4> if the *measObject* is associated to E-UTRA:

5> perform SFTD measurements between the PCell and the E-UTRA PSCell;

5> if the *reportRSRP* is set to *true*;

6> perform RSRP measurements for the E-UTRA PSCell;

4> else if the *measObject* is associated to NR:

5> perform SFTD measurements between the PCell and the NR PSCell;

5> if the *reportRSRP* is set to *true*;

6> perform RSRP measurements for the NR PSCell based on SSB;

3> else if the *reportSFTD-NeighMeas* is included*:*

4> if the *measObject* is associated to NR:

5> if the *drx-SFTD-NeighMeas* is included:

6> perform SFTD measurements between the PCell and the NR neighbouring cell(s) detected based on parameters in the associated *measObject* using available idle periods;

5> else:

6> perform SFTD measurements between the PCell and the NR neighbouring cell(s) detected based on parameters in the associated *measObject*;

5> if the *reportRSRP* is set to *true*:

6> perform RSRP measurements based on SSB for the NR neighbouring cell(s) detected based on parameters in the associated *measObject*;

2> perform the evaluation of reporting criteria as specified in 5.5.4.

*NEXT CHANGE*

## 6.3 RRC information elements

\*\*\*\* skip non-related part \*\*\*\*

### 6.3.2 Radio resource control information elements

#### *– ReportConfigInterRAT*

The IE *ReportConfigInterRAT* specifies criteria for triggering of an inter-RAT measurement reporting event. The inter-RAT measurement reporting events for E-UTRA are labelled B*N* with *N* equal to 1, 2 and so on.

Event B1: Neighbour becomes better than absolute threshold;

Event B2: PCell becomes worse than absolute threshold1 AND Neighbour becomes better than another absolute threshold2;

*ReportConfigInterRAT* information element

-- ASN1START

-- TAG-REPORTCONFIGINTERRAT-START

ReportConfigInterRAT ::= SEQUENCE {

 reportType CHOICE {

 periodical PeriodicalReportConfigInterRAT,

 eventTriggered EventTriggerConfigInterRAT,

 reportCGI ReportCGI-EUTRA,

 ...,

 reportSFTD ReportSFTD-EUTRA

 }

}

ReportCGI-EUTRA ::= SEQUENCE {

 cellForWhichToReportCGI EUTRA-PhysCellId,

 ...,

 [[

 useAutonomousGaps-r16 ENUMERATED {setup} OPTIONAL -- Need R

 ]]

}

ReportSFTD-EUTRA ::= SEQUENCE {

 reportSFTD-Meas BOOLEAN,

 reportRSRP BOOLEAN,

 ...

}

EventTriggerConfigInterRAT ::= SEQUENCE {

 eventId CHOICE {

 eventB1 SEQUENCE {

 b1-ThresholdEUTRA MeasTriggerQuantityEUTRA,

 reportOnLeave BOOLEAN,

 hysteresis Hysteresis,

 timeToTrigger TimeToTrigger,

 ...

 },

 eventB2 SEQUENCE {

 b2-Threshold1 MeasTriggerQuantity,

 b2-Threshold2EUTRA MeasTriggerQuantityEUTRA,

 reportOnLeave BOOLEAN,

 hysteresis Hysteresis,

 timeToTrigger TimeToTrigger,

 ...

 },

 ...

 },

 rsType NR-RS-Type,

 reportInterval ReportInterval,

 reportAmount ENUMERATED {r1, r2, r4, r8, r16, r32, r64, infinity},

 reportQuantity MeasReportQuantity,

 maxReportCells INTEGER (1..maxCellReport),

 ...

}

PeriodicalReportConfigInterRAT ::= SEQUENCE {

 reportInterval ReportInterval,

 reportAmount ENUMERATED {r1, r2, r4, r8, r16, r32, r64, infinity},

 reportQuantity MeasReportQuantity,

 maxReportCells INTEGER (1..maxCellReport),

 ...

}

-- TAG-REPORTCONFIGINTERRAT-STOP

-- ASN1STOP

|  |
| --- |
| *ReportConfigInterRAT field descriptions* |
| ***reportType***Type of the configured measurement report. In EN-DC, network does not configure report of type *ReportCGI-EUTRA*. |

|  |
| --- |
| *ReportCGI-EUTRA field descriptions* |
| ***useAutonomousGaps***Indicates whether or not the UE is allowed to use autonomous gaps in acquiring system information from the E-UTRAN neighbour cell. When the field is included, the UE applies the corresponding value for T321. |

|  |
| --- |
| *EventTriggerConfigInterRAT* field descriptions |
| ***b2-Threshold1***NR threshold to be used in inter RAT measurement report triggering condition for event B2. |
| ***bN-ThresholdEUTRA***E-UTRA threshold value associated with the selected trigger quantity (RSRP, RSRQ, SINR) to be used in inter RAT measurement report triggering condition for event number bN. In the same *eventB2*, the network configures the same CHOICE name (*rsrp*, *rsrq* or *sinr*) for the *MeasTriggerQuantity* of the *b2-Threshold1* and for the *MeasTriggerQuantityEUTRA* of the *b2-Threshold2EUTRA*. |
| ***eventId***Choice of inter RAT event triggered reporting criteria. |
| ***maxReportCells***Max number of non-serving cells to include in the measurement report. |
| ***reportAmount****Number* of measurement reports applicable for *eventTriggered* as well as for *periodical* report types |
| ***reportOnLeave***Indicates whether or not the UE shall initiate the measurement reporting procedure when the leaving condition is met for a cell in *cellsTriggeredList*, as specified in 5.5.4.1. |
| ***reportQuantity***The cell measurement quantities to be included in the measurement report. |
| ***timeToTrigger***Time during which specific criteria for the event needs to be met in order to trigger a measurement report. |

|  |
| --- |
| *PeriodicalReportConfigInterRAT* field descriptions |
| ***maxReportCells***Max number of non-serving cells to include in the measurement report. |
| ***reportAmount***Number of measurement reports applicable for *eventTriggered* as well as for *periodical* report types |
| ***reportQuantity***The cell measurement quantities to be included in the measurement report. |

#### – *ReportConfigNR*

The IE *ReportConfigNR* specifies criteria for triggering of an NR measurement reporting event. Measurement reporting events are based on cell measurement results, which can either be derived based on SS/PBCH block or CSI-RS. These events are labelled AN with N equal to 1, 2 and so on.

Event A1: Serving becomes better than absolute threshold;

Event A2: Serving becomes worse than absolute threshold;

Event A3: Neighbour becomes amount of offset better than PCell/PSCell;

Event A4: Neighbour becomes better than absolute threshold;

Event A5: PCell/PSCell becomes worse than absolute threshold1 AND Neighbour/SCell becomes better than another absolute threshold2;

Event A6: Neighbour becomes amount of offset better than SCell.

*ReportConfigNR* information element

-- ASN1START

-- TAG-REPORTCONFIGNR-START

ReportConfigNR ::= SEQUENCE {

 reportType CHOICE {

 periodical PeriodicalReportConfig,

 eventTriggered EventTriggerConfig,

 ...,

 reportCGI ReportCGI,

 reportSFTD ReportSFTD-NR

 }

}

ReportCGI ::= SEQUENCE {

 cellForWhichToReportCGI PhysCellId,

 ...,

 [[

 useAutonomousGaps-r16 ENUMERATED {setup} OPTIONAL -- Need R

 ]]

}

ReportSFTD-NR ::= SEQUENCE {

 reportSFTD-Meas BOOLEAN,

 reportRSRP BOOLEAN,

 ...,

 [[

 reportSFTD-NeighMeas ENUMERATED {true} OPTIONAL, -- Need R

 drx-SFTD-NeighMeas ENUMERATED {true} OPTIONAL, -- Need R

 cellsForWhichToReportSFTD SEQUENCE (SIZE (1..maxCellSFTD)) OF PhysCellId OPTIONAL -- Need R

 ]]

}

EventTriggerConfig::= SEQUENCE {

 eventId CHOICE {

 eventA1 SEQUENCE {

 a1-Threshold MeasTriggerQuantity,

 reportOnLeave BOOLEAN,

 hysteresis Hysteresis,

 timeToTrigger TimeToTrigger

 },

 eventA2 SEQUENCE {

 a2-Threshold MeasTriggerQuantity,

 reportOnLeave BOOLEAN,

 hysteresis Hysteresis,

 timeToTrigger TimeToTrigger

 },

 eventA3 SEQUENCE {

 a3-Offset MeasTriggerQuantityOffset,

 reportOnLeave BOOLEAN,

 hysteresis Hysteresis,

 timeToTrigger TimeToTrigger,

 useWhiteCellList BOOLEAN

 },

 eventA4 SEQUENCE {

 a4-Threshold MeasTriggerQuantity,

 reportOnLeave BOOLEAN,

 hysteresis Hysteresis,

 timeToTrigger TimeToTrigger,

 useWhiteCellList BOOLEAN

 },

 eventA5 SEQUENCE {

 a5-Threshold1 MeasTriggerQuantity,

 a5-Threshold2 MeasTriggerQuantity,

 reportOnLeave BOOLEAN,

 hysteresis Hysteresis,

 timeToTrigger TimeToTrigger,

 useWhiteCellList BOOLEAN

 },

 eventA6 SEQUENCE {

 a6-Offset MeasTriggerQuantityOffset,

 reportOnLeave BOOLEAN,

 hysteresis Hysteresis,

 timeToTrigger TimeToTrigger,

 useWhiteCellList BOOLEAN

 },

 ...

 },

 rsType NR-RS-Type,

 reportInterval ReportInterval,

 reportAmount ENUMERATED {r1, r2, r4, r8, r16, r32, r64, infinity},

 reportQuantityCell MeasReportQuantity,

 maxReportCells INTEGER (1..maxCellReport),

 reportQuantityRS-Indexes MeasReportQuantity OPTIONAL, -- Need R

 maxNrofRS-IndexesToReport INTEGER (1..maxNrofIndexesToReport) OPTIONAL, -- Need R

 includeBeamMeasurements BOOLEAN,

 reportAddNeighMeas ENUMERATED {setup} OPTIONAL, -- Need R

 ...

}

PeriodicalReportConfig ::= SEQUENCE {

 rsType NR-RS-Type,

 reportInterval ReportInterval,

 reportAmount ENUMERATED {r1, r2, r4, r8, r16, r32, r64, infinity},

 reportQuantityCell MeasReportQuantity,

 maxReportCells INTEGER (1..maxCellReport),

 reportQuantityRS-Indexes MeasReportQuantity OPTIONAL, -- Need R

 maxNrofRS-IndexesToReport INTEGER (1..maxNrofIndexesToReport) OPTIONAL, -- Need R

 includeBeamMeasurements BOOLEAN,

 useWhiteCellList BOOLEAN,

 ...

}

NR-RS-Type ::= ENUMERATED {ssb, csi-rs}

MeasTriggerQuantity ::= CHOICE {

 rsrp RSRP-Range,

 rsrq RSRQ-Range,

 sinr SINR-Range

}

MeasTriggerQuantityOffset ::= CHOICE {

 rsrp INTEGER (-30..30),

 rsrq INTEGER (-30..30),

 sinr INTEGER (-30..30)

}

MeasReportQuantity ::= SEQUENCE {

 rsrp BOOLEAN,

 rsrq BOOLEAN,

 sinr BOOLEAN

}

-- TAG-REPORTCONFIGNR-STOP

-- ASN1STOP

|  |
| --- |
| *ReportConfigNR* field descriptions |
| ***reportType***Type of the configured measurement report. In EN-DC, network does not configure report of type *reportCGI* using SRB3. |

|  |
| --- |
| *ReportCGI* field descriptions |
| ***useAutonomousGaps***Indicates whether or not the UE is allowed to use autonomous gaps in acquiring system information from the NR neighbour cell. When the field is included, the UE applies the corresponding value for T321. |

|  |
| --- |
| *EventTriggerConfig* field descriptions |
| ***a3-Offset/a6-Offset***Offset value(s) to be used in NR measurement report triggering condition for event a3/a6. The actual value is field value \* 0.5 dB. |
| ***aN-ThresholdM***Threshold value associated to the selected trigger quantity (e.g. RSRP, RSRQ, SINR) per RS Type (e.g. SS/PBCH block, CSI-RS) to be used in NR measurement report triggering condition for event number aN. If multiple thresholds are defined for event number aN, the thresholds are differentiated by M. The network configures aN-Threshold1 only for events A1, A2, A4, A5 and a5-Threshold2 only for event A5. In the same *eventA5*, the network configures the same quantity for the *MeasTriggerQuantity* of the *a5-Threshold1* and for the *MeasTriggerQuantity* of the *a5-Threshold2*. |
| ***eventId***Choice of NR event triggered reporting criteria. |
| ***maxNrofRS-IndexesToReport***Max number of RS indexes to include in the measurement report for A1-A6 events. |
| ***maxReportCells***Max number of non-serving cells to include in the measurement report. |
| ***reportAddNeighMeas***Indicates that the UE shall include the best neighbour cells per serving frequency. |
| ***reportAmount****Number* of measurement reports applicable for *eventTriggered* as well as for *periodical* report types. |
| ***reportOnLeave***Indicates whether or not the UE shall initiate the measurement reporting procedure when the leaving condition is met for a cell in *cellsTriggeredList*, as specified in 5.5.4.1. |
| ***reportQuantityCell***The cell measurement quantities to be included in the measurement report. |
| ***reportQuantityRS-Indexes***Indicates which measurement information per RS index the UE shall include in the measurement report. |
| ***timeToTrigger***Time during which specific criteria for the event needs to be met in order to trigger a measurement report. |
| ***useWhiteCellList***Indicates whether only the cells included in the white-list of the associated measObject are applicable as specified in 5.5.4.1. |

|  |
| --- |
| *PeriodicalReportConfig* field descriptions |
| ***maxNrofRS-IndexesToReport***Max number of RS indexes to include in the measurement report. |
| ***maxReportCells***Max number of non-serving cells to include in the measurement report. |
| ***reportAmount****Number* of measurement reports applicable for *eventTriggered* as well as for *periodical* report types |
| ***reportQuantityCell***The cell measurement quantities to be included in the measurement report. |
| ***reportQuantityRS-Indexes***Indicates which measurement information per RS index the UE shall include in the measurement report. |
| ***useWhiteCellList***Indicates whether only the cells included in the white-list of the associated measObject are applicable as specified in 5.5.4.1. |

|  |
| --- |
| *ReportSFTD-NR* field descriptions |
| ***cellForWhichToReportSFTD***Indicates the target NR neighbour cells for SFTD measurement between PCell and NR neighbour cells. |
| ***drx-SFTD-NeighMeas***Indicates that the UE shall use available idle periods (i.e. DRX off periods) for the SFTD measurement in NR standalone. The network only includes *drx-SFTD-NeighMeas* field when *reprtSFTD-NeighMeas* is set to true. |
| ***reportSFTD-Meas***Indicates whether UE is required to perform SFTD measurement between PCell and NR PSCell in NR-DC. |
| ***reportSFTD-NeighMeas***Indicates whether UE is required to perform SFTD measurement between PCell and NR neighbour cells in NR standalone. The network does not include this field if *reportSFTD-Meas* is set to *true*. |
| ***reportRSRP***Indicates whether UE is required to include RSRP result of NR PSCell in SFTD measurement result, derived based on SSB. If it is set to true, the network should ensure that *ssb-ConfigMobility* is included in the measurement object for NR PSCell. |

*NEXT CHANGE*

### 6.3.3 UE capability information elements

#### – *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

}

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

 ]]

}

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

 ]],

 [[

 eutra-AutonomousGaps-r16 ENUMERATED {supported} OPTIONAL,

 nr-AutonomousGaps-r16 ENUMERATED {supported} OPTIONAL,

 nr-AutonomousGaps-ENDC-r16 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

 ]]

}

-- TAG-MEASANDMOBPARAMETERS-STOP

-- ASN1STOP

*END OF CHANGES*