**3GPP TSG-#125R2-240xxxx**

**, , Feb 26 – Mar 01, 2024 update of R2-2400755**

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| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | 38.331 | **CR** | 4552 | **rev** | 1 | **Current version:** | 18.0.0 |  |
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| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* | | | | | | | | |
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| ***Proposed change affects:*** | UICC apps |  | ME | **X** | Radio Access Network | **X** | Core Network |  |

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| In | | | | | | | | | | |
| ***Title:*** | SDT corrections for ASN.1 Review issues [CG-SDT-enh] | | | | | | | | | |
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| ***Source to WG:*** | ZTE Corporation, Ericsson (rapporteurs) | | | | | | | | | |
| ***Source to TSG:*** | R2 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_MT\_SDT-Core, TEI18 | | | | |  | ***Date:*** | | | -03-04 |
|  |  | | | |  | |  | | |  |
| ***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 can be found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | | | | | | | | *Use one of the following releases: Rel-8 (Release 8) Rel-9 (Release 9) Rel-10 (Release 10) Rel-11 (Release 11) … Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | The following issues identified during ASN.1 review need to be fixed:  **Z302:**  In section 5.3.11, with the introduction of the extended CG-Periodicity, it is possible that there is a long gap between when SDT procedure is considred ongoing and when T319a is started. If cell reselection occurs in the meanwhile, the UE will go to IDLE. However, T319a may not be running in this case, although SDT procedure will be considered ongoing. So, we need to clean this up here.  **H649:**  Redundant condition for checking mt-SDT indication in section 5.3.13.1b needs to be removed.  **I059:**  In SIB1, alignment with other new names defined for MT-SDT when referring to the RSRP threshold is needed. R17 SDT defined sdt-RSRP-ThresholdR18 MT-SDT defined sdt-RSRP-ThresholdMTOur preference is to align with other spec reference to MT-SDT instead that mentioning MT in one part of the name different than SDT  **E059:**  Cg-SDT-PeriodicityExt-r18 field has 51 values and thus 13 spare values left. Since the original field has been already extended by this field, it would be good to add the 13 remaining spare values so we may avoid creating a new field in the future.  **W019:**  Since the extended CG periodicity is used for CG-SDT, while CG-SDT only uses CG type 1, “and type 2” in this field description should be removed (i.e. it is not applicable to type 2).  **Z300:**  For the mt-SDT code point in ResumeCause, missing Release and version extension for the IE.  **H700:**  When requesting lower layers to check the conditions for initiating SDT, RRC doesn’t explicitly indicate to lower layers whether the resume procedure is initiated for mobile originated or mobile terminated case. | | | | | | | | |
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| ***Summary of change:*** | | **Z302:**  In section 5.3.11, replaced the T319a check with the check for SDT procedure ongoing.  **H649:**  Removed the redundant condition for checking mt-SDT indication in section 5.3.13.1b.  **I059:**  Change the name of the IE to mt-SDT-RSRP-Threshold  **E059:**  For cg-SDT-PeriodicityExt-r18 field add the 13 remaining spare values so we may avoid creating a new field in the future.  **W019:**  Remove type 2 in the field description.  **Z300:**  For the mt-SDT code point in ResumeCause, add the release and version extension.  **H700:**  Clarify at the beginning of section 5.3.13.1b that: “When requesting lower layers to check the conditions for initiating SDT, RRC indicates to lower layers whether the resume procedure is initiated for mobile originated or mobile terminated case.” | | | | | | | | |
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| ***Consequences if not approved:*** | | Issues identified per above are not solved in the RRC spec. | | | | | | | | |
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| ***Clauses affected:*** | | 5.3.11, 5.3.13.1b, 6.2.2, 6.3.2 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **X** | Other core specifications | | | | TS/TR ... 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:*** | |  | | | | | | | | |

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| ***First change*** |

### 5.3.11 UE actions upon going to RRC\_IDLE

The UE shall:

1> reset MAC;

1> if the UE is NCR-MT:

2> indicate to NCR-Fwd to cease forwarding;

1> set the variable *pendingRNA-Update* to *false*, if that is set to *true*;

1> if going to RRC\_IDLE was triggered by reception of the *RRCRelease* message including a *waitTime*:

2> if T302 is running:

3> stop timer T302;

2> start timer T302 with the value set to the *waitTime*;

2> inform upper layers that access barring is applicable for all access categories except categories '0' and '2'.

1> else:

2> if T302 is running:

3> stop timer T302;

3> perform the actions as specified in 5.3.14.4;

1> if T390 is running:

2> stop timer T390 for all access categories;

2> perform the actions as specified in 5.3.14.4;

1> if the UE is leaving RRC\_INACTIVE:

2> if going to RRC\_IDLE was not triggered by reception of the *RRCRelease message*:

3> if stored, discard the cell reselection priority information provided by the *cellReselectionPriorities*;

3> stop the timer T320, if running;

2> if SDT procedure is ongoing:

3> stop timer T319a, if running;

3> consider SDT procedure is not ongoing;

1> stop all timers that are running except T302, T320, T325, T330, T331, T400 and T430;

1> discard the UE Inactive AS context, if any;

1> release the *suspendConfig*, if configured;

1> release the *uav-Config*, if configured;

1> perform LTM configuration release procedure for the MCG and SCG as specified in clause 5.3.5.18.7;

1> remove all the entries within the MCG and the SCG *VarConditionalReconfig*, if any;

1> remove the *servingSecurityCellSetId* within the *VarServingSecurityCellSetID*, if any;

1> for each *measId*, if the associated *reportConfig* has a *reportType* set to *condTriggerConfig*:

2> for the associated *reportConfigId*:

3> remove the entry with the matching *reportConfigId* from the *reportConfigList* within the *VarMeasConfig*;

2> if the associated *measObjectId* is only associated to a *reportConfig* with *reportType* set to *condTriggerConfig*:

3> remove the entry with the matching *measObjectId* from the *measObjectList* within the *VarMeasConfig*;

2> remove the entry with the matching *measId* from the *measIdList* within the *VarMeasConfig*;

1> discard the KgNB key, the S-KgNB key, the S-KeNB key, the KRRCenc key, the KRRCint key, the KUPint key and the KUPenc key, if any;

1> release all radio resources, including release of the RLC entity, the BAP entity, the MAC configuration and the associated PDCP entity and SDAP for all established RBs (except for broadcast MRBs), BH RLC channels, Uu Relay RLC channels, PC5 Relay RLC channels and SRAP entity;

NOTE 0: A L2 U2N Relay UE may re-establish the SL-RLC0, SL-RLC1 and SRAP entity after release.

1> indicate the release of the RRC connection to upper layers together with the release cause;

1> for each application layer measurement configuration for which *configForRRC-IdleInactive* is not set to *true*:

2> inform upper layers about the release of all application layer measurement configurations;

2> discard any application layer measurement reports which were not yet submitted to lower layers for transmission;

1> for each application layer measurement configuration for which *configForRRC-IdleInactive* is set to *true*:

2> initiate the procedure in 5.5b.1.2;

1> discard any segments of segmented RRC messages stored according to 5.7.6.3;

1> except if going to RRC\_IDLE was triggered by inter-RAT cell reselection while the UE is in RRC\_INACTIVE or RRC\_IDLE or when selecting an inter-RAT cell while T311 was running or when selecting an E-UTRA cell for EPS fallback for IMS voice as specified in 5.4.3.5:

2> if the UE is capable of L2 U2N Remote UE:

3> enter RRC\_IDLE, and perform either cell selection as specified in TS 38.304 [20], or relay selection as specified in clause 5.8.15.3, or both;

2> else:

3> enter RRC\_IDLE and perform cell selection as specified in TS 38.304 [20];

NOTE 1: Whether to release the PC5 unicast link is left to L2 U2N Remote UE's implementation.

NOTE 2: It is left to UE implementation whether to stop T430, if running, when going to RRC\_IDLE.

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| ***Next change*** |

#### 5.3.13.1b Conditions for initiating SDT

When requesting lower layers to check the conditions for initiating SDT, RRC indicates to lower layers whether the resume procedure is initiated for mobile originated or mobile terminated case.

A UE in RRC\_INACTIVE initiates the resume procedure for SDT when all of the following conditions are fulfilled:

1> for the resume procedure initiated by the upper layers (i.e. mobile originated case):

2> SIB1 includes sdt-ConfigCommon; and

2> *sdt-Config* is configured; and

2> all the pending data in UL is mapped to the radio bearers configured for SDT; and

2> for an (e)RedCap UE when (e)RedCap-specific initial downlink BWP includes no CD-SSB, *ncd-SSB-RedCapInitialBWP-SDT* is configured; and

2> lower layers indicate that conditions for initiating MO-SDT as specified in TS 38.321 [3] are fulfilled.

1> for the resume procedure initiated in response to RAN paging (i.e. mobile terminated case):

2> lower layers indicate that conditions for initiating MT-SDT as specified in TS 38.321 [3] are fulfilled.

NOTE: How the UE determines that all pending data in UL is mapped to radio bearers configured for SDT is left to UE implementation.

# 6 Protocol data units, formats and parameters (ASN.1)

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| ***Unchanged sections removed*** |

### 6.2.2 Message definitions

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| ***Unchanged IEs removed*** |

#### – *SIB1*

*SIB1* contains information relevant when evaluating if a UE is allowed to access a cell and defines the scheduling of other system information.It also contains radio resource configuration information that is common for all UEs and barring information applied to the unified access control.

Signalling radio bearer: N/A

RLC-SAP: TM

Logical channels: BCCH

Direction: Network to UE

*SIB1* message

-- ASN1START

-- TAG-SIB1-START

SIB1 ::= SEQUENCE {

cellSelectionInfo SEQUENCE {

q-RxLevMin Q-RxLevMin,

q-RxLevMinOffset INTEGER (1..8) OPTIONAL, -- Need S

q-RxLevMinSUL Q-RxLevMin OPTIONAL, -- Need R

q-QualMin Q-QualMin OPTIONAL, -- Need S

q-QualMinOffset INTEGER (1..8) OPTIONAL -- Need S

} OPTIONAL, -- Cond Standalone

cellAccessRelatedInfo CellAccessRelatedInfo,

connEstFailureControl ConnEstFailureControl OPTIONAL, -- Need R

si-SchedulingInfo SI-SchedulingInfo OPTIONAL, -- Need R

servingCellConfigCommon ServingCellConfigCommonSIB OPTIONAL, -- Need R

ims-EmergencySupport ENUMERATED {true} OPTIONAL, -- Need R

eCallOverIMS-Support ENUMERATED {true} OPTIONAL, -- Need R

ue-TimersAndConstants UE-TimersAndConstants OPTIONAL, -- Need R

uac-BarringInfo SEQUENCE {

uac-BarringForCommon UAC-BarringPerCatList OPTIONAL, -- Need S

uac-BarringPerPLMN-List UAC-BarringPerPLMN-List OPTIONAL, -- Need S

uac-BarringInfoSetList UAC-BarringInfoSetList,

uac-AccessCategory1-SelectionAssistanceInfo CHOICE {

plmnCommon UAC-AccessCategory1-SelectionAssistanceInfo,

individualPLMNList SEQUENCE (SIZE (2..maxPLMN)) OF UAC-AccessCategory1-SelectionAssistanceInfo

} OPTIONAL -- Need S

} OPTIONAL, -- Need R

useFullResumeID ENUMERATED {true} OPTIONAL, -- Need R

lateNonCriticalExtension OCTET STRING OPTIONAL,

nonCriticalExtension SIB1-v1610-IEs OPTIONAL

}

SIB1-v1610-IEs ::= SEQUENCE {

idleModeMeasurementsEUTRA-r16 ENUMERATED{true} OPTIONAL, -- Need R

idleModeMeasurementsNR-r16 ENUMERATED{true} OPTIONAL, -- Need R

posSI-SchedulingInfo-r16 PosSI-SchedulingInfo-r16 OPTIONAL, -- Need R

nonCriticalExtension SIB1-v1630-IEs OPTIONAL

}

SIB1-v1630-IEs ::= SEQUENCE {

uac-BarringInfo-v1630 SEQUENCE {

uac-AC1-SelectAssistInfo-r16 SEQUENCE (SIZE (2..maxPLMN)) OF UAC-AC1-SelectAssistInfo-r16

} OPTIONAL, -- Need R

nonCriticalExtension SIB1-v1700-IEs OPTIONAL

}

SIB1-v1700-IEs ::= SEQUENCE {

hsdn-Cell-r17 ENUMERATED {true} OPTIONAL, -- Need R

uac-BarringInfo-v1700 SEQUENCE {

uac-BarringInfoSetList-v1700 UAC-BarringInfoSetList-v1700

} OPTIONAL, -- Cond MINT

sdt-ConfigCommon-r17 SDT-ConfigCommonSIB-r17 OPTIONAL, -- Need R

redCap-ConfigCommon-r17 RedCap-ConfigCommonSIB-r17 OPTIONAL, -- Need R

featurePriorities-r17 SEQUENCE {

redCapPriority-r17 FeaturePriority-r17 OPTIONAL, -- Need R

slicingPriority-r17 FeaturePriority-r17 OPTIONAL, -- Need R

msg3-Repetitions-Priority-r17 FeaturePriority-r17 OPTIONAL, -- Need R

sdt-Priority-r17 FeaturePriority-r17 OPTIONAL -- Need R

} OPTIONAL, -- Need R

si-SchedulingInfo-v1700 SI-SchedulingInfo-v1700 OPTIONAL, -- Need R

hyperSFN-r17 BIT STRING (SIZE (10)) OPTIONAL, -- Need R

eDRX-AllowedIdle-r17 ENUMERATED {true} OPTIONAL, -- Need R

eDRX-AllowedInactive-r17 ENUMERATED {true} OPTIONAL, -- Cond EDRX-RC

intraFreqReselectionRedCap-r17 ENUMERATED {allowed, notAllowed} OPTIONAL, -- Need S

cellBarredNTN-r17 ENUMERATED {barred, notBarred} OPTIONAL, -- Need S

nonCriticalExtension SIB1-v1740-IEs OPTIONAL

}

SIB1-v1740-IEs ::= SEQUENCE {

si-SchedulingInfo-v1740 SI-SchedulingInfo-v1740 OPTIONAL, -- Need R

nonCriticalExtension SIB1-v1800-IEs OPTIONAL

}

SIB1-v1800-IEs ::= SEQUENCE {

ncr-Support-r18 ENUMERATED {true} OPTIONAL, -- Need S

mt-SDT-ConfigCommonSIB-r18 MT-SDT-ConfigCommonSIB-r18 OPTIONAL, -- Need R

musim-CapRestrictionAllowed-r18 ENUMERATED {true} OPTIONAL, -- Need R

featurePriorities-v1800 SEQUENCE {

msg1-Repetitions-Priority-r18 FeaturePriority-r17 OPTIONAL, -- Need R

eRedCapPriority-r18 FeaturePriority-r17 OPTIONAL -- Need R

} OPTIONAL, -- Need R

si-SchedulingInfo-v1800 SI-SchedulingInfo-v1800 OPTIONAL, -- Need R

cellBarredATG-r18 ENUMERATED {barred, notBarred} OPTIONAL, -- Need S

cellBarredNES-r18 ENUMERATED {notBarred} OPTIONAL, -- Need R

mobileIAB-Cell-r18 ENUMERATED {true} OPTIONAL, -- Need R

eDRX-AllowedInactive-r18 ENUMERATED {true} OPTIONAL, -- Cond EDRX-RC

intraFreqReselection-eRedCap-r18 ENUMERATED {allowed, notAllowed} OPTIONAL, -- Need S

nonServingCellMII-r18 ENUMERATED {true} OPTIONAL, -- Need R

nonCriticalExtension SEQUENCE {} OPTIONAL

}

UAC-AccessCategory1-SelectionAssistanceInfo ::= ENUMERATED {a, b, c}

UAC-AC1-SelectAssistInfo-r16 ::= ENUMERATED {a, b, c, notConfigured}

SDT-ConfigCommonSIB-r17 ::= SEQUENCE {

sdt-RSRP-Threshold-r17 RSRP-Range OPTIONAL, -- Need R

sdt-LogicalChannelSR-DelayTimer-r17 ENUMERATED { sf20, sf40, sf64, sf128, sf512, sf1024, sf2560, spare1} OPTIONAL, -- Need R

sdt-DataVolumeThreshold-r17 ENUMERATED {byte32, byte100, byte200, byte400, byte600, byte800, byte1000, byte2000, byte4000,

byte8000, byte9000, byte10000, byte12000, byte24000, byte48000, byte96000},

t319a-r17 ENUMERATED { ms100, ms200, ms300, ms400, ms600, ms1000, ms2000,

ms3000, ms4000, spare7, spare6, spare5, spare4, spare3, spare2, spare1}

}

RedCap-ConfigCommonSIB-r17 ::= SEQUENCE {

halfDuplexRedCapAllowed-r17 ENUMERATED {true} OPTIONAL, -- Need R

cellBarredRedCap-r17 SEQUENCE {

cellBarredRedCap1Rx-r17 ENUMERATED {barred, notBarred},

cellBarredRedCap2Rx-r17 ENUMERATED {barred, notBarred}

} OPTIONAL, -- Need R

...,

[[

cellBarredRedCap-r18 SEQUENCE {

cellBarred-eRedCap1Rx-r18 ENUMERATED {barred, notBarred},

cellBarred-eRedCap2Rx-r18 ENUMERATED {barred, notBarred}

} OPTIONAL -- Need R

]]

}

FeaturePriority-r17 ::= INTEGER (0..7)

MT-SDT-ConfigCommonSIB-r18 ::= SEQUENCE {

mt-SDT-RSRP-Threshold-r18 RSRP-Range OPTIONAL, -- Need S

sdt-LogicalChannelSR-DelayTimer-r18 ENUMERATED { sf20, sf40, sf64, sf128, sf512, sf1024, sf2560, spare1} OPTIONAL, -- Cond MT-SDT1

t319a-r18 ENUMERATED { ms100, ms200, ms300, ms400, ms600, ms1000, ms2000,

ms3000, ms4000, spare7, spare6, spare5, spare4,

spare3, spare2, spare1} OPTIONAL -- Cond MT-SDT2

}

-- TAG-SIB1-STOP

-- ASN1STOP

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| *SIB1* field descriptions |
| ***cellBarredATG***  Value *barred* means that the cell is barred for connectivity to ATG, as defined in TS 38.304 [20]. Value *notBarred* means that the cell is allowed for connectivity to ATG. If not present, the UE considers the cell is not allowed for connectivity to ATG, as defined in TS 38.304 [20]. This field is only applicable to ATG-capable UEs. |
| ***cellBarred-eRedCap1Rx***  Value *barred* means that the cell is barred for an eRedCap UE with 1 Rx branch, as defined in TS 38.304 [20]. This field is ignored by non-eRedCap UEs. |
| ***cellBarred-eRedCap2Rx***  Value *barred* means that the cell is barred for an eRedCap UE with 2 Rx branches, as defined in TS 38.304 [20]. This field is ignored by non-eRedCap UEs. |
| ***cellBarredNES***  The presence of this field indicates that the cell is allowed for UEs supporting NES cell DTX/DRX. |
| ***cellBarredNTN***  Value *barred* means that the cell is barred for connectivity to NTN, as defined in TS 38.304 [20]. Value *notBarred* means that the cell is allowed for connectivity to NTN. If not present, the UE considers the cell is not allowed for connectivity to NTN, as defined in TS 38.304 [20]. This field is only applicable to NTN-capable UEs. |
| ***cellBarredRedCap1Rx***  Value *barred* means that the cell is barred for a RedCap UE with 1 Rx branch, as defined in TS 38.304 [20]. This field is ignored by non-RedCap UEs. |
| ***cellBarredRedCap2Rx***  Value *barred* means that the cell is barred for a RedCap UE with 2 Rx branches, as defined in TS 38.304 [20]. This field is ignored by non-RedCap UEs. |
| ***cellSelectionInfo***  Parameters for cell selection related to the serving cell. |
| ***eCallOverIMS-Support***  Indicates whether the cell supports eCall over IMS services as defined in TS 23.501 [32]. If absent, eCall over IMS is not supported by the network in the cell. |
| ***eDRX-AllowedIdle***  The presence of this field indicates that extended DRX for CN paging is allowed in the cell for UEs in RRC\_IDLE or RRC\_INACTIVE. The UE shall stop using extended DRX for CN paging in RRC\_IDLE or RRC\_INACTIVE if *eDRX-AllowedIdle* is not present. |
| ***eDRX-AllowedInactive***  The presence of *eDRX-AllowedInactive-r17* this field indicates that extended DRX cycle equal to or shorter than 10.24 s for RAN paging is allowed in the cell for UEs in RRC\_INACTIVE. The UE shall stop using extended DRX cycle equal to or shorter than 10.24 s for RAN paging in RRC\_INACTIVE if *eDRX-AllowedInactive-r17* is not present. The presence of *eDRX-AllowedInactive-r18* indicates that extended DRX cycle longer than 10.24 s for RAN paging is allowed in the cell for UEs in RRC\_INACTIVE. The UE shall stop using extended DRX cycle longer than 10.24 s for RAN paging in RRC\_INACTIVE if *eDRX-AllowedInactive-r18* is not present. |
| ***featurePriorities***  Indicates priorities for features, such as (e)RedCap, Slicing, SDT, MSG1-Repetitions and MSG3-Repetitions for Coverage Enhancements. These priorities are used to determine which *FeatureCombinationPreambles* the UE shall use when a feature maps to more than one *FeatureCombinationPreambles*, as specified in TS 38.321 [3]. A lower value means a higher priority. The network does not signal the same priority for more than one feature. The network signals a priority for all feature that map to at least one *FeatureCombinationPreambles*. |
| ***halfDuplexRedCap-Allowed***  The presence of this field indicates that the cell supports half-duplex FDD (e)RedCap UEs. |
| ***hsdn-Cell***  This field indicates this is a HSDN cell as specified in TS 38.304 [20]. |
| ***hyperSFN***  Indicates hyper SFN which increments by one when the SFN wraps around. This field is excluded when determining changes in system information, i.e. changes of hyper SFN should not result in system information change notifications. |
| ***idleModeMeasurementsEUTRA***  This field indicates that a UE that is configured for EUTRA idle/inactive measurements shall perform the measurements while camping in this cell and report availability of these measurements when establishing or resuming a connection in this cell. If absent, a UE is not required to perform EUTRA idle/inactive measurements. |
| ***idleModeMeasurementsNR***  This field indicates that a UE that is configured for NR idle/inactive measurements shall perform the measurements while camping in this cell and report availability of these measurements when establishing or resuming a connection in this cell. If absent, a UE is not required to perform NR idle/inactive measurements. |
| ***ims-EmergencySupport***  Indicates whether the cell supports IMS emergency bearer services for UEs in limited service mode. If absent, IMS emergency call is not supported by the network in the cell for UEs in limited service mode. |
| ***intraFreqReselection-eRedCap***  Controls cell selection/reselection to intra-frequency cells for eRedCap UEs when this cell is barred, or treated as barred by the eRedCap UE, as specified in TS 38.304 [20]. If not present, an eRedCap UE treats the cell as barred, i.e., the UE considers that the cell does not support eRedCap. |
| ***intraFreqReselectionRedCap***  Controls cell selection/reselection to intra-frequency cells for RedCap UEs when this cell is barred, or treated as barred by the RedCap UE, as specified in TS 38.304 [20]. If not present, a RedCap UE treats the cell as barred, i.e.,the UE considers that the cell does not support RedCap. |
| ***mobileIAB-Cell***  The presence of this field indicates that this is a mobile IAB cell. |
| ***mt-SDT-RSRP-Threshold***  RSRP threshold used to determine whether MT-SDT procedure can be initiated, as specified in TS 38.321 [3]. If the field is absent, and the field *sdt-RSRP-Threshold* is present, the UE applies the value in the field *sdt-RSRP-Threshold*. |
| ***musim-CapRestrictionAllowed***  Indicates the UE is allowed to send the *musim-CapRestrictionInd* in *RRCSetupComplete* and *RRCResumeComplete* messages. |
| ***ncr-Support***  This field combines both the support of NCR and the cell status for NCR. If the field is present, the cell supports NCR and the cell is also considered as a candidate for cell (re)selection for NCR-node; if the field is absent, the cell does not support NCR and/or the cell is barred for NCR-node. |
| ***nonServingCellMII***  Indicates whether the *MBSInterestIndication* message for MBS broadcast reception on a non-serving cell is allowed to be transmitted to the serving gNB. |
| ***q-QualMin***  Parameter "Qqualmin" in TS 38.304 [20], applicable for serving cell. If the field is absent, the UE applies the (default) value of negative infinity for Qqualmin. |
| ***q-QualMinOffset***  Parameter "Qqualminoffset" in TS 38.304 [20]. Actual value Qqualminoffset = field value [dB]. If the field is absent, the UE applies the (default) value of 0 dB for Qqualminoffset.Affects the minimum required quality level in the cell. |
| ***q-RxLevMin***  Parameter "Qrxlevmin" in TS 38.304 [20], applicable for serving cell. |
| ***q-RxLevMinOffset***  Parameter "Qrxlevminoffset" in TS 38.304 [20]. Actual value Qrxlevminoffset = field value \* 2 [dB]. If absent, the UE applies the (default) value of 0 dB for Qrxlevminoffset*.* Affects the minimum required Rx level in the cell. |
| ***q-RxLevMinSUL***  Parameter "Qrxlevmin" in TS 38.304 [20], applicable for serving cell. |
| ***sdt-DataVolumeThreshold***  Data volume threshold used to determine whether SDT can be initiated, as specified in TS 38.321 [3]. Value *byte32* corresponds to 32 bytes, value *byte100* corresponds to 100 bytes, and so on. |
| ***sdt-LogicalChannelSR-DelayTimer***  The value of *logicalChannelSR-DelayTimer* applied during SDT for logical channels configured with SDT, as specified in TS 38.321 [3]. Value in number of subframes. Value *sf20* corresponds to 20 subframes, *sf40* corresponds to 40 subframes, and so on. If *sdt-LogicalChannelSR-DelayTimer-r18* is absent and *sdt-LogicalChannelSR-DelayTimer-r17* is present then, the UE applies the value configured in *sdt-LogicalChannelSR-DelayTimer-r17* for this field. If this field is not configured, then logicalChannelSR-DelayTimer is not applied for SDT logical channels. |
| ***sdt-RSRP-Threshold***  RSRP threshold used to determine whether SDT procedure can be initiated, as specified in TS 38.321 [3]. |
| ***servingCellConfigCommon***  Configuration of the serving cell. |
| ***t319a***  Initial value of the timer T319a used for detection of SDT failure. Value *ms100* corresponds to 100 milliseconds, value *ms200* corresponds to 200 milliseconds and so on. If *t319a-r18* is absent, the UE applies the value configured in *t319a-r17.* |
| ***uac-AccessCategory1-SelectionAssistanceInfo***  Information used to determine whether Access Category 1 applies to the UE, as defined in TS 22.261 [25]. If *plmnCommon* is chosen, the *UAC-AccessCategory1-SelectionAssistanceInfo* is applicable to all the PLMNs and SNPNs in *plmn-IdentityInfoList* and *npn-IdentityInfoList*. If *individualPLMNList* is chosen, the 1st entry in the list corresponds to the first network within all of the PLMNs and SNPNs across the *plmn-IdentityList* and the *npn-IdentityInfoList*, the 2nd entry in the list corresponds to the second network within all of the PLMNs and SNPNs across the *plmn-IdentityList* and the *npn-IdentityInfoList* and so on. If *uac-AC1-SelectAssistInfo-r16* is present, the UE shall ignore the *uac-AccessCategory1-SelectionAssistanceInfo*. |
| ***uac-AC1-SelectAssistInfo***  Information used to determine whether Access Category 1 applies to the UE, as defined in TS 22.261 [25]. The 1st entry in the list corresponds to the first network within all of the PLMNs and SNPNs across the *plmn-IdentityList* and *npn-IdentityInfoList*, the 2nd entry in the list corresponds to the second network within all of the PLMNs and SNPNs across the *plmn-IdentityList* and the *npn-IdentityInfoList* and so on. Value *notConfigured* indicates that Access Category1 is not configured for the corresponding PLMN/SNPN. |
| ***uac-BarringForCommon***  Common access control parameters for each access category. Common values are used for all PLMNs/SNPNs, unless overwritten by the PLMN/SNPN specific configuration provided in *uac-BarringPerPLMN-List*. The parameters are specified by providing an index to the set of configurations (*uac-BarringInfoSetList*). UE behaviour upon absence of this field is specified in clause 5.3.14.2. |
| ***ue-TimersAndConstants***  Timer and constant values to be used by the UE. The cell operating as PCell always provides this field. |
| ***useFullResumeID***  Indicates which resume identifier and Resume request message should be used. UE uses *fullI-RNTI* and *RRCResumeRequest1* if the field is present, or *shortI-RNTI* and *RRCResumeRequest* if the field is absent. |

|  |  |
| --- | --- |
| Conditional Presence | Explanation |
| *EDRX-RC* | The field is optionally present, Need R, in a cell that enables *eDRX-AllowedIdle*, otherwise it is absent. |
| *MINT* | The field is optionally present, Need R, in a cell that provides a configuration for disaster roaming, otherwise it is absent, Need R. |
| *MT-SDT1* | This field is optionally present, Need S, in a cell that supports MT-SDT if *sdt-ConfigCommon-r17* is not present, otherwise it is absent. |
| *MT-SDT2* | This field is mandatory present in a cell that supports MT-SDT if *sdt-ConfigCommon-r17* is not present, otherwise it is absent. |
| *Standalone* | The field is mandatory present in a cell that supports standalone operation, otherwise it is absent. |

|  |
| --- |
| ***Unchanged sections removed*** |

### 6.3.2 Radio resource control information elements

|  |
| --- |
| ***Unchanged IEs removed*** |

#### – *ConfiguredGrantConfig*

The IE *ConfiguredGrantConfig* is used to configure uplink transmission without dynamic grant according to two possible schemes. The actual uplink grant may either be configured via RRC (*type1*) or provided via the PDCCH (addressed to CS-RNTI) (*type2*). Multiple Configured Grant configurations may be configured in one BWP of a serving cell.

*ConfiguredGrantConfig* information element

-- ASN1START

-- TAG-CONFIGUREDGRANTCONFIG-START

ConfiguredGrantConfig ::= SEQUENCE {

frequencyHopping ENUMERATED {intraSlot, interSlot} OPTIONAL, -- Need S

cg-DMRS-Configuration DMRS-UplinkConfig,

mcs-Table ENUMERATED {qam256, qam64LowSE} OPTIONAL, -- Need S

mcs-TableTransformPrecoder ENUMERATED {qam256, qam64LowSE} OPTIONAL, -- Need S

uci-OnPUSCH SetupRelease { CG-UCI-OnPUSCH } OPTIONAL, -- Need M

resourceAllocation ENUMERATED { resourceAllocationType0, resourceAllocationType1, dynamicSwitch },

rbg-Size ENUMERATED {config2} OPTIONAL, -- Need S

powerControlLoopToUse ENUMERATED {n0, n1},

p0-PUSCH-Alpha P0-PUSCH-AlphaSetId,

transformPrecoder ENUMERATED {enabled, disabled} OPTIONAL, -- Need S

nrofHARQ-Processes INTEGER(1..16),

repK ENUMERATED {n1, n2, n4, n8},

repK-RV ENUMERATED {s1-0231, s2-0303, s3-0000} OPTIONAL, -- Need R

periodicity ENUMERATED {

sym2, sym7, sym1x14, sym2x14, sym4x14, sym5x14, sym8x14, sym10x14, sym16x14, sym20x14,

sym32x14, sym40x14, sym64x14, sym80x14, sym128x14, sym160x14, sym256x14, sym320x14, sym512x14,

sym640x14, sym1024x14, sym1280x14, sym2560x14, sym5120x14,

sym6, sym1x12, sym2x12, sym4x12, sym5x12, sym8x12, sym10x12, sym16x12, sym20x12, sym32x12,

sym40x12, sym64x12, sym80x12, sym128x12, sym160x12, sym256x12, sym320x12, sym512x12, sym640x12,

sym1280x12, sym2560x12

},

configuredGrantTimer INTEGER (1..64) OPTIONAL, -- Need R

rrc-ConfiguredUplinkGrant SEQUENCE {

timeDomainOffset INTEGER (0..5119),

timeDomainAllocation INTEGER (0..15),

frequencyDomainAllocation BIT STRING (SIZE(18)),

antennaPort INTEGER (0..31),

dmrs-SeqInitialization INTEGER (0..1) OPTIONAL, -- Need R

precodingAndNumberOfLayers INTEGER (0..63),

srs-ResourceIndicator INTEGER (0..15) OPTIONAL, -- Need R

mcsAndTBS INTEGER (0..31),

frequencyHoppingOffset INTEGER (1.. maxNrofPhysicalResourceBlocks-1) OPTIONAL, -- Need R

pathlossReferenceIndex INTEGER (0..maxNrofPUSCH-PathlossReferenceRSs-1),

...,

[[

pusch-RepTypeIndicator-r16 ENUMERATED {pusch-RepTypeA,pusch-RepTypeB} OPTIONAL, -- Need M

frequencyHoppingPUSCH-RepTypeB-r16 ENUMERATED {interRepetition, interSlot} OPTIONAL, -- Cond RepTypeB

timeReferenceSFN-r16 ENUMERATED {sfn512} OPTIONAL -- Need S

]],

[[

pathlossReferenceIndex2-r17 INTEGER (0..maxNrofPUSCH-PathlossReferenceRSs-1) OPTIONAL, -- Need R

srs-ResourceIndicator2-r17 INTEGER (0..15) OPTIONAL, -- Need R

precodingAndNumberOfLayers2-r17 INTEGER (0..63) OPTIONAL, -- Need R

timeDomainAllocation-v1710 INTEGER (16..63) OPTIONAL, -- Need M

timeDomainOffset-r17 INTEGER (0..40959) OPTIONAL, -- Need R

cg-SDT-Configuration-r17 CG-SDT-Configuration-r17 OPTIONAL -- Need M

]],

[[

srs-ResourceSetId-r18 SRS-ResourceSetId OPTIONAL, -- Need R

cg-mIAB-Configuration-r18 CG-mIAB-Configuration-r18 OPTIONAL, -- Cond RACHlessHO

cg-LTM-Configuration-r18 CG-LTM-Configuration-r18 OPTIONAL, -- Cond LTM

cg-SDT-PeriodicityExt-r18 ENUMERATED {

sym1x14x1280, sym2x14x1280, sym4x14x1280 , sym8x14x1280, sym16x14x1280,

sym32x14x1280, sym48x14x1280, sym64x14x1280, sym96x14x1280, sym128x14x1280,

sym192x14x1280, sym240x14x1280, sym256x14x1280, sym384x14x1280, sym472x14x1280,

sym480x14x1280, sym512x14x1280, sym768x14x1280, sym944x14x1280, sym960x14x1280,

sym1408x14x1280, sym1536x14x1280, sym1888x14x1280, sym1920x14x1280,

sym2816x14x1280, sym3072x14x1280, sym3776x14x1280, sym5632x14x1280,

sym6144x14x1280, sym7552x14x1280, sym7680x14x1280, sym11264x14x1280,

sym15104x14x1280, sym15360x14x1280, sym22528x14x1280, sym30208x14x1280,

sym45056x14x1280, sym60416x14x1280, sym90112x14x1280, sym180224x14x1280,

sym4x12x1280, sym8x12x1280, sym16x12x1280, sym32x12x1280, sym192x12x1280,

sym384x12x1280, sym960x12x1280, sym1888x12x1280, sym3776x12x1280,

sym5632x12x1280, sym11264x12x1280, spare13, spare12, spare11, spare10, spare9,

spare8, spare7, spare6, spare5, spare4, spare3, spare2, spare1

} OPTIONAL, -- Need R

timeReferenceHyperSFN-r18 INTEGER (0..1023) OPTIONAL, -- Need R

cg-NTN-RACH-Less-Configuration-r18 CG-NTN-RACH-Less-Configuration-r18 OPTIONAL -- Cond RACH-lessHO

]]

} OPTIONAL, -- Need R

...,

[[

cg-RetransmissionTimer-r16 INTEGER (1..64) OPTIONAL, -- Need R

cg-minDFI-Delay-r16 ENUMERATED

{sym7, sym1x14, sym2x14, sym3x14, sym4x14, sym5x14, sym6x14, sym7x14, sym8x14,

sym9x14, sym10x14, sym11x14, sym12x14, sym13x14, sym14x14,sym15x14, sym16x14

} OPTIONAL, -- Need R

cg-nrofPUSCH-InSlot-r16 INTEGER (1..7) OPTIONAL, -- Need R

cg-nrofSlots-r16 INTEGER (1..40) OPTIONAL, -- Need R

cg-StartingOffsets-r16 CG-StartingOffsets-r16 OPTIONAL, -- Need R

cg-UCI-Multiplexing-r16 ENUMERATED {enabled} OPTIONAL, -- Need R

cg-COT-SharingOffset-r16 INTEGER (1..39) OPTIONAL, -- Need R

betaOffsetCG-UCI-r16 INTEGER (0..31) OPTIONAL, -- Need R

cg-COT-SharingList-r16 SEQUENCE (SIZE (1..1709)) OF CG-COT-Sharing-r16 OPTIONAL, -- Need R

harq-ProcID-Offset-r16 INTEGER (0..15) OPTIONAL, -- Need M

harq-ProcID-Offset2-r16 INTEGER (0..15) OPTIONAL, -- Need M

configuredGrantConfigIndex-r16 ConfiguredGrantConfigIndex-r16 OPTIONAL, -- Cond CG-List

configuredGrantConfigIndexMAC-r16 ConfiguredGrantConfigIndexMAC-r16 OPTIONAL, -- Cond CG-IndexMAC

periodicityExt-r16 INTEGER (1..5120) OPTIONAL, -- Need R

startingFromRV0-r16 ENUMERATED {on, off} OPTIONAL, -- Need R

phy-PriorityIndex-r16 ENUMERATED {p0, p1} OPTIONAL, -- Need R

autonomousTx-r16 ENUMERATED {enabled} OPTIONAL -- Cond LCH-BasedPrioritization

]],

[[

cg-betaOffsetsCrossPri0-r17 SetupRelease { BetaOffsetsCrossPriSelCG-r17 } OPTIONAL, -- Need M

cg-betaOffsetsCrossPri1-r17 SetupRelease { BetaOffsetsCrossPriSelCG-r17 } OPTIONAL, -- Need M

mappingPattern-r17 ENUMERATED {cyclicMapping, sequentialMapping} OPTIONAL, -- Cond SRSsets

sequenceOffsetForRV-r17 INTEGER (0..3) OPTIONAL, -- Need R

p0-PUSCH-Alpha2-r17 P0-PUSCH-AlphaSetId OPTIONAL, -- Need R

powerControlLoopToUse2-r17 ENUMERATED {n0, n1} OPTIONAL, -- Need R

cg-COT-SharingList-r17 SEQUENCE (SIZE (1..50722)) OF CG-COT-Sharing-r17 OPTIONAL, -- Need R

periodicityExt-r17 INTEGER (1..40960) OPTIONAL, -- Need R

repK-v1710 ENUMERATED {n12, n16, n24, n32} OPTIONAL, -- Need R

nrofHARQ-Processes-v1700 INTEGER(17..32) OPTIONAL, -- Need M

harq-ProcID-Offset2-v1700 INTEGER (16..31) OPTIONAL, -- Need R

configuredGrantTimer-v1700 INTEGER(33..288) OPTIONAL, -- Need R

cg-minDFI-Delay-v1710 INTEGER (238..3584) OPTIONAL -- Need R

]],

[[

harq-ProcID-Offset-v1730 INTEGER (16..31) OPTIONAL, -- Need R

cg-nrofSlots-r17 INTEGER (1..320) OPTIONAL -- Need R

]],

[[

applyIndicatedTCI-State-r18 ENUMERATED {first, second, both} OPTIONAL, -- Need R

disableCG-RetransmissionMonitoring-r18 ENUMERATED {true} OPTIONAL, -- Need R

nrofSlotsInCG-Period-r18 INTEGER (2..32) OPTIONAL, -- Need R

nrofBitsInUTO-UCI-r18 INTEGER (3..8) OPTIONAL, -- Need R

betaOffsetUTO-UCI-r18 INTEGER (0..31) OPTIONAL -- Need R

]]

}

CG-UCI-OnPUSCH ::= CHOICE {

dynamic SEQUENCE (SIZE (1..4)) OF BetaOffsets,

semiStatic BetaOffsets

}

CG-COT-Sharing-r16 ::= CHOICE {

noCOT-Sharing-r16 NULL,

cot-Sharing-r16 SEQUENCE {

duration-r16 INTEGER (1..39),

offset-r16 INTEGER (1..39),

channelAccessPriority-r16 INTEGER (1..4)

}

}

CG-COT-Sharing-r17 ::= CHOICE {

noCOT-Sharing-r17 NULL,

cot-Sharing-r17 SEQUENCE {

duration-r17 INTEGER (1..319),

offset-r17 INTEGER (1..319)

}

}

CG-StartingOffsets-r16 ::= SEQUENCE {

cg-StartingFullBW-InsideCOT-r16 SEQUENCE (SIZE (1..7)) OF INTEGER (0..6) OPTIONAL, -- Need R

cg-StartingFullBW-OutsideCOT-r16 SEQUENCE (SIZE (1..7)) OF INTEGER (0..6) OPTIONAL, -- Need R

cg-StartingPartialBW-InsideCOT-r16 INTEGER (0..6) OPTIONAL, -- Need R

cg-StartingPartialBW-OutsideCOT-r16 INTEGER (0..6) OPTIONAL -- Need R

}

BetaOffsetsCrossPriSelCG-r17 ::= CHOICE {

dynamic-r17 SEQUENCE (SIZE (1..4)) OF BetaOffsetsCrossPri-r17,

semiStatic-r17 BetaOffsetsCrossPri-r17

}

CG-SDT-Configuration-r17 ::= SEQUENCE {

cg-SDT-RetransmissionTimer INTEGER (1..64) OPTIONAL, -- Need R

sdt-SSB-Subset-r17 CHOICE {

shortBitmap-r17 BIT STRING (SIZE (4)),

mediumBitmap-r17 BIT STRING (SIZE (8)),

longBitmap-r17 BIT STRING (SIZE (64))

} OPTIONAL, -- Need S

sdt-SSB-PerCG-PUSCH-r17 ENUMERATED {oneEighth, oneFourth, half, one, two, four, eight, sixteen} OPTIONAL, -- Need M

sdt-P0-PUSCH-r17 INTEGER (-16..15) OPTIONAL, -- Need M

sdt-Alpha-r17 ENUMERATED {alpha0, alpha04, alpha05, alpha06, alpha07, alpha08, alpha09, alpha1} OPTIONAL, -- Need M

sdt-DMRS-Ports-r17 CHOICE {

dmrsType1-r17 BIT STRING (SIZE (8)),

dmrsType2-r17 BIT STRING (SIZE (12))

} OPTIONAL, -- Need M

sdt-NrofDMRS-Sequences-r17 INTEGER (1..2) OPTIONAL -- Need M

}

CG-mIAB-Configuration-r18 ::= SEQUENCE {

mIAB-RSRP-ThresholdSSB-r18 RSRP-Range,

mIAB-SSB-PerCG-PUSCH-r18 ENUMERATED {oneEighth, oneFourth, half, one, two, four, eight, sixteen},

mIAB-SSB-Subset-r18 CHOICE {

shortBitmap-r18 BIT STRING (SIZE (4)),

mediumBitmap-r18 BIT STRING (SIZE (8)),

longBitmap-r18 BIT STRING (SIZE (64))

},

mIAB-DMRS-Ports-r18 CHOICE {

dmrsType1-r18 BIT STRING (SIZE (8)),

dmrsType2-r18 BIT STRING (SIZE (12))

} OPTIONAL, -- Need R

mIAB-NrofDMRS-Sequences-r18 INTEGER (1..2) OPTIONAL -- Need R

}

CG-LTM-Configuration-r18 ::= SEQUENCE {

cg-LTM-RetransmissionTimer-r18 INTEGER (1..64) OPTIONAL, -- Need R

ltm-SSB-Subset-r18 CHOICE {

shortBitmap-r18 BIT STRING (SIZE (4)),

mediumBitmap-r18 BIT STRING (SIZE (8)),

longBitmap-r18 BIT STRING (SIZE (64))

} OPTIONAL, -- Need S

ltm-SSB-PerCG-PUSCH-r18 ENUMERATED {oneEighth, oneFourth, half, one, two, four, eight, sixteen}

OPTIONAL, -- Need M

sdt-P0-PUSCH-r18 INTEGER (-16..15) OPTIONAL, -- Need M

sdt-Alpha-r18 ENUMERATED {alpha0, alpha04, alpha05, alpha06, alpha07, alpha08, alpha09, alpha1}

OPTIONAL, -- Need M

ltm-DMRS-Ports-r18 CHOICE {

dmrsType1-r18 BIT STRING (SIZE (8)),

dmrsType2-r18 BIT STRING (SIZE (12))

} OPTIONAL, -- Need M

ltm-NrofDMRS-Sequences-r18 INTEGER (1..2) OPTIONAL -- Need M

}

CG-NTN-RACH-Less-Configuration-r18 ::= SEQUENCE {

ntn-cg-RACH-less-RetransmissionTimer INTEGER (1..64) OPTIONAL, -- Need R

ntn-RSRP-ThresholdSSB-r18 RSRP-Range,

ntn-SSB-PerCG-PUSCH-r18 ENUMERATED {oneEighth, oneFourth, half, one, two, four, eight, sixteen},

ntn-SSB-Subset-r18 CHOICE {

shortBitmap-r18 BIT STRING (SIZE (4)),

mediumBitmap-r18 BIT STRING (SIZE (8)),

longBitmap-r18 BIT STRING (SIZE (64))

} OPTIONAL, -- Need R

ntn-DMRS-Ports-r18 CHOICE {

dmrsType1-r18 BIT STRING (SIZE (8)),

dmrsType2-r18 BIT STRING (SIZE (12))

} OPTIONAL, -- Need R

ntn-NrofDMRS-Sequences-r18 INTEGER (1..2) OPTIONAL -- Need R

}

-- TAG-CONFIGUREDGRANTCONFIG-STOP

-- ASN1STOP

|  |
| --- |
| *ConfiguredGrantConfig* field descriptions |
| ***antennaPort***  Indicates the antenna port(s) to be used for this configuration, and the maximum bitwidth is 5. See TS 38.214 [19], clause 6.1.2, and TS 38.212 [17], clause 7.3.1. The UE ignores this field in case of CG-SDT. |
| ***applyIndicatedTCI-State***  This field indicates, for PUSCH transmission(s) corresponding a Type1-CG configuration, if UE applies the first, the second or both "indicated" UL only TCI or joint TCI as specified in TS 38.214 [19], clause 5.1.5. If more than one value for the field *coresetPoolIndex* is configured in IE *controlResourceSet* for the BWP, the value 'first' corresponds to the "indicated" joint/UL TCI states specific to *coresetPoolIndex* value 0 and the value 'second' correspond to the *coresetPoolIndex* value 1, respectively. In this case, network does not configure the value 'both'. |
| ***autonomousTx***  If this field is present, the Configured Grant configuration is configured with autonomous transmission, see TS 38.321 [3]. |
| ***betaOffsetCG-UCI***  Beta offset for CG-UCI in CG-PUSCH, see TS 38.213 [13], clause 9.3 |
| ***betaOffsetUTO-UCI***  Beta offset value for UTO-UCI multiplexing on CG PUSCH, see TS 38.213 [13], clause 9.3. The network always configures *uto-UCI-BetaOffset* if *nrofBitsInUTO-UCI* is configured. |
| ***cg-betaOffsetsCrossPri0, cg-betaOffsetsCrossPri1***  Selection between and configuration of dynamic and semi-static beta-offset for multiplexing HARQ-ACK in CG-PUSCH with different priorities.  The field *cg-betaOffsetsCrossPri0* indicates multiplexing LP HARQ-ACK in HP CG-PUSCH. This field is configured only if *phy-PriorityIndex-r16* is configured with value *p1*.  The field *cg-betaOffsetsCrossPri1* indicates multiplexing HP HARQ-ACK in LP CG-PUSCH. This field is configured only if *phy-PriorityIndex-r16* is configured with value *p0*. |
| ***cg-COT-SharingList***  Indicates a table for COT sharing combinations (see 37.213 [48], clause 4.1.3). One row of the table can be set to noCOT-Sharing to indicate that there is no channel occupancy sharing. If the *cg-RetransmissionTimer-r16* is configured and the UE operates as an initiating device in semi-static channel access mode (see TS 37.213 [48], clause 4.3), then c*g-COT-SharingList-r16* is configured*.* |
| ***cg-COT-SharingOffset***  Indicates the offset from the end of the slot where the COT sharing indication in UCI is enabled where the offset in symbols is equal to 14\*n, where n is the signaled value for *cg-COT-SharingOffset*. Applicable when *ul-toDL-COT-SharingED-Threshold-r16* is not configured (see 37.213 [48], clause 4.1.3). |
| ***cg-DMRS-Configuration***  DMRS configuration (see TS 38.214 [19], clause 6.1.2.3). |
| ***cg-minDFI-Delay***  Indicates the minimum duration (in unit of symbols) from the ending symbol of the PUSCH to the starting symbol of the PDCCH containing the downlink feedback indication (DFI) carrying HARQ-ACK for this PUSCH. The HARQ-ACK received before this minimum duration is not considered as valid for this PUSCH (see TS 38.213 [13], clause 10.5). The following minimum duration values are supported, depending on the configured subcarrier spacing [symbols]:  15 kHz: 7, m\*14, where m = {1, 2, 3, 4}  30 kHz: 7, m\*14, where m = {1, 2, 3, 4, 5, 6, 7, 8}  60 kHz: 7, m\*14, where m = {1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16}  120 kHz: 7, m\*14, where m = {1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32}  480 kHz: m\*14, where m = {2, 4, 8, 12, 16, 20, 24, 28, 32, 36, 40, 44, 48, 52, 56, 60, 64, 68, 72, 76, 80, 84, 88, 92, 96, 100, 104, 108, 112, 116, 120, 124, 128}  960 kHz: m\*14, where m = {4, 8, 16, 24, 32, 40, 48, 56, 64, 72, 80, 88, 96, 104, 112, 120, 128, 136, 144, 152, 160, 168, 176, 184, 192, 200, 208, 216, 224, 232, 240, 248, 256} |
| ***cg-nrofPUSCH-InSlot***  Indicates the number of consecutive PUSCH configured to CG within a slot where the SLIV indicating the first PUSCH and additional PUSCH appended with the same length (see TS 38.214 [19], clause 6.1.2.3). The network can only configure this field if *cg-RetransmissionTimer* is configured. |
| ***cg-nrofSlots***  Indicates the number of allocated slots in a configured grant periodicity following the time instance of configured grant offset (see TS 38.214 [19], clause 6.1.2.3). *cg-nrofSlots-r17* is only applicable for operation with shared spectrum channel access in FR2-2. When *cg-nrofSlots-r17* is configured, the UE shall ignore *cg-nrofSlots-r16*. The network can only configure this field if *cg-RetransmissionTimer* is configured. |
| ***cg-RetransmissionTimer***  Indicates the initial value of the configured retransmission timer (see TS 38.321 [3]) in multiples of *periodicity*. The value of *cg-RetransmissionTimer* is always less than or equal to the value of *configuredGrantTimer.* This field is always configured together with *harq-ProcID-Offset*. This field is not configured for operation in licensed spectrum or simultaneously with *harq-ProcID-Offset2.* The network does not configure this field for CG-SDT. |
| ***cg-SDT-PeriodicityExt***  This field is used to calculate the periodicity for UL transmission without UL grant for type 1 (see TS 38.321 [3], clause 5.8.2) for extended CG-SDT periodicities. If this field is present, the fields *periodicity* and periodicityExt are ignored.  The following periodicities are supported depending on the configured subcarrier spacing [symbols]:  15 kHz: n\*14\*1280, where n={1, 2, 4, 8, 48, 96, 240, 472, 944, 1408, 2816}  30 kHz: n\*14\*1280, where n={2, 4, 8, 16, 96, 192, 480, 944, 1888, 2816, 5632}  60 kHz with normal CP n\*14\*1280, where n={4, 8, 16, 32, 192, 384, 960, 1888, 3776, 5632,11264}  60 kHz with ECP: n\*12\*1280, where n={4, 8, 16, 32, 192, 384, 960, 1888, 3776, 5632,11264}  120 kHz: n\*14\*1280, where n={8, 16, 32, 64, 384, 768, 1920, 3776, 7552, 11264, 22528}  480 kHz: n\*14\*1280, where n={32, 64, 128, 256, 1536, 3072, 7680, 15104, 30208, 45056, 90112}  960 kHz: n\*14\*1280, where n={64, 128, 256, 512, 3072, 6144, 15360, 30208, 60416, 90112, 180224} |
| ***cg-StartingOffsets***  This field is not applicable for a UE which is allowed to operate as an initiating device in semi-static channel access mode, i.e., not applicable for a UE configured with UE FFP parameters (e.g. period, offset) regardless whether the UE would initiate its own COT or would share gNB's COT. |
| ***cg-UCI-Multiplexing***  If present, this field indicates that in the case of PUCCH overlapping with CG-PUSCH(s) within a PUCCH group, the CG-UCI and HARQ-ACK are jointly encoded (see TS 38.213 [13], clause 9). |
| ***configuredGrantConfigIndex***  Indicates the index of the Configured Grant configurations within the BWP. |
| ***configuredGrantConfigIndexMAC***  Indicates the index of the Configured Grant configurations within the MAC entity. |
| ***disableCG-RetransmissionMonitoring***  Indicates that the UE shall disable monitoring for retransmissions corresponding to this *ConfiguredGrantConfig* when DRX is configured. When this field is configured, the UE does not start the *drx-HARQ-RTT-TimerUL* for PUSCH transmissions using configured uplink grants corresponding to this *ConfiguredGrantConfig*. See TS 38.321 [3], clause 5.7. |
| ***configuredGrantTimer***  Indicates the initial value of the configured grant timer (see TS 38.321 [3]) in multiples of periodicity. When *cg-RetransmissonTimer* is configured, if HARQ processes are shared among different configured grants on the same BWP, *configuredGrantTimer \* periodicity* is set to the same value for the configurations that share HARQ processes on this BWP. The value of the extension *configuredGrantTimer* is 2 times the configured value. |
| ***dmrs-SeqInitialization***  The network configures this field if *transformPrecoder* is disabled or when the value of *sdt-NrofDMRS-Sequences* is set to 1. Otherwise, the field is absent. |
| ***frequencyDomainAllocation***  Indicates the frequency domain resource allocation, see TS 38.214 [19], clause 6.1.2, and TS 38.212 [17], clause 7.3.1). |
| ***frequencyHopping***  The value *intraSlot* enables 'Intra-slot frequency hopping' and the value *interSlot* enables 'Inter-slot frequency hopping'. If the field is absent, frequency hopping is not configured. The field *frequencyHopping* applies to configured grant for 'pusch-RepTypeA' (see TS 38.214 [19], clause 6.3.1). |
| ***frequencyHoppingOffset***  Frequency hopping offset used when frequency hopping is enabled (see TS 38.214 [19], clause 6.1.2 and clause 6.3). |
| ***frequencyHoppingPUSCH-RepTypeB***  Indicates the frequency hopping scheme for Type 1 CG when *pusch-RepTypeIndicator* is set to 'pusch-RepTypeB' (see TS 38.214 [19], clause 6.1). The value *interRepetition* enables 'Inter-repetition frequency hopping', and the value *interSlot* enables 'Inter-slot frequency hopping'. If the field is absent, the frequency hopping is not enabled for Type 1 CG. |
| ***harq-ProcID-Offset***  For operation with shared spectrum channel access configured with *cg-RetransmissionTimer-r16*, this configures the range of HARQ process IDs which can be used for this configured grant where the UE can select a HARQ process ID within [*harq-procID-offset, ..,* (*harq-procID-offset + nrofHARQ-Processes* – 1)]. *harq-ProcID-Offset-v1730* is only applicable for operation with shared spectrum channel access in FR2-2*.* If the field *harq-ProcID-Offset-v1730* is present, the UE shall ignore the *harq-ProcID-Offset-r16*. The network does not configure this field for CG-SDT. |
| ***harq-ProcID-Offset2***  Indicates the offset used in deriving the HARQ process IDs, see TS 38.321 [3], clause 5.4.1. This field is not configured together with *cg-RetransmissionTimer-r16*. If the field *harq-ProcID-Offset2-v1700* is present, the UE shall ignore the *harq-ProcID-Offset2-r16*. |
| ***mappingPattern***  Indicates whether the UE should follow Cyclical mapping pattern or Sequential mapping pattern when two SRS resource sets are configured in *srs-ResourceSetToAddModList* or *srs-ResourceSetToAddModListDCI-0-2* with usage 'codebook' or 'noncodebook' for PUSCH transmission with a Type 1 configured grant and/or a Type 2 configured grant as described in clause 6.1.2.3 of TS 38.214 [19] |
| ***mcs-Table***  Indicates the MCS table the UE shall use for PUSCH without transform precoding. If the field is absent the UE applies the value *qam64*. |
| ***mcs-TableTransformPrecoder***  Indicates the MCS table the UE shall use for PUSCH with transform precoding. If the field is absent the UE applies the value *qam64*. |
| ***mcsAndTBS***  The modulation order, target code rate and TB size (see TS 38.214 [19], clause 6.1.2). The NW does not configure the values 28~31 in this version of the specification. |
| ***nrofBitsInUTO-UCI***  Indicates the number of bits in the UTO-UCI bitmap (see TS 38.212 [17], clause 6.2.7, 6.3.2, TS 38.213 [13], clause 9.3.1, TS 38.214 [19], clause 5.2.3). When this field is configured, UTO-UCI is enabled for the UE. |
| ***nrofHARQ-Processes***  The number of HARQ processes configured. It applies for both Type 1 and Type 2. See TS 38.321 [3], clause 5.4.1. If the UE is configured with *nrofHARQ-Processes-v1700, the* UE shall ignore *nrofHARQ-Processes (without suffix)*. |
| ***nrofSlotsInCG-Period***  Number of consecutive slots for CG PUSCH transmission occasions in a period of a single CG PUSCH configuration, see TS 38.214 [19], clause 6.1. The network does not configure this field for operation on shared spectrum. |
| ***pathlossReferenceIndex***  Indicates the reference signal index used as PUSCH pathloss reference (see TS 38.213 [13], clause 7.1.1). In case of CG-SDT, the UE does not use this field. |
| ***pathlossReferenceIndex2***  Indicates the reference signal used as PUSCH pathloss reference for the second SRS resource set. When this field is present, pathlossReferenceIndex indicates the reference signal used as PUSCH pathloss reference for the first SRS resource set |
| ***p0-PUSCH-Alpha***  Index of the *P0-PUSCH-AlphaSet* to be used for this configuration. |
| ***p0-PUSCH-Alpha2***  Index of the *P0-PUSCH-AlphaSet* to be used for second SRS resource set. If this field is present, the *p0-PUSCH-Alpha* provides index for the P0-PUSCH-AlphaSet to be used for first SRS resource set. |
| ***periodicity***  Periodicity for UL transmission without UL grant for type 1 and type 2 (see TS 38.321 [3], clause 5.8.2).  The following periodicities are supported depending on the configured subcarrier spacing [symbols]:  15 kHz: 2, 7, n\*14, where n={1, 2, 4, 5, 8, 10, 16, 20, 32, 40, 64, 80, 128, 160, 320, 640}  30 kHz: 2, 7, n\*14, where n={1, 2, 4, 5, 8, 10, 16, 20, 32, 40, 64, 80, 128, 160, 256, 320, 640, 1280}  60 kHz with normal CP 2, 7, n\*14, where n={1, 2, 4, 5, 8, 10, 16, 20, 32, 40, 64, 80, 128, 160, 256, 320, 512, 640, 1280, 2560}  60 kHz with ECP: 2, 6, n\*12, where n={1, 2, 4, 5, 8, 10, 16, 20, 32, 40, 64, 80, 128, 160, 256, 320, 512, 640, 1280, 2560}  120 kHz: 2, 7, n\*14, where n={1, 2, 4, 5, 8, 10, 16, 20, 32, 40, 64, 80, 128, 160, 256, 320, 512, 640, 1024, 1280, 2560, 5120}  480 and 960 kHz: n\*14, where n={1, 2, 4, 5, 8, 10, 16, 20, 32, 40, 64, 80, 128, 160, 256, 320, 512, 640, 1024, 1280, 2560, 5120}  In case of SDT, the network does not configure periodicity values less than 5ms. |
| ***periodicityExt***  This field is used to calculate the periodicity for UL transmission without UL grant for type 1 and type 2 (see TS 38.321 [3], clause 5.8.2). If this field is present, the UE shall ignore field *periodicity* (without suffix). Network does not configure *periodicityExt-r17* together with *periodicityExt-r16*.  The following periodicites are supported depending on the configured subcarrier spacing [symbols]:  15 kHz: *periodicityExt*\*14, where *periodicityExt* has a value between 1 and 640.  30 kHz: *periodicityExt*\*14, where *periodicityExt* has a value between 1 and 1280.  60 kHz with normal CP: *periodicityExt*\*14, where *periodicityExt* has a value between 1 and 2560.  60 kHz with ECP: *periodicityExt*\*12, where *periodicityExt* has a value between 1 and 2560.  120 kHz: *periodicityExt*\*14, where *periodicityExt* has a value between 1 and 5120.  480 kHz: *periodicityExt*\*14, where *periodicityExt* has a value between 1 and 20480.  960 kHz: *periodicityExt*\*14, where *periodicityExt* has a value between 1 and 40960.  In case of SDT, the network does not configure periodicity values less than 5ms. |
| ***phy-PriorityIndex***  Indicates the PHY priority of CG PUSCH at least for PHY-layer collision handling. Value *p0* indicates low priority and value *p1* indicates high priority. The network does not configure this for CG-SDT. |
| ***powerControlLoopToUse***  Closed control loop to apply (see TS 38.213 [13], clause 7.1.1). |
| ***powerControlLoopToUse2***  Closed control loop to apply to second SRS resource set (see TS 38.213 [13], clause 7.1.1). If this field is present, the *powerControlLoopToUse* applies to the first SRS resource set. |
| ***precodingAndNumberOfLayers***  Indicates the precoding and number of layers (see TS 38.212 [17], clause 7.3.1.1.2, and TS 38.214 [19], clause 6.1.2.3). In case of CG-SDT, network sets this field to 1. |
| ***precodingAndNumberOfLayers2***  Indicates the precoding and number of layers for the second SRS resource set. When this field is present, *precodingAndNumberOfLayers* indicated the precoding and number of layers for the first SRS resource set. |
| ***pusch-RepTypeIndicator***  Indicates whether UE follows the behavior for PUSCH repetition type A or the behavior for PUSCH repetition type B for each Type 1 configured grant configuration. The value *pusch-RepTypeA* enables the 'PUSCH repetition type A' and the value *pusch-RepTypeB* enables the 'PUSCH repetition type B' (see TS 38.214 [19], clause 6.1.2.3). The value *pusch-RepTypeB* is not configured simultaneously with *cg-nrofPUSCH-InSlot-r16* and *cg-nrofSlots-r16*. The network does not configure this field if *cg-RetransmissionTimer-r16* is configured for CG operation with shared spectrum channel access. |
| ***rbg-Size***  Selection between configuration 1 and configuration 2 for RBG size for PUSCH. The UE does not apply this field if *resourceAllocation* is set to *resourceAllocationType1*. Otherwise, the UE applies the value *config1* when the field is absent. Note: *rbg-Size* is used when the *transformPrecoder* parameter is disabled. |
| ***repK-RV***  The redundancy version (RV) sequence to use. See TS 38.214 [19], clause 6.1.2. The network configures this field if repetitions are used, i.e., if *repK* is set to *n2*, *n4* or *n8*. This field is not configured when *cg-RetransmissionTimer* is configured. Otherwise, the field is absent. |
| ***repK***  Number of repetitions K, see TS 38.214 [19]. If the field *repK-v1710* is present, the UE shall ignore the *repK* (without suffix). |
| ***resourceAllocation***  Configuration of resource allocation type 0 and resource allocation type 1. For Type 1 UL data transmission without grant, *resourceAllocation* should be *resourceAllocationType0* or *resourceAllocationType1*. |
| ***rrc-ConfiguredUplinkGrant***  Configuration for "configured grant" transmission with fully RRC-configured UL grant (Type1). If this field is absent the UE uses UL grant configured by DCI addressed to CS-RNTI (Type2). |
| ***sequenceOffsetForRV***  Configures the RV offset for the starting RV for the first repetition (first actual repetition in PUSCH repetition Type B) towards the second 'SRS resource set' for PUSCH configured in either *srs-ResourceSetToAddModList* or *srs-ResourceSetToAddModListDCI-0-2* with usage 'codebook' or 'noncodebook'. |
| ***srs-ResourceSetId***  Indicates the associated SRS resource set for PUSCH+PUSCH simultaneous uplink transmsision for CG-type 1 PUSCH. |
| ***srs-ResourceIndicator***  Indicates the SRS resource to be used. The network does not configure this for CG-SDT. |
| ***srs-ResourceIndicator2***  Indicates the SRS resource to be used for the second SRS resource set. When this field is present, the srs-ResourceIndicator is used for the first SRS resource set. |
| ***startingFromRV0***  This field is used to determine the initial transmission occasion of a transport block for a given RV sequence, see TS 38.214 [19], clause 6.1.2.3.1. The network does not configure this field if *cg-RetransmissionTimer-r16* is configured for CG operation. |
| ***timeDomainAllocation, timeDomainAllocation-v1710***  Indicates a combination of start symbol and length and PUSCH mapping type, see TS 38.214 [19], clause 6.1.2 and TS 38.212 [17], clause 7.3.1.  If the field *timeDomainAllocation-v1710* is present, the UE shall ignore *timeDomainAllocation* field (without suffix). |
| ***timeDomainOffset***  Offset related to the reference SFN indicated by *timeReferenceSFN*, see TS 38.321 [3], clause 5.8.2. *timeDomainOffset-r17* is only applicable to 480 kHz and 960 kHz. If *timeDomainOffset-r17* is present, the UE shall ignore *timeDomainOffset* (without suffix). |
| ***timeReferenceHyperSFN***  Indicates H-SFN used for determination of the offset of a resource in time domain. The UE uses the closest H-SFN with the indicated number preceding the reception of the configured grant configuration, see TS 38.321 [3], clause 5.8.2. |
| ***timeReferenceSFN***  Indicates SFN used for determination of the offset of a resource in time domain. The UE uses the closest SFN with the indicated number preceding the reception of the configured grant configuration, see TS 38.321 [3], clause 5.8.2. If the field *timeReferenceSFN* is not present, the reference SFN is 0. |
| ***transformPrecoder***  Enables or disables transform precoding for *type1* and *type2*. If the field is absent, the UE enables or disables transform precoding in accordance with the field *msg3-transformPrecoder* in *RACH-ConfigCommon* from *rach-ConfigCommon* included directly within BWP configuration (i.e., not included in *additionalRACH-ConfigList*), see TS 38.214 [19], clause 6.1.3. |
| ***uci-OnPUSCH***  Selection between and configuration of dynamic and semi-static beta-offset. For Type 1 UL data transmission without grant, *uci-OnPUSCH* should be set to *semiStatic.* The network does not configure this for CG-SDT. |

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| *CG-COT-Sharing* field descriptions |
| ***channelAccessPriority***  Indicates the Channel Access Priority Class that the gNB can assume when sharing the UE initiated COT (see 37.213 [48], clause 4.1.3). |
| ***duration***  Indicates the number of DL transmission slots within UE initiated COT (see 37.213 [48], clause 4.1.3). |
| ***offset***  Indicates the number of DL transmission slots from the end of the slot where CG-UCI is detected after which COT sharing can be used (see 37.213 [48], clause 4.1.3). |

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| *CG-StartingOffsets* field descriptions |
| ***cg-StartingFullBW-InsideCOT***  A set of configured grant PUSCH transmission starting offsets (see TS 38.211[16], Table 5.3.1-2) which indicates the length of a CP extension of the first symbol that is located before the configured resource when frequency domain resource allocation includes all interlaces in the allocated RB set(s) and the CG PUSCH resource is inside gNB COT (see TS 38.214 [19], clause 6.1.2.3). |
| ***cg-StartingFullBW-OutsideCOT***  A set of configured grant PUSCH transmission starting offset indices (see TS 38.211[16], Table 5.3.1-2) which indicates the length of a CP extension of the first symbol that is located before the configured resource when frequency domain resource allocation includes all interlaces in the allocated RB set(s) and the CG PUSCH resource is outside gNB COT (see TS 38.214 [19], clause 6.1.2.3). |
| ***cg-StartingPartialBW-InsideCOT***  A set of configured grant PUSCH transmission starting offset index (see TS 38.211[16], Table 5.3.1-2) which indicates the length of a CP extension of the first symbol that is located before the configured resource when frequency domain resource allocation does not include all interlaces in the allocated RB set(s) and the CG PUSCH resource is inside gNB COT (see TS 38.214 [19], clause 6.1.2.3). |
| ***cg-StartingPartialBW-OutsideCOT***  A set of configured grant PUSCH transmission starting offset index (see TS 38.211[16], Table 5.3.1-2) which indicates the length of a CP extension of the first symbol that is located before the configured resource when frequency domain resource allocation does not include all interlaces in the allocated RB set(s) and the CG PUSCH resource is outside gNB COT (see TS 38.214 [19], clause 6.1.2.3). |

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| *CG-NTN-RACH-Less-Configuration* field descriptions |
| ***ntn-cg-RACH-less-RetransmissionTimer***  Indicates the initial value of the configured grant retransmission timer used for the initial uplink transmission of RACH-less handover (see TS 38.321 [3]) in multiples of *periodicity*. |
| ***ntn-DMRS-Ports***  Indicates the set of DMRS ports for SSB to PUSCH mapping (see TS 38.213 [13]). The first (left-most / most significant) bit corresponds to DMRS port 0, the second most significant bit corresponds to DMRS port 1, and so on. A bit set to 1 indicates that this DMRS port is used for mapping. |
| ***ntn-NrofDMRS-Sequences***  Indicates the number of DMRS sequences for SSB to PUSCH mapping (see TS 38.213 [13]). |
| ***ntn-RSRP-ThresholdSSB***  An RSRP threshold configured for SSB selection for the pre-allocated uplink grant as specified in TS 38.321 [3]. |
| ***ntn-SSB-PerCG-PUSCH***  The number of SSBs per pre-allocated uplink grant PUSCH (see TS 38.213 [13]). Value *one* corresponds to 1 SSBs per pre-allocated uplink grant PUSCH, value *two* corresponds to 2 SSBs per pre-allocated uplink grant PUSCH and so on. |
| ***ntn-SSB-Subset***  Indicates SSB subset for SSB to CG PUSCH mapping within one CG configuration. If this field is absent, UE assumes the SSB set includes all actually transmitted SSBs. |

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| *CG-SDT-Configuration* field descriptions |
| ***cg-SDT-RetransmissionTimer***  Indicates the initial value of the configured grant retransmission timer used for the initial transmission of CG-SDT with CCCH message (see TS 38.321 [3]) in multiples of *periodicity*. |
| ***sdt-DMRS-Ports***  Indicates the set of DMRS ports for SSB to PUSCH mapping (see TS 38.213 [13]). The first (left-most / most significant) bit corresponds to DMRS port 0, the second most significant bit corresponds to DMRS port 1, and so on. A bit set to 1 indicates that this DMRS port is used for mapping. In case of an (e)RedCap-specific initial downlink BWP that is associated with NCD-SSB, the SSB is the NCD-SSB. Otherwise, the SSB is the CD-SSB. |
| ***sdt-NrofDMRS-Sequences***  Indicates the number of DMRS sequences for SSB to PUSCH mapping (see TS 38.213 [13]). In case of an (e) RedCap-specific initial downlink BWP that is associated with NCD-SSB, the SSB is the NCD-SSB. Otherwise, the SSB is the CD-SSB. |
| ***sdt-SSB-Subset***  Indicates SSB subset for SSB to CG PUSCH mapping within one CG configuration. The first/leftmost bit corresponds to SS/PBCH block index 0, the second bit corresponds to SS/PBCH block index 1, and so on. Value 0 in the bitmap indicates that the corresponding SS/PBCH block is not included in the SSB subset for SSB to CG PUSCH mapping while value 1 indicates that the corresponding SS/PBCH block is included in SSB subset for SSB to CG PUSCH mapping. If this field is absent, UE assumes the SSB set includes all actually transmitted SSBs. In case of an (e)RedCap-specific initial downlink BWP that is associated with NCD-SSB, the SSB is the NCD-SSB. Otherwise, the SSB is the CD-SSB. |
| ***sdt-SSB-PerCG-PUSCH***  The number of SSBs per CG PUSCH (see TS 38.213 [13]). Value *one* corresponds to 1 SSBs per CG PUSCH, value *two* corresponds to 2 SSBs per CG PUSCH and so on. In case of an (e)RedCap-specific initial downlink BWP that is associated with NCD-SSB, the SSB is the NCD-SSB. Otherwise, the SSB is the CD-SSB. |
| ***sdt-P0-PUSCH***  Indicates P0 value for PUSCH for CG SDT in steps of 1dB (see TS 38.213 [13]). When this field is configured, the UE ignores the *p0-PUSCH-Alpha*. |
| ***sdt-Alpha***  Indicates alpha value for PUSCH for CG SDT. *alpha0* indicates value 0 is used *alpha04* indicates value 4 is used and so on (see TS 38.213 [13]). When this field is configured, the UE ignores the *p0-PUSCH-Alpha*. |

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| *CG-mIAB-Configuration* field descriptions |
| ***mIAB-DMRS-Ports***  Indicates the set of DMRS ports for SSB to PUSCH mapping (see TS 38.213 [13]). The first (left-most / most significant) bit corresponds to DMRS port 0, the second most significant bit corresponds to DMRS port 1, and so on. A bit set to 1 indicates that this DMRS port is used for mapping. |
| ***mIAB-NrofDMRS-Sequences***  Indicates the number of DMRS sequences for SSB to PUSCH mapping (see TS 38.213 [13]). |
| ***mIAB-RSRP-ThresholdSSB***  An RSRP threshold configured for SSB selection for the pre-allocated uplink grant as specified in TS 38.321 [3]. |
| ***mIAB-SSB-PerCG-PUSCH***  The number of SSBs per CG PUSCH (see TS 38.213 [13]). Value *one* corresponds to 1 SSBs per CG PUSCH, value *two* corresponds to 2 SSBs per CG PUSCH and so on. |
| ***mIAB-SSB-Subset***  Indicates SSB subset for SSB to CG PUSCH mapping within one CG configuration. |

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| *CG-LTM-Configuration* field descriptions |
| ***cg-LTM-RetransmissionTimer***  Indicates the initial value of the configured grant retransmission timer used for the transmission of CG LTM with DCCH/DTCH message (see TS 38.321 [3]) in multiples of periodicity. |
| ***ltm-DMRS-Ports***  Indicates the set of DMRS ports for SSB to PUSCH mapping (see TS 38.213 [13]). |
| ***ltm-NrofDMRS-Sequences***  Indicates the number of DMRS sequences for SSB to PUSCH mapping (see TS 38.213 [13]). |
| ***ltm-SSB-PerCG-PUSCH***  The number of SSBs per CG PUSCH (see TS 38.213 [13]). Value one corresponds to 1 SSBs per CG PUSCH, value two corresponds to 2 SSBs per CG PUSCH and so on. |
| ***ltm-SSB-Subset***  Indicates SSB subset for SSB to CG PUSCH mapping within one CG configuration. |

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| Conditional Presence | Explanation |
| *LCH-BasedPrioritization* | This field is optionally present, Need R, if *lch-BasedPrioritization* is configured in the MAC entity. It is absent otherwise. |
| *RACHlessHO* | The field is optionally present, Need N, if *rach-LessHO* is present in *reconfigurationWithSync*. It is absent otherwise. |
| *RepTypeB* | The field is optionally present if pusch-RepTypeIndicator is set to pusch-RepTypeB, Need S, and absent otherwise. |
| *CG-List* | The field is mandatory present when included in *configuredGrantConfigToAddModList-r16*, otherwise the field is absent. |
| *CG-IndexMAC* | The field is mandatory present if at least one configured grant is configured by *configuredGrantConfigToAddModList-r16* in any BWP of this MAC entity, otherwise it is optionally present, need R. |
| *LTM* | The field is optionally present, Need R, if the UE is configured with at least an LTM candidate configuration. Otherwise, the field is absent. |
| *SRSsets* | This field is mandatory present when UE is configured with two SRS sets configured in either *srs-ResourceSetToAddModList* or *srs-ResourceSetToAddModListDCI-0-2* with usage codebook or non-codebook. Otherwise it is absent, Need R |

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| ***Unchanged IEs removed*** |

#### – *ResumeCause*

The IE *ResumeCause* is used to indicate the resume cause in *RRCResumeRequest*, *RRCResumeRequest1* and *UEAssistanceInformation*.

*ResumeCause* information element

-- ASN1START

-- TAG-RESUMECAUSE-START

ResumeCause ::= ENUMERATED {emergency, highPriorityAccess, mt-Access, mo-Signalling,

mo-Data, mo-VoiceCall, mo-VideoCall, mo-SMS, rna-Update, mps-PriorityAccess,

mcs-PriorityAccess, mt-SDT-v18xx, srs-PosConfigOrActivationReq-v1800, spare3, spare2, spare1 }

-- TAG-RESUMECAUSE-STOP

-- ASN1STOP