**3GPP TSG- Meeting #125**

**Athens, Greece, 26 February – 1 March, 2024**

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| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  |  | **CR** | **4564** | **rev** | **1** | **Current version:** |  |  |
|  | | | | | | | | |
| *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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| ***Title:*** |  | | | | | | | | | |
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| ***Source to WG:*** | Ericsson | | | | | | | | | |
| ***Source to TSG:*** |  | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | Tbd | | | | |  | ***Date:*** | | | 2024-02-20 |
|  |  | | | |  | |  | | |  |
| ***Category:*** |  |  | | | | | ***Release:*** | | |  |
|  | *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:*** | | Corrections related to   * RILs impacting multiple Rel-18 WIs, or * RILs with general RRC impact (not related to particular WI)   that are feasible to collect in one CR. | | | | | | | | |
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| ***Summary of change:*** | | C621  In 5.2.2.4.2, added “upon which the procedure ends” for ATG and NES related operations.  C607  In 7.1.1 Timers, on T304 deleted the first two sentences, and revised the 3rd sentence incorporating RACH-less HO for mIAB/NTN and RACH-less cell switch for LTM.  H502  In *DedicatedSIBRequest* message, added SIB23 to the set of SIBs that can be requested in RRC\_CONNECTED.  I051  In message RRCReconfiguration, field description for otherConfig, added the missiong configuration fields that can be included when otherConfig is configured for the SCG.  Class 0 isues 12, 44, 48, 60, 69, 125, 250 (see R2-2401532, R2-2401968) are not yet covered in this CR, and will be provided in a later draft version.  **Additionally, the following typos/editorials are corrected in this CR:**   1. SRS-TPC-CommandConfig field descriptions Corrected reference to clause 11.4 (was 11.3) in TS 38.213. 2. 5.2.2.3.2 Acquisition of an SI message   Corrected reference to specification, the number of slots in a radio frame is specificed in TS 38.211, not TS 38.213. | | | | | | | | |
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| ***Consequences if not approved:*** | | Errors will remain in specification | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 5.2.2.4.2, 7.1.1 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  |  | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  |  | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  |  | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

##### 5.2.2.3.2 Acquisition of an SI message

For SI message acquisition PDCCH monitoring occasion(s) are determined according to *searchSpaceOtherSystemInformation*. If *searchSpaceOtherSystemInformation* is set to zero, PDCCH monitoring occasions for SI message reception in SI-window are same as PDCCH monitoring occasions for *SIB1* where the mapping between PDCCH monitoring occasions and SSBs is specified in TS 38.213[13]. If *searchSpaceOtherSystemInformation* is not set to zero, PDCCH monitoring occasions for SI message are determined based on search space indicated by *searchSpaceOtherSystemInformation*. PDCCH monitoring occasions for SI message which are not overlapping with UL symbols (determined according to *tdd-UL-DL-ConfigurationCommon*) are sequentially numbered from one in the SI window. The [x×N+K]th PDCCH monitoring occasion (s) for SI message in SI-window corresponds to the Kth transmitted SSB, where x = 0, 1, ...X-1, K = 1, 2, …N, N is the number of actual transmitted SSBs determined according to *ssb-PositionsInBurst* in *SIB1* and X is equal to CEIL(number of PDCCH monitoring occasions in SI-window/N). The actual transmitted SSBs are sequentially numbered from one in ascending order of their SSB indexes. The UE assumes that, in the SI window, PDCCH for an SI message is transmitted in at least one PDCCH monitoring occasion corresponding to each transmitted SSB and thus the selection of SSB for the reception SI messages is up to UE implementation.

When acquiring an SI message, the UE shall:

1> determine the start of the SI-window for the concerned SI message as follows:

2> if the concerned SI message is configured in the *schedulingInfoList*:

3> for the concerned SI message, determine the number *n* which corresponds to the order of entry in the list of SI messages configured by *schedulingInfoList* in *si-SchedulingInfo* in *SIB1*;

3> determine the integer value *x = (n – 1) × w*, where *w* is the *si-WindowLength*;

3> the SI-window starts at the slot #*a*, where *a* = *x* mod N, in the radio frame for which SFN mod *T* = FLOOR(*x*/N), where *T* is the *si-Periodicity* of the concerned SI message and N is the number of slots in a radio frame as specified in TS 38.211 [16];

2> else if the concerned SI message is configured in the *schedulingInfoList2*;

3> determine the integer value *x = (si-WindowPosition -1) × w*, where *w* is the *si-WindowLength*;

3> the SI-window starts at the slot #*a*, where *a* = *x* mod N, in the radio frame for which SFN mod *T* = FLOOR(*x*/N), where *T* is the *si-Periodicity* of the concerned SI message and N is the number of slots in a radio frame as specified in TS 38.211 [16];

2> else if the concerned SI message is configured in the *posSchedulingInfoList* and *offsetToSI-Used* is not configured:

3> create a concatenated list of SI messages by appending the *posSchedulingInfoList* in *posSI-SchedulingInfo* in *SIB1* to *schedulingInfoList* in *si-SchedulingInfo* in *SIB1*;

3> for the concerned SI message, determine the number *n* which corresponds to the order of entry in the concatenated list;

3> determine the integer value *x = (n – 1) × w*, where *w* is the *si-WindowLength*;

3> the SI-window starts at the slot #*a*, where *a* = *x* mod N, in the radio frame for which SFN mod *T* = FLOOR(*x*/N), where *T* is the *posSI-Periodicity* of the concerned SI message and N is the number of slots in a radio frame as specified in TS 38.211 [16];

2> else if the concerned SI message is configured by the *posSchedulingInfoList* and *offsetToSI-Used* is configured:

3> determine the number *m* which corresponds to the number of SI messages with an associated *si-Periodicity* of 8 radio frames (80 ms), configured by *schedulingInfoList* in *SIB1*;

3> for the concerned SI message, determine the number *n* which corresponds to the order of entry in the list of SI messages configured by *posSchedulingInfoList* in *SIB1*;

3> determine the integer value *x* = *m* *× w +* (*n* – 1*)* *× w*, where *w* is the *si-WindowLength;*

3> the SI-window starts at the slot #*a*, where *a* = *x* mod N, in the radio frame for which SFN mod *T* = FLOOR(*x*/N) +8, where *T* is the *posSI-Periodicity* of the concerned SI message and N is the number of slots in a radio frame as specified in TS 38.211 [16];

1> receive the PDCCH containing the scheduling RNTI, i.e. SI-RNTI in the PDCCH monitoring occasion(s) for SI message acquisition, from the start of the SI-window and continue until the end of the SI-window whose absolute length in time is given by *si-WindowLength*, or until the SI message was received;

1> if the SI message was not received by the end of the SI-window, repeat reception at the next SI-window occasion for the concerned SI message in the current modification period;

1> if all the SIB(s) and/or posSIB(s) requested in *DedicatedSIBRequest* message have been acquired:

2> stop timer T350, if running;

NOTE 1: The UE is only required to acquire broadcasted SI message if the UE can acquire it without disrupting unicast or MBS multicast data reception, i.e. the broadcast and unicast/MBS multicast beams are quasi co-located.

NOTE 2: The UE is not required to monitor PDCCH monitoring occasion(s) corresponding to each transmitted SSB in SI-window.

NOTE 3: If the concerned SI message was not received in the current modification period, handling of SI message acquisition is left to UE implementation.

NOTE 4: A UE in RRC\_CONNECTED may stop the PDCCH monitoring during the SI window for the concerned SI message when the requested SIB(s) are acquired.

NOTE 5: A UE capable of NR sidelink communication/discovery and configured by upper layers to perform NR sidelink communication/discovery on a frequency, may acquire *SIB12* or *SystemInformationBlockType28* from a cell other than current serving cell (for RRC\_INACTIVE or RRC\_IDLE) or current PCell (for RRC\_CONNECTED), if *SIB12* of current serving cell (for RRC\_INACTIVE or RRC\_IDLE) or current PCell (for RRC\_CONNECTED) does not provide configuration for NR sidelink communication/discovery for the frequency, and if the other cell providing configuration for NR sidelink communication/discovery for the frequency meets the S-criteria as defined in TS 38.304 [20] or TS 36.304 [27].

1> perform the actions for the acquired SI message as specified in clause 5.2.2.4.

##### 5.2.2.4.2 Actions upon reception of the *SIB1*

Upon receiving the *SIB1* the UE shall:

1> store the acquired *SIB1*;

1> if the access is for NTN:

2> if the UE is in RRC\_IDLE or in RRC\_INACTIVE, or if the UE is in RRC\_CONNECTED while *T311* is running; and

2> if the *cellBarredNTN* in the acquired *SIB1* is set to *barred* or the *cellBarredNTN* is not included in the acquired *SIB1*:

3> consider the cell as barred in accordance with TS 38.304 [20];

3> perform cell re-selection to other cells on the same frequency as the barred cell as specified in TS 38.304 [20], upon which the procedure ends;

1> if the access is for ATG:

2> if the UE is in RRC\_IDLE or in RRC\_INACTIVE, or if the UE is in RRC\_CONNECTED while *T311* is running; and

2> if the *cellBarredNTN* in the acquired *SIB1* is set to *barred* or the *cellBarredNTN* is not included in the acquired *SIB1*:

3> consider the cell as barred in accordance with TS 38.304 [20];

3> perform cell re-selection to other cells on the same frequency as the barred cell as specified in TS 38.304 [20], upon which the procedure ends;

1> if the UE is a RedCap UE and it is in RRC\_IDLE or in RRC\_INACTIVE, or if the RedCap UE is in RRC\_CONNECTED while *T311* is running:

2> if *intraFreqReselectionRedCap* is not present in *SIB1*:

3> consider the cell as barred in accordance with TS 38.304 [20];

3> perform barring as if *intraFreqReselectionRedCap* is set to allowed, upon which the procedure ends;

2> else:

3> if the *cellBarredRedCap1Rx* is present in the acquired *SIB1* and is set to *barred* and the UE is equipped with 1 Rx branch; or

3> if the *cellBarredRedCap2Rx* is present in the acquired *SIB1* and is set to *barred* and the UE is equipped with 2 Rx branches; or

3> if the *halfDuplexRedCapAllowed* is not present in the acquired *SIB1* and the UE supports only half-duplex FDD operation:

4> consider the cell as barred in accordance with TS 38.304 [20];

4> perform barring based on *intraFreqReselectionRedCap* as specified in TS 38.304 [20], upon which the procedure ends;

1> if the UE supports NES cell DTX/DRX and it is in RRC\_IDLE or in RRC\_INACTIVE, or if the UE supporting NES cell DTX/DRX is in RRC\_CONNECTED while *T311* is running:

2> if *cellBarred* in the acquired *MIB* is set to *barred*:

3> if *cellBarredNES* is absent in the acquired *SIB1:*

4> consider the cell as barred in accordance with TS 38.304 [20];

4> perform cell re-selection to other cells on the same frequency as the barred cell as specified in TS 38.304 [20], upon which the procedure ends;

1> if the UE is an eRedCap UE and it is in RRC\_IDLE or in RRC\_INACTIVE, or if the eRedCap UE is in RRC\_CONNECTED while *T311* is running:

2> if *intraFreqReselection-eRedCap* is not present in *SIB1*:

3> consider the cell as barred in accordance with TS 38.304 [20];

3> perform barring as if *intraFreqReselection-eRedCap* is set to allowed upon which the procedure ends;

2> else:

3> if the *cellBarred-eRedCap1Rx* is present in the acquired *SIB1* and is set to *barred* and the UE is equipped with 1 Rx branch; or

3> if the *cellBarred-eRedCap2Rx* is present in the acquired *SIB1* and is set to *barred* and the UE is equipped with 2 Rx branches; or

3> if the *halfDuplexRedCapAllowed* is not present in the acquired *SIB1* and the UE supports only half-duplex FDD operation:

4> consider the cell as barred in accordance with TS 38.304 [20];

4> perform barring based on *intraFreqReselection-eRedCap* as specified in TS 38.304 [20] upon which the procedure ends;

1> if the *cellAccessRelatedInfo* contains an entry of a selected SNPN or PLMN and in case of PLMN the UE is either allowed or instructed to access the PLMN via a cell for which at least one CAG ID is broadcast:

2> in the remainder of the procedures use *npn-IdentityList, trackingAreaCode,* and *cellIdentity* for the cell as received in the corresponding entry of *npn-IdentityInfoList* containing the selected PLMN or SNPN;

1> else if the *cellAccessRelatedInfo* contains an entry with the *PLMN-Identity* of the selected PLMN:

2> in the remainder of the procedures use *plmn-IdentityList*, *trackingAreaCode*, *trackingAreaList,* and *cellIdentity* for the cell as received in the corresponding *PLMN-IdentityInfo* containing the selected PLMN;

1> if the UE in RRC\_INACTIVE is configured for feature(s) that it does not support in current serving cell:

2> not use the corresponding configuration in current serving cell;

NOTE 0: The requirement above applies only to UE that indicates different support of UE capabilities for TN and NTN.

1> if in RRC\_CONNECTED while T311 is not running:

2> disregard the *frequencyBandList*, if received, while in RRC\_CONNECTED;

2> forward the *cellIdentity* to upper layers;

2> forward the *trackingAreaCode* to upper layers, if included;

2> forward the *trackingAreaList* to upper layers, if included;

2> forward the received *posSIB-MappingInfo* to upper layers, if included;

2> apply the configuration included in the *servingCellConfigCommon*;

2> if the UE has a stored valid version of a SIB or posSIB, in accordance with clause 5.2.2.2.1, that the UE requires to operate within the cell in accordance with clause 5.2.2.1:

3> use the stored version of the required SIB or posSIB;

2> else:

3> acquire the required SIB or posSIB requested by upper layer as defined in clause 5.2.2.3.5;

NOTE 1: Void.

1> else:

2> if the UE supports one or more of the frequency bands indicated in the *frequencyBandList or frequencyBandListAerial* for downlink for TDD, or one or more of the frequency bands indicated in the *frequencyBandList* or *frequencyBandListAerial* for uplink for FDD, and they are not downlink only bands, and

2> if the UE is IAB-MT or supports at least one *additionalSpectrumEmission* in the *nr-NS-PmaxList* or *nr-NS-PmaxListAerial* for a supported band in the downlink for TDD, or a supported band in uplink for FDD, and

2> if the UE supports an uplink channel bandwidth with a maximum transmission bandwidth configuration (see TS 38.101-1 [15], TS 38.101-2 [39], and TS 38.101-5 [75]) which

- is smaller than or equal to the *carrierBandwidth* (indicated in *uplinkConfigCommon* for the SCS of the initial uplink BWP or, for (e)RedCap UE, of the (e)RedCap-specific initial uplink BWP if configured), and which

- is wider than or equal to the bandwidth of the initial uplink BWP or, for (e)RedCap UE, of the (e)RedCap-specific initial uplink BWP if configured, and

2> if the UE supports a downlink channel bandwidth with a maximum transmission bandwidth configuration (see TS 38.101-1 [15], TS 38.101-2 [39], and TS 38.101-5 [75]) which

- is smaller than or equal to the *carrierBandwidth* (indicated in *downlinkConfigCommon* for the SCS of the initial downlink BWP or, for (e)RedCap UE, of the (e)RedCap-specific initial downlink BWP if configured), and which

- is wider than or equal to the bandwidth of the initial downlink BWP or, for (e)RedCap UE, of the (e)RedCap-specific initial downlink BWP if configured, and

2> if *frequencyShift7p5khz* is present and the UE supports corresponding 7.5kHz frequency shift on this band; or *frequencyShift7p5khz* is not present, and

2> if the UE is not a RedCap UE, or if the UE is a RedCap UE and *halfDuplexRedCapAllowed* is present, or if the UE is a RedCap UE and the RedCap UE supports full-duplex FDD operation on this band:

3> if neither *trackingAreaCode* nor *trackingAreaList* is provided for the selected PLMN nor the registered PLMN nor PLMN of the equivalent PLMN list:

4> consider the cell as barred in accordance with TS 38.304 [20];

4> perform cell re-selection to other cells on the same frequency as the barred cell as specified in TS 38.304 [20];

3> else if UE is IAB-MT and if *iab-Support* is not provided for the selected PLMN nor the registered PLMN nor PLMN of the equivalent PLMN list nor the selected SNPN nor the registered SNPN nor SNPN of the equivalent SNPN list:

4> consider the cell as barred in accordance with TS 38.304 [20];

3> else if UE is NCR-MT and if *ncr-Support* is not provided:

4> consider the cell as barred in accordance with TS 38.304 [20];

3> else if UE is a mobile IAB-MT and if *mobileIAB-Support* is not provided for the selected PLMN nor the registered PLMN nor PLMN of the equivalent PLMN list nor the selected SNPN nor the registered SNPN nor SNPN of the equivalent SNPN list:

4> consider the cell as barred in accordance with TS 38.304 [20];

*Editor's Note: FFS whether a cell can be barred for a mobile IAB-MT.*

3> else:

4> apply a supported uplink channel bandwidth with a maximum transmission bandwidth which

- is contained within the *carrierBandwidth* indicated in *uplinkConfigCommon* for the SCS of the initial uplink BWP or, for (e)RedCap UEs, (e)RedCap-specific initial uplink BWP, if configured, and which

- is wider than or equal to the bandwidth of the initial BWP for the uplink or, for a (e)RedCap UE, of the (e)RedCap-specific initial uplink BWP if configured;

4> apply a supported downlink channel bandwidth with a maximum transmission bandwidth which

- is contained within the *carrierBandwidth* indicated in *downlinkConfigCommon* for the SCS of the initial downlink BWP or, for (e)RedCap UEs, (e)RedCap-specific initial downlink BWP, if configured, and which

- is wider than or equal to the bandwidth of the initial BWP for the downlink or, for a (e)RedCap UE, of the (e)RedCap-specific initial downlink BWP if configured;

4> if the UE is aerial UE and it supports at least one frequency band in the *frequencyBandListAerial*, for FDD from *frequencyBandListAerial* for uplink, or for TDD from *frequencyBandListAerial* for downlink,for which the UE supports at least one of the *additionalSpectrumEmission* values in *nr-NS-PmaxListAerial*, if present:

5> select the first frequency band in the *frequencyBandListAerial*, for FDD from *frequencyBandListAerial* for uplink, or for TDD from *frequencyBandListAerial* for downlink,which the UE supports and for which the UE supports at least one of the *additionalSpectrumEmission* values in *nr-NS-PmaxListAerial*;

4> else:

5> select the first frequency band in the *frequencyBandList*, for FDD from *frequencyBandList* for uplink, or for TDD from *frequencyBandList* for downlink,which the UE supports and for which the UE supports at least one of the *additionalSpectrumEmission* values in *nr-NS-PmaxList*, if present, and for RedCap UEs if the *halfDuplexRedCapAllowed* is not present, for which the UE supports full-duplex FDD operation;

4> forward the *cellIdentity* to upper layers;

4> forward the *trackingAreaCode* to upper layers;

4> forward the *trackingAreaList* to upper layers, if included;

4> forward the received *posSIB-MappingInfo* to upper layers, if included;

4> forward the PLMN identity or SNPN identity or PNI-NPN identity to upper layers;

4> if in RRC\_INACTIVE and the forwarded information does not trigger message transmission by upper layers:

5> if the serving cell does not belong to the configured *ran-NotificationAreaInfo*:

6> initiate an RNA update as specified in 5.3.13.8;

5> if configured to receive MBS multicast in RRC\_INACTIVE and not indicated to stop monitoring G-RNTI for at least one MBS multicast session:

6> if SIB24 is not scheduled in SIB1 in the cell after cell selection or cell reselection:

7> initiate an RRC connection resume procedure for multicast reception as specified in 5.3.13.1d;

4> forward the *ims-EmergencySupport* to upper layers, if present;

4> forward the *eCallOverIMS-Support* to upper layers, if present;

4> forward the *UAC-AccessCategory1-SelectionAssistanceInfo* or *UAC-AC1-SelectAssistInfo* for the selected PLMN/SNPNto upper layers, if present and set to *a*, *b* or *c*;

4> if the UE is in SNPN access mode:

5> forward the *imsEmergencySupportForSNPN* indicators with the corresponding SNPN identities to upper layers, if present;

4> apply the configuration included in the *servingCellConfigCommon*;

4> apply the specified PCCH configuration defined in 9.1.1.3;

4> if the UE has a stored valid version of a SIB, in accordance with clause 5.2.2.2.1, that the UE requires to operate within the cell in accordance with clause 5.2.2.1:

5> use the stored version of the required SIB;

4> if the UE has not stored a valid version of a SIB, in accordance with clause 5.2.2.2.1, of one or several required SIB(s), in accordance with clause 5.2.2.1:

5> for the SI message(s) that, according to the *si-SchedulingInfo*, contain at least one required SIB and for which *si-BroadcastStatus* is set to broadcasting:

6> acquire the SI message(s) as defined in clause 5.2.2.3.2;

5> for the SI message(s) that, according to the *si-SchedulingInfo*, contain at least one required SIB and for which *si-BroadcastStatus* is set to *notBroadcasting*:

6> trigger a request to acquire the SI message(s) as defined in clause 5.2.2.3.3;

4> if the UE has a stored valid version of a posSIB, in accordance with clause 5.2.2.2.1, of one or several required posSIB(s), in accordance with clause 5.2.2.1:

5> use the stored version of the required posSIB;

4> if the UE has not stored a valid version of a posSIB, in accordance with clause 5.2.2.2.1, of one or several posSIB(s) in accordance with clause 5.2.2.1:

5> for the SI message(s) that, according to the *posSI-SchedulingInfo*, contain at least one requested posSIB and for which *posSI-BroadcastStatus* is set to *broadcasting*:

6> acquire the SI message(s) as defined in clause 5.2.2.3.2;

5> for the SI message(s) that, according to the *posSI-SchedulingInfo*, contain at least one requested posSIB for which *posSI-BroadcastStatus* is set to *notBroadcasting*:

6> trigger a request to acquire the SI message(s) as defined in clause 5.2.2.3.3a;

4> if the UE is aerial UE and it supports at least one *additionalSpectrumEmission* values in *nr-NS-PmaxListAerial* within *frequencyBandListAerial* in *uplinkConfigCommon* for FDD or in *downlinkConfigCommon* for TDD:

5> apply the first listed *additionalSpectrumEmission* which it supports among the values included in *nr-NS-PmaxListAerial* within *frequencyBandListAerial* in *uplinkConfigCommon* for FDD or in *downlinkConfigCommon* for TDD;

4> else:

5> apply the first listed *additionalSpectrumEmission* which it supports among the values included in *nr-NS-PmaxList* within *frequencyBandList* in *uplinkConfigCommon* for FDD or in *downlinkConfigCommon* for TDD;

4> if the *additionalPmax* is present in the same entry of the selected *additionalSpectrumEmission* within *nr-NS-PmaxList* or *nr-NS-PmaxListAerial*:

5> apply the *additionalPmax* for UL;

4> else:

5> apply the *p-Max* in *uplinkConfigCommon* for UL;

4> if *supplementaryUplink* is present in *servingCellConfigCommon*; and

4> if the UE supports one or more of the frequency bands indicated in the *frequencyBandList* for the *supplementaryUplink*; and

4> if the UE supports at least one *additionalSpectrumEmission* in the *nr-NS-PmaxList* for a supported supplementary uplink band; and

4> if the UE is not a RedCap UE, or if the UE is a RedCap UE and *halfDuplexRedCapAllowed* is present, or if the UE is a RedCap UE and the RedCap UE supports full-duplex FDD operation on the frequency bands indicated in the *frequencyBandList* for the *supplementaryUplink*; and

4> if the UE supports an uplink channel bandwidth with a maximum transmission bandwidth configuration (see TS 38.101-1 [15] and TS 38.101-2 [39]) which

- is smaller than or equal to the *carrierBandwidth* (indicated in *supplementaryUplink* for the SCS of the initial uplink BWP), and which

- is wider than or equal to the bandwidth of the initial uplink BWP of the SUL:

5> consider supplementary uplink as configured in the serving cell;

5> select the first frequency band in the *frequencyBandList* for the *supplementaryUplink* which the UE supports and for which the UE supports at least one of the *additionalSpectrumEmission* values in *nr-NS-PmaxList*, if present, and for RedCap UEs if the *halfDuplexRedCapAllowed* is not present, for which the UE supports full-duplex FDD operation;

5> apply a supported supplementary uplink channel bandwidth with a maximum transmission bandwidth which

- is contained within the *carrierBandwidth* (indicated in *supplementaryUplink* for the SCS of the initial uplink BWP), and which

- is wider than or equal to the bandwidth of the initial BWP of the SUL;

5> apply the first listed *additionalSpectrumEmission* which it supports among the values included in *nr-NS-PmaxList* within *frequencyBandList* for the *supplementaryUplink*;

5> if the *additionalPmax* is present in the same entry of the selected *additionalSpectrumEmission* within *nr-NS-PmaxList* for the *supplementaryUplink*:

6> apply the *additionalPmax* in *supplementaryUplink* for SUL;

5> else:

6> apply the *p-Max* in *supplementaryUplink* for SUL;

NOTE 2: For an out of coverage L2 U2N Remote UE in RRC\_IDLE or RRC\_INACTIVE receiving SIB1 from its connected L2 U2N Relay UE, it is up to Remote UE implementation whether to consider and apply the following parameters: *frequencyBandList*, *carrierBandwidth*, *frequencyShift7p5khz*, frequency band, channel bandwidth, the configuration included in the *servingCellConfigCommon*, the specified PCCH configuration, *additionalSpectrumEmission*, *additionalPmax*, and *p-Max*.

2> else:

3> consider the cell as barred in accordance with TS 38.304 [20]; and

3> perform barring as if *intraFreqReselection*, or *intraFreqReselectionRedCap* for RedCap UEs, or *intraFreqReselection-eRedCap* for eRedCap UEs, is set to *notAllowed*;

### 

### 6.2.2 Message definitions

<cut>

#### – *DedicatedSIBRequest*

The *DedicatedSIBRequest* message is used to request SIB(s) required by the UE in RRC\_CONNECTED as specified in clause 5.2.2.3.5.

Signalling radio bearer: SRB1

RLC-SAP: AM

Logical channel: DCCH

Direction: UE to Network

*DedicatedSIBRequest message*

-- ASN1START

-- TAG-DEDICATEDSIBREQUEST-START

DedicatedSIBRequest-r16 ::= SEQUENCE {

criticalExtensions CHOICE {

dedicatedSIBRequest-r16 DedicatedSIBRequest-r16-IEs,

criticalExtensionsFuture SEQUENCE {}

}

}

DedicatedSIBRequest-r16-IEs ::= SEQUENCE {

onDemandSIB-RequestList-r16 SEQUENCE {

requestedSIB-List-r16 SEQUENCE (SIZE (1..maxOnDemandSIB-r16)) OF SIB-ReqInfo-r16 OPTIONAL,

requestedPosSIB-List-r16 SEQUENCE (SIZE (1..maxOnDemandPosSIB-r16)) OF PosSIB-ReqInfo-r16 OPTIONAL

} OPTIONAL,

lateNonCriticalExtension OCTET STRING OPTIONAL,

nonCriticalExtension SEQUENCE {} OPTIONAL

}

SIB-ReqInfo-r16 ::= ENUMERATED { sib12, sib13, sib14, sib20-v1700, sib21-v1700, sib23-v18xy, spare2, spare1 }

PosSIB-ReqInfo-r16 ::= SEQUENCE {

gnss-id-r16 GNSS-ID-r16 OPTIONAL,

sbas-id-r16 SBAS-ID-r16 OPTIONAL,

posSibType-r16 ENUMERATED { posSibType1-1, posSibType1-2, posSibType1-3, posSibType1-4, posSibType1-5, posSibType1-6,

posSibType1-7, posSibType1-8, posSibType2-1, posSibType2-2, posSibType2-3, posSibType2-4,

posSibType2-5, posSibType2-6, posSibType2-7, posSibType2-8, posSibType2-9, posSibType2-10,

posSibType2-11, posSibType2-12, posSibType2-13, posSibType2-14, posSibType2-15,

posSibType2-16, posSibType2-17, posSibType2-18, posSibType2-19, posSibType2-20,

posSibType2-21, posSibType2-22, posSibType2-23, posSibType3-1, posSibType4-1,

posSibType5-1, posSibType6-1, posSibType6-2, posSibType6-3,..., posSibType1-9-v1710,

posSibType1-10-v1710, posSibType2-24-v1710, posSibType2-25-v1710,

posSibType6-4-v1710, posSibType6-5-v1710, posSibType6-6-v1710, posSibType2-17a-v1770,

posSibType2-18a-v1770, posSibType2-20a-v1770, posSibType1-11-v1800, posSibType1-12-v1800,

posSibType2-26-v1800, posSibType2-27-v1800 }

}

-- TAG-DEDICATEDSIBREQUEST-STOP

-- ASN1STOP

|  |
| --- |
| *DedicatedSIBRequest field descriptions* |
| ***requestedSIB-List***  Contains a list of SIB(s) the UE requests while in RRC\_CONNECTED. |
| ***requestedPosSIB-List***  Contains a list of posSIB(s) the UE requests while in RRC\_CONNECTED. |

|  |
| --- |
| *PosSIB-ReqInfo* field descriptions |
| ***gnss-id***  The presence of this field indicates that the request positioning SIB type is for a specific GNSS. Indicates a specific GNSS (see also TS 37.355 [49]) |
| ***sbas-id***  The presence of this field indicates that the request positioning SIB type is for a specific SBAS. Indicates a specific SBAS (see also TS 37.355 [49]). If the UE includes this field it shall set *gnss-id* to *sbas*. |

<cut>

#### – *RRCReconfiguration*

The *RRCReconfiguration* message is the command to modify an RRC connection. It may convey information for measurement configuration, mobility control, radio resource configuration (including RBs, MAC main configuration and physical channel configuration) and AS security configuration.

Signalling radio bearer: SRB1 or SRB3

RLC-SAP: AM

Logical channel: DCCH

Direction: Network to UE

*RRCReconfiguration message*

-- ASN1START

-- TAG-RRCRECONFIGURATION-START

RRCReconfiguration ::= SEQUENCE {

rrc-TransactionIdentifier RRC-TransactionIdentifier,

criticalExtensions CHOICE {

rrcReconfiguration RRCReconfiguration-IEs,

criticalExtensionsFuture SEQUENCE {}

}

}

RRCReconfiguration-IEs ::= SEQUENCE {

radioBearerConfig RadioBearerConfig OPTIONAL, -- Need M

secondaryCellGroup OCTET STRING (CONTAINING CellGroupConfig) OPTIONAL, -- Cond SCG

measConfig MeasConfig OPTIONAL, -- Need M

lateNonCriticalExtension OCTET STRING OPTIONAL,

nonCriticalExtension RRCReconfiguration-v1530-IEs OPTIONAL

}

RRCReconfiguration-v1530-IEs ::= SEQUENCE {

masterCellGroup OCTET STRING (CONTAINING CellGroupConfig) OPTIONAL, -- Need M

fullConfig ENUMERATED {true} OPTIONAL, -- Cond FullConfig

dedicatedNAS-MessageList SEQUENCE (SIZE(1..maxDRB)) OF DedicatedNAS-Message OPTIONAL, -- Cond nonHO

masterKeyUpdate MasterKeyUpdate OPTIONAL, -- Cond MasterKeyChange

dedicatedSIB1-Delivery OCTET STRING (CONTAINING SIB1) OPTIONAL, -- Need N

dedicatedSystemInformationDelivery OCTET STRING (CONTAINING SystemInformation) OPTIONAL, -- Need N

otherConfig OtherConfig OPTIONAL, -- Need M

nonCriticalExtension RRCReconfiguration-v1540-IEs OPTIONAL

}

RRCReconfiguration-v1540-IEs ::= SEQUENCE {

otherConfig-v1540 OtherConfig-v1540 OPTIONAL, -- Need M

nonCriticalExtension RRCReconfiguration-v1560-IEs OPTIONAL

}

RRCReconfiguration-v1560-IEs ::= SEQUENCE {

mrdc-SecondaryCellGroupConfig SetupRelease { MRDC-SecondaryCellGroupConfig } OPTIONAL, -- Need M

radioBearerConfig2 OCTET STRING (CONTAINING RadioBearerConfig) OPTIONAL, -- Need M

sk-Counter SK-Counter OPTIONAL, -- Need N

nonCriticalExtension RRCReconfiguration-v1610-IEs OPTIONAL

}

RRCReconfiguration-v1610-IEs ::= SEQUENCE {

otherConfig-v1610 OtherConfig-v1610 OPTIONAL, -- Need M

bap-Config-r16 SetupRelease { BAP-Config-r16 } OPTIONAL, -- Need M

iab-IP-AddressConfigurationList-r16 IAB-IP-AddressConfigurationList-r16 OPTIONAL, -- Need M

conditionalReconfiguration-r16 ConditionalReconfiguration-r16 OPTIONAL, -- Need M

daps-SourceRelease-r16 ENUMERATED{true} OPTIONAL, -- Need N

t316-r16 SetupRelease {T316-r16} OPTIONAL, -- Need M

needForGapsConfigNR-r16 SetupRelease {NeedForGapsConfigNR-r16} OPTIONAL, -- Need M

onDemandSIB-Request-r16 SetupRelease { OnDemandSIB-Request-r16 } OPTIONAL, -- Need M

dedicatedPosSysInfoDelivery-r16 OCTET STRING (CONTAINING PosSystemInformation-r16-IEs) OPTIONAL, -- Need N

sl-ConfigDedicatedNR-r16 SetupRelease {SL-ConfigDedicatedNR-r16} OPTIONAL, -- Need M

sl-ConfigDedicatedEUTRA-Info-r16 SetupRelease {SL-ConfigDedicatedEUTRA-Info-r16} OPTIONAL, -- Need M

targetCellSMTC-SCG-r16 SSB-MTC OPTIONAL, -- Need S

nonCriticalExtension RRCReconfiguration-v1700-IEs OPTIONAL

}

RRCReconfiguration-v1700-IEs ::= SEQUENCE {

otherConfig-v1700 OtherConfig-v1700 OPTIONAL, -- Need M

sl-L2RelayUE-Config-r17 SetupRelease { SL-L2RelayUE-Config-r17 } OPTIONAL, -- Need M

sl-L2RemoteUE-Config-r17 SetupRelease { SL-L2RemoteUE-Config-r17 } OPTIONAL, -- Need M

dedicatedPagingDelivery-r17 OCTET STRING (CONTAINING Paging) OPTIONAL, -- Cond PagingRelay

needForGapNCSG-ConfigNR-r17 SetupRelease {NeedForGapNCSG-ConfigNR-r17} OPTIONAL, -- Need M

needForGapNCSG-ConfigEUTRA-r17 SetupRelease {NeedForGapNCSG-ConfigEUTRA-r17} OPTIONAL, -- Need M

musim-GapConfig-r17 SetupRelease {MUSIM-GapConfig-r17} OPTIONAL, -- Need M

ul-GapFR2-Config-r17 SetupRelease { UL-GapFR2-Config-r17 } OPTIONAL, -- Need M

scg-State-r17 ENUMERATED { deactivated } OPTIONAL, -- Need N

appLayerMeasConfig-r17 AppLayerMeasConfig-r17 OPTIONAL, -- Need M

ue-TxTEG-RequestUL-TDOA-Config-r17 SetupRelease {UE-TxTEG-RequestUL-TDOA-Config-r17} OPTIONAL, -- Need M

nonCriticalExtension RRCReconfiguration-v1800-IEs OPTIONAL

}

RRCReconfiguration-v1800-IEs ::= SEQUENCE {

needForInterruptionConfigNR-r18 ENUMERATED { enabled, disabled } OPTIONAL, -- Need M

uav-Config-r18 SetupRelease { UAV-Config-r18 } OPTIONAL, -- Need M

sl-IndirectPathAddChange-r18 SetupRelease { SL-IndirectPathAddChange-r18 } OPTIONAL, -- Need M

n3c-IndirectPathAddChange-r18 SetupRelease { N3C-IndirectPathAddChange-r18 } OPTIONAL, -- Need M

n3c-IndirectPathConfigRelay-r18 SetupRelease { N3C-IndirectPathConfigRelay-r18 } OPTIONAL, -- Need M

otherConfig-v1800 OtherConfig-v1800 OPTIONAL, -- Need M

srs-PosResourceSetLinkedForAggBWList-r18 SetupRelease { SRS-PosResourceSetLinkedForAggBWList-r18 } OPTIONAL, -- Need M

ltm-Config-r18 SetupRelease {LTM-Config-r18} OPTIONAL, -- Need M

nonCriticalExtension SEQUENCE {} OPTIONAL

}

MRDC-SecondaryCellGroupConfig ::= SEQUENCE {

mrdc-ReleaseAndAdd ENUMERATED {true} OPTIONAL, -- Need N

mrdc-SecondaryCellGroup CHOICE {

nr-SCG OCTET STRING (CONTAINING RRCReconfiguration),

eutra-SCG OCTET STRING

}

}

BAP-Config-r16 ::= SEQUENCE {

bap-Address-r16 BIT STRING (SIZE (10)) OPTIONAL, -- Need M

defaultUL-BAP-RoutingID-r16 BAP-RoutingID-r16 OPTIONAL, -- Need M

defaultUL-BH-RLC-Channel-r16 BH-RLC-ChannelID-r16 OPTIONAL, -- Need M

flowControlFeedbackType-r16 ENUMERATED {perBH-RLC-Channel, perRoutingID, both} OPTIONAL, -- Need R

...

}

MasterKeyUpdate ::= SEQUENCE {

keySetChangeIndicator BOOLEAN,

nextHopChainingCount NextHopChainingCount,

nas-Container OCTET STRING OPTIONAL, -- Cond securityNASC

...

}

OnDemandSIB-Request-r16 ::= SEQUENCE {

onDemandSIB-RequestProhibitTimer-r16 ENUMERATED {s0, s0dot5, s1, s2, s5, s10, s20, s30}

}

T316-r16 ::= ENUMERATED {ms50, ms100, ms200, ms300, ms400, ms500, ms600, ms1000, ms1500, ms2000}

IAB-IP-AddressConfigurationList-r16 ::= SEQUENCE {

iab-IP-AddressToAddModList-r16 SEQUENCE (SIZE(1..maxIAB-IP-Address-r16)) OF IAB-IP-AddressConfiguration-r16 OPTIONAL, -- Need N

iab-IP-AddressToReleaseList-r16 SEQUENCE (SIZE(1..maxIAB-IP-Address-r16)) OF IAB-IP-AddressIndex-r16 OPTIONAL, -- Need N

...

}

IAB-IP-AddressConfiguration-r16 ::= SEQUENCE {

iab-IP-AddressIndex-r16 IAB-IP-AddressIndex-r16,

iab-IP-Address-r16 IAB-IP-Address-r16 OPTIONAL, -- Need M

iab-IP-Usage-r16 IAB-IP-Usage-r16 OPTIONAL, -- Need M

iab-donor-DU-BAP-Address-r16 BIT STRING (SIZE(10)) OPTIONAL, -- Need M

...

}

SL-ConfigDedicatedEUTRA-Info-r16 ::= SEQUENCE {

sl-ConfigDedicatedEUTRA-r16 OCTET STRING OPTIONAL, -- Need M

sl-TimeOffsetEUTRA-List-r16 SEQUENCE (SIZE (8)) OF SL-TimeOffsetEUTRA-r16 OPTIONAL -- Need M

}

SL-TimeOffsetEUTRA-r16 ::= ENUMERATED {ms0, ms0dot25, ms0dot5, ms0dot625, ms0dot75, ms1, ms1dot25, ms1dot5, ms1dot75,

ms2, ms2dot5, ms3, ms4, ms5, ms6, ms8, ms10, ms20}

UE-TxTEG-RequestUL-TDOA-Config-r17 ::= CHOICE {

oneShot-r17 NULL,

periodicReporting-r17 ENUMERATED { ms160, ms320, ms1280, ms2560, ms61440, ms81920, ms368640, ms737280 }

}

SRS-PosResourceSetLinkedForAggBWList-r18 ::= SEQUENCE (SIZE(1..maxNrOfLinkedSRS-PosResourceSet-r18)) OF SRS-PosResourceSetLinkedForAggBW-r18

-- TAG-RRCRECONFIGURATION-STOP

-- ASN1STOP

Editor's Note: FFS whether/how to indicate PC5 release/maintain for indirect path add/modify/release. And for indirect path release, FFS whether to include an explicit "directPathRelease" flag in the reconfiguration procedure so that the UE can apply a simpler behaviour.

|  |
| --- |
| *RRCReconfiguration-IEs* field descriptions |
| ***appLayerMeasConfig***  This field is used to configure application layer measurements. This field is absent when the UE is configured to operate with shared spectrum channel access or if *sl-L2RemoteUE-Config-r17* is configured or not released. |
| ***bap-Config***  This field is used to configure the BAP entity for IAB nodes. |
| ***bap-Address***  Indicates the BAP address of an IAB-node. The BAP address of an IAB-node cannot be changed once configured for the cell group to the BAP entity. |
| ***conditionalReconfiguration***  Configuration of candidate target SpCell(s) and execution condition(s) for conditional handover, conditional PSCell addition or conditional PSCell change. The field is absent if any DAPS bearer is configured or if the *masterCellGroup* includes *ReconfigurationWithSync* or if the *sl-L2RemoteUE-Config* or *sl-L2RelayUE-Config* is configured. For conditional PSCell change, the field is absent if the *secondaryCellGroup* includes *ReconfigurationWithSync*. The *RRCReconfiguration* message contained in *DLInformationTransferMRDC* cannot contain the field *conditionalReconfiguration* for conditional PSCell change or for conditional PSCell addition. |
| ***daps-SourceRelease***  Indicates to UE that the source cell part of DAPS operation is to be stopped and the source cell part of DAPS configuration is to be released. |
| ***dedicatedNAS-MessageList***  This field is used to transfer UE specific NAS layer information between the network and the UE. The RRC layer is transparent for each PDU in the list. |
| ***dedicatedPagingDelivery***  This field is used to transfer *Paging* message for the associated L2 U2N Remote UE to the L2 U2N Relay UE in RRC\_CONNECTED. |
| ***dedicatedPosSysInfoDelivery***  This field is used to transfer *SIBPos* to the UE in RRC\_CONNECTED. |
| ***dedicatedSIB1-Delivery***  This field is used to transfer *SIB1* to the UE (including L2 U2N Remote UE). The field has the same values as the corresponding configuration in *servingCellConfigCommon*. |
| ***dedicatedSystemInformationDelivery***  This field is used to transfer *SIB6*, *SIB7*, *SIB8, SIB19, SIB20, SIB21, SIB25* to the UE with an active BWP with no common search space configured or the L2 U2N Remote UE in RRC\_CONNECTED. For UEs in RRC\_CONNECTED (including L2 U2N Remote UE), this field is also used to transfer the SIBs requested on-demand. |
| ***defaultUL-BAP-RoutingID***  This field is used for IAB-node to configure the default uplink Routing ID, which is used by IAB-node during IAB-node bootstrapping*,* migration, IAB-MT RRC resume and IAB-MT RRC re-establishment for *F1-C* and *non-F1* traffic. The *defaultUL-BAP-RoutingID* can be (re-)configured when IAB-node IP address for *F1-C* related traffic changes. This field is mandatory only for IAB-node bootstrapping. |
| ***defaultUL-BH-RLC-Channel***  This field is used for IAB-nodes to configure the default uplink BH RLC channel*,* which is used by IAB-nodeduring IAB-node bootstrapping*,* migration, IAB-MT RRC resume and IAB-MT RRC re-establishment *for F1-C and non-F1 traffic*. The *defaultUL-BH-RLC-Channel* can be (re-)configured when IAB-node IP address for *F1-C* related traffic changes, and the new IP address is anchored at a different IAB-donor-DU. This field is mandatory for IAB-node bootstrapping. If the IAB-MT is operating in EN-DC, the default uplink BH RLC channel is referring to an RLC channel on the SCG; Otherwise, it is referring to an RLC channel either on the MCG or on the SCG depending on whether the MN or the SN configures this field. |
| ***flowControlFeedbackType***  This field is only used for IAB-node that support hop-by-hop flow control to configure the type of flow control feedback. Value *perBH-RLC-Channel* indicates that the IAB-node shall provide flow control feedback per BH RLC channel, value *perRoutingID* indicates that the IAB-node shall provide flow control feedback per routing ID, and value *both* indicates that the IAB-node shall provide flow control feedback both per BH RLC channel and per routing ID. |
| ***fullConfig***  Indicates that the full configuration option is applicable for the *RRCReconfiguration* message for intra-system intra-RAT HO. For inter-RAT HO from E-UTRA to NR, *fullConfig* indicates whether or not delta signalling of SDAP/PDCP from source RAT is applicable. This field is absent if any DAPS bearer is configured or when the *RRCReconfiguration* message is transmitted on SRB3, and in an *RRCReconfiguration* message for SCG contained in another *RRCReconfiguration* message (or *RRCConnectionReconfiguration* message, see TS 36.331 [10]) transmitted on SRB1. |
| ***iab-IP-Address***  This field is used to provide the IP address information for IAB-node. |
| ***iab-IP-AddressIndex***  This field is used to identify a configuration of an IP address. |
| ***iab-IP-AddressToAddModList***  List of IP addresses allocated for IAB-node to be added and modified. |
| ***iab-IP-AddressToReleaseList***  List of IP address allocated for IAB-node to be released. |
| ***iab-IP-Usage***  This field is used to indicate the usage of the assigned IP address. If this field is not configured, the assigned IP address is used for all traffic. |
| ***iab-donor-DU-BAP-Address***  This field is used to indicate the BAP address of the IAB-donor-DU where the IP address is anchored. |
| ***keySetChangeIndicator***  Indicates whether UE shall derive a new KgNB. If *reconfigurationWithSync* is included, value *true* indicates that a KgNB key is derived from a KAMF key taken into use through the latest successful NAS SMC procedure, or N2 handover procedure with KAMF change, as described in TS 33.501 [11] for KgNB re-keying. Value *false* indicates that the new KgNB key is obtained from the current KgNB key or from the NH as described in TS 33.501 [11]. |
| ***ltm-Config***  This field includes the configuration related to LTM. |
| ***masterCellGroup***  Configuration of master cell group. |
| ***mrdc-ReleaseAndAdd***  This field indicates that the current SCG configuration is released and a new SCG is added at the same time. |
| ***mrdc-SecondaryCellGroup***  Includes an RRC message for SCG configuration in NR-DC or NE-DC. For NR-DC (nr-SCG), *mrdc-SecondaryCellGroup* contains the *RRCReconfiguration* message as generated (entirely) by SN gNB. In this version of the specification, the RRC message can only include fields *secondaryCellGroup, otherConfig, conditionalReconfiguration,* *ltm-Config,* *measConfig,* *bap-Config,* *IAB-IP-AddressConfigurationList* and *appLayerMeasConfig*.  For NE-DC (eutra-SCG), *mrdc-SecondaryCellGroup* includes the E-UTRA *RRCConnectionReconfiguration* message as specified in TS 36.331 [10]. In this version of the specification, the E-UTRA RRC message can only include the field *scg-Configuration*. |
| ***mrdc-SecondaryCellGroupConfig***  This field is used to configure and release an SCG in NR-DC and NE-DC. In case the *RRCReconfiguration* message is part of an *LTM-Candidate* IE associated with the MCG, if this field is present its value can only be set to *release*. |
| ***musim-GapConfig***  Indicates the MUSIM gap configuration and controls setup/release of MUSIM gaps. In this version of the specification, the network does not configure MUSIM gap together with concurrent measurement gap or preconfigured measurement gap for positioning. |
| ***nas-Container***  This field is used to transfer UE specific NAS layer information between the network and the UE. The RRC layer is transparent for this field, although it affects activation of AS security after inter-system handover to NR. The content is defined in TS 24.501 [23]. |
| ***needForGapsConfigNR***  Configuration for the UE to report measurement gap requirement information of NR target bands in the *RRCReconfigurationComplete* and *RRCResumeComplete* message. |
| ***needForGapNCSG-ConfigEUTRA***  Configuration for the UE to report measurement gap and NCSG requirement information of E‑UTRA target bands in the *RRCReconfigurationComplete* and *RRCResumeComplete* message. |
| ***needForGapNCSG-ConfigNR***  Configuration for the UE to report measurement gap and NCSG requirement information of NR target bands in the *RRCReconfigurationComplete* and *RRCResumeComplete* message. |
| ***needForInterruptionConfigNR***  Indicates whether the UE shall report interruption requirement information of NR target bands in the *RRCReconfigurationComplete* and *RRCResumeComplete* message. The network sets this field to *enabled* only if the *needForGapsConfigNR* is configured. The network sets this field to *disabled* if the *needForGapsConfigNR* is released. |
| ***nextHopChainingCount***  Parameter NCC: See TS 33.501 [11] |
| ***onDemandSIB-Request***  If the field is present, the UE is allowed to request SIB(s) on-demand while in RRC\_CONNECTED according to clause 5.2.2.3.5. |
| ***onDemandSIB-RequestProhibitTimer***  Prohibit timer for requesting SIB(s) on-demand while in RRC\_CONNECTED according to clause 5.2.2.3.5. Value in seconds. Value s0 means prohibit timer is set to 0 seconds, value s0dot5 means prohibit timer is set to 0.5 seconds, value s1 means prohibit timer is set to 1 second and so on. |
| ***otherConfig***  Contains configuration related to other configurations. When configured for the SCG, only fields *drx-PreferenceConfig, maxBW-PreferenceConfig, maxBW-PreferenceConfigFR2-2, maxCC-PreferenceConfig, maxMIMO-LayerPreferenceConfig*, *maxMIMO-LayerPreferenceConfigFR2-2*, *minSchedulingOffsetPreferenceConfig, minSchedulingOffsetPreferenceConfigExt, rlm-RelaxationReportingConfig, bfd-RelaxationReportingConfig, btNameList, wlanNameList, sensorNameList*, *obtainCommonLocation*, *uav-FlightPathAvailabilityConfig*, *idc-AssistanceConfig*, *multiRx-PreferenceReportingConfigFR2*, *ul-TrafficInfoReportingConfig*, *n3c-RelayUE-InfoReportConfig, successPSCell-Config* and *sn-InitiatedPSCellChange* can be included. |
| ***radioBearerConfig***  Configuration of Radio Bearers (DRBs, SRBs, multicast MRBs) including SDAP/PDCP. In (NG)EN-DC this field may only be present if the *RRCReconfiguration* is transmitted over SRB3. SRB4 should not be configured if *sl-L2RemoteUE-Config-r17* is configured or not released. |
| ***radioBearerConfig2***  Configuration of Radio Bearers (DRBs, SRBs) including SDAP/PDCP. This field can only be used if the UE supports NR-DC or NE-DC. |
| ***scg-State***  Indicates that the SCG is in deactivated state.  This field is not used  - in an *RRCReconfiguration* message received:  - within *mrdc-SecondaryCellGroup*, or  - in an E-UTRA *RRCConnectionReconfiguration* message, or  - in an E-UTRA *RRCConnectionResume* message or  - in an *RRCReconfiguration* message received via SRB3, except if the *RRCReconfiguration* message is included in *DLInformationTransferMRDC*.  The field is absent if CPA or CPC is configured for the UE, or if the *RRCReconfiguration* message is contained in *CondRRCReconfig,* or PSCell is configured with *tag2*. |
| ***sl-L2RelayUE-Config***  Contains L2 U2N relay operation related configurations used by a UE acting as or to be acting as a L2 U2N Relay UE or L2 U2U relay operation related configuration used by a UE acting as a L2 U2U Relay UE. In case of L2 U2N relay operation, the field is absent if *conditionalReconfiguration* is configured for CHO. |
| ***sl-L2RemoteUE-Config***  Contains L2 U2N relay operation related configurations used by a UE acting as or to be acting as a L2 U2N Remote UE or L2 U2U relay operation related configuration used by a UE acting as a L2 U2U Remote UE. In case of L2 U2N relay operation, the field is absent if *conditionalReconfiguration* is configured for CHO, or if *appLayerMeasConfig* or SRB4 is configured/not released. |
| ***secondaryCellGroup***  Configuration of secondary cell group ((NG)EN-DC or NR-DC). |
| ***sk-Counter***  A counter used upon initial configuration of S-KgNB or S-KeNB, as well as upon refresh of S-KgNB or S-KeNB. This field is always included either upon initial configuration of an NR SCG or upon configuration of the first RB with *keyToUse* set to *secondary*, whichever happens first. This field is absent if there is neither any NR SCG nor any RB with *keyToUse* set to *secondary*. |
| ***sl-ConfigDedicatedNR***  This field is used to provide the dedicated configurations for NR sidelink communication/discovery/positioning. |
| ***sl-ConfigDedicatedEUTRA-Info***  This field includes the E-UTRA *RRCConnectionReconfiguration* as specified in TS 36.331 [10]. In this version of the specification, the E-UTRA *RRCConnectionReconfiguration* can only includes sidelink related fields for V2X sidelink communication, i.e. *sl-V2X-ConfigDedicated*, *sl-V2X-SPS-Config*, *measConfig* and/or *otherConfig*. |
| ***srs-PosResourceSetLinkedForAggBWList***  This field indicates the SRS resource sets across carriers which are linked for SRS bandwidth aggregation in RRC\_CONNECTED state as defined in clause 6.2.1.4 of TS 38.214 [19]. |
| ***sl-TimeOffsetEUTRA***  This field indicates the possible time offset to (de)activation of V2X sidelink transmission after receiving DCI format 3\_1 used for scheduling V2X sidelink communication. Value *ms0dpt75* corresponds to 0.75ms, *ms1* corresponds to 1ms and so on. The network includes this field only when *sl-ConfigDedicatedEUTRA* is configured. |
| ***targetCellSMTC-SCG***  The SSB periodicity/offset/duration configuration of target cell for NR PSCell addition and SN change. When UE receives this field, UE applies the configuration based on the timing reference of NR PCell for PSCell addition and PSCell change for the case of no reconfiguration with sync of MCG, and UE applies the configuration based on the timing reference of target NR PCell for the case of reconfiguration with sync of MCG. If both this field and the *smtc* in *secondaryCellGroup* -> *SpCellConfig* -> *reconfigurationWithSync* are absent, the UE uses the SMTC in the *measObjectNR* having the same SSB frequency and subcarrier spacing, as configured before the reception of the RRC message. |
| ***t316***  Indicates the value for timer T316 as described in clause 7.1. Value *ms50* corresponds to 50 ms, value *ms100* corresponds to 100 ms and so on. This field can be configured only if the UE is configured with split SRB1 or SRB3. |
| ***ue-TxTEG-RequestUL-TDOA-Config***  Configures the periodicity of UE reporting for the association between Tx TEG and SRS Positioning resources. When configured with *oneShot* UE reports the association only one time. When configured with *periodicReporting* UE reports the association periodically and the *periodicReporting* indicates the periodicity. Value *ms160* corresponds to 160ms, value *ms320* corresponds to 320ms and so on. |
| ***ul-GapFR2-Config***  Indicates the FR2 UL gap configuration to UE. In EN-DC and NGEN-DC, the SN decides and configures the FR2 UL gap pattern. In NE-DC, the MN decides and configures the FR2 UL gap pattern. In NR-DC without FR2-FR2 band combination, the network entity which is configured with FR2 serving cell(s) decides and configures the FR2 UL gap pattern. |

|  |  |
| --- | --- |
| Conditional Presence | Explanation |
| *nonHO* | The field is absent in case of reconfiguration with sync within NR or to NR; otherwise it is optionally present, need N. |
| *securityNASC* | This field is mandatory present in case of inter system handover. Otherwise the field is optionally present, need N. |
| *MasterKeyChange* | This field is mandatory present in case *masterCellGroup* includes *ReconfigurationWithSync* and *RadioBearerConfig* includes *SecurityConfig* with *SecurityAlgorithmConfig*, indicating a change of the AS security algorithms associated to the master key. If *ReconfigurationWithSync* is included for other cases, this field is optionally present, need N. If *ReconfigurationWithSync* is part of an *LTM-Candidate* IE associated with the MCG, the field is absent. Otherwise the field is absent. |
| *FullConfig* | The field is mandatory present in case of inter-system handover from E-UTRA/EPC to NR. It is optionally present, Need N, during a reconfiguration with sync which is not related to an LTM cell switch or subsequent CPAC, and also in first reconfiguration after reestablishment; or for intra-system handover from E-UTRA/5GC to NR. It is absent otherwise. |
| *SCG* | The field is mandatory present in:  - an *RRCReconfiguration* message contained in an *RRCResume* message (or in an *RRCConnectionResume* message, see TS 36.331 [10]),  - an *RRCReconfiguration* message contained in an *RRCConnectionReconfiguration* message, see TS 36.331 [10], which is contained in *DLInformationTransferMRDC* transmitted on SRB3 (as a response to *ULInformationTransferMRDC* including an *MCGFailureInformation*).  The field is optional present, Need M, in:  - an *RRCReconfiguration* message transmitted on SRB3,  - an *RRCReconfiguration* message contained in another *RRCReconfiguration* message (or in an *RRCConnectionReconfiguration* message, see TS 36.331 [10]) transmitted on SRB1  - an *RRCReconfiguration* message contained in another *RRCReconfiguration* message which is contained in *DLInformationTransferMRDC* transmitted on SRB3 (as a response to *ULInformationTransferMRDC* including an *MCGFailureInformation*).  Otherwise, the field is absent. |
| *PagingRelay* | For L2 U2N Relay UE, the field is optionally present, Need N. Otherwise, it is absent. |

### 6.3.2 Radio resource control information elements

<cut>

#### – *SRS-TPC-CommandConfig*

The IE *SRS-TPC-CommandConfig* is used to configure the UE for extracting TPC commands for SRS from a group-TPC messages on DCI.

*SRS-TPC-CommandConfig* information element

-- ASN1START

-- TAG-SRS-TPC-COMMANDCONFIG-START

SRS-TPC-CommandConfig ::= SEQUENCE {

startingBitOfFormat2-3 INTEGER (1..31) OPTIONAL, -- Need R

fieldTypeFormat2-3 INTEGER (0..1) OPTIONAL, -- Need R

...,

[[

startingBitOfFormat2-3SUL INTEGER (1..31) OPTIONAL -- Need R

]]

}

-- TAG-SRS-TPC-COMMANDCONFIG-STOP

-- ASN1STOP

|  |
| --- |
| *SRS-TPC-CommandConfig* field descriptions |
| ***fieldTypeFormat2-3***  The type of a field within the group DCI with SRS request fields (optional), which indicates how many bits in the field are for SRS request (0 or 2).  Note that for Type A, there is a common SRS request field for all SCells in the set, but each SCell has its own TPC command bits. See TS 38.212 [17] clause 7.3.1 and , TS 38.213 [13], clause 11.4. |
| ***startingBitOfFormat2-3***  The starting bit position of a block within the group DCI with SRS request fields (optional) and TPC commands. The value 1 of the field corresponds to the first/left most bit of format2-3. The value 2 of the field corresponds to the second bit format2-3, and so on (see TS 38.212 [17], clause 7.3.1 and TS 38.213 [13], clause 11.4). |
| ***startingBitOfFormat2-3SUL***  The starting bit position of a block within the group DCI with SRS request fields (optional) and TPC commands for SUL carrier (see TS 38.212 [17], clause 7.3.1 and TS 38.213 [13], clause 11.4). |

### 7.1.1 Timers (Informative)

| Timer | Start | Stop | At expiry |
| --- | --- | --- | --- |
| T300 | Upon transmission of *RRCSetupRequest.* | Upon reception of *RRCSetup* or *RRCReject* message, cell re-selection, relay reselection, and upon abortion of connection establishment by upper layers. | Perform the actions as specified in 5.3.3.7. |
| T301 | Upon transmission of *RRCReestabilshmentRequest* | Upon reception of *RRCReestablishment* or *RRCSetup* message as well as when the selected cell becomes unsuitable or the (re)selected L2 U2N Relay UE becomes unsuitable, upon reception of *NotificationMessageSidelink* indicating *relayUE-HO* or *relayUE-CellReselection*. | Go to RRC\_IDLE |
| T302 | Upon reception of *RRCReject* while performing RRC connection establishment or resume, upon reception of *RRCRelease* with *waitTime*. | Upon entering RRC\_CONNECTED or RRC\_IDLE, upon cell re-selection, upon cell change due to relay (re)selection, and upon reception of *RRCReject* message. | Inform upper layers about barring alleviation as specified in 5.3.14.4 |
| T304 | Upon reception of *RRCReconfiguration* message including *reconfigurationWithSync* for the MCG which does not include *sl-PathSwitchConfig*, or upon reception of *RRCReconfiguration* message including *reconfigurationWithSync* for the SCG not indicated as deactivated in the NR or E-UTRA message containing the *RRCReconfiguration* message or upon conditional reconfiguration execution i.e. when applying a stored *RRCReconfiguration* message including *reconfigurationWithSync*.  Also, for the MCG and SCG upon an indication from lower layer that an LTM cell switch procedure is triggered and, for the MCG, upon performing an LTM cell switch procedure following cell selection performed while timer T311 is running. | Upon successful completion of random access on the corresponding SpCell.  Upon receiving an indication from lower layers of successful completion of Rach-less handover, or upon receiving an indication from lower layers of successful completion of an LTM RACH-less cell switch.  For T304 of SCG, upon SCG release. | For T304 of MCG, in case of the handover from NR or intra-NR handover, or path switch from a L2 U2N Relay UE to a NR cell, or a reconfiguration with sync without performing random access procedure, or an LTM cell switch procedure, initiate the RRC re-establishment procedure; In case of handover to NR, perform the actions defined in the specifications applicable for the source RAT. If any DAPS bearer is configured and if there is no RLF in source PCell, initiate the failure information procedure.  For T304 of SCG, inform network about the reconfiguration with sync failure by initiating the SCG failure information procedure as specified in 5.7.3. |
| T310 | Upon detecting physical layer problems for the SpCell i.e. upon receiving N310 consecutive out-of-sync indications from lower layers. | Upon receiving N311 consecutive in-sync indications from lower layers for the SpCell, upon receiving RRCReconfiguration with *reconfigurationWithSync* for that cell group, upon reception of *MobilityFromNRCommand*, upon the reconfiguration of *rlf-TimersAndConstant,* upon initiating the connection re-establishment procedure, upon conditional reconfiguration execution i.e. when applying a stored RRCReconfiguration message including *reconfigurationWithSync* for that cell group, and upon initiating the MCG failure information procedure.  Upon SCG release, if the T310 is kept in SCG. | If the T310 is kept in MCG: If AS security is not activated: go to RRC\_IDLE else: initiate the MCG failure information procedure as specified in 5.7.3b or the connection re-establishment procedure as specified in 5.3.7 or the procedure as specified in 5.3.10.3 if any DAPS bearer is configured.  If the T310 is kept in SCG, Inform E-UTRAN/NR about the SCG radio link failure by initiating the SCG failure information procedure as specified in 5.7.3. |
| T311 | Upon initiating the RRC connection re-establishment procedure | Upon selection of a suitable NR cell, or upon selection of a suitable L2 U2N Relay UE, or a cell using another RAT. | Enter RRC\_IDLE |
| T312 | If T312 is configured in MCG: Upon triggering a measurement report for a measurement identity for which T312 has been configured and *useT312* has been set to true, while T310 in PCell is running.  If T312 is configured in SCG and *useT312* has been set to true: Upon triggering a measurement report for a measurement identity for which T312 has been configured, while T310 in PSCell is running. | Upon receiving N311 consecutive in-sync indications from lower layers for the SpCell, receiving *RRCReconfiguration* with *reconfigurationWithSync* for that cell group, upon reception of *MobilityFromNRCommand*, upon initiating the connection re-establishment procedure, upon the reconfiguration of *rlf-TimersAndConstant*, upon initiating the MCG failure information procedure, upon conditional reconfiguration execution i.e. when applying a stored RRCReconfiguration message including *reconfigurationWithSync* for that cell group, and upon the expiry of T310 in corresponding SpCell.  Upon SCG release, if the T312 is kept in SCG | If the T312 is kept in MCG initiate the MCG failure information procedure as specified in 5.7.3b or the connection re-establishment procedure.  If the T312 is kept in SCG, Inform E-UTRAN/NR about the SCG radio link failure by initiating the SCG failure information procedure.as specified in 5.7.3. |
| T316 | Upon transmission of the *MCGFailureInformation* message | Upon receiving *RRCRelease*, *RRCReconfiguration* with *reconfigurationwithSync* for the PCell, *MobilityFromNRCommand,* or upon initiating the re-establishment procedure | Perform the actions as specified in 5.7.3b.5. |
| T319 | Upon transmission of *RRCResumeRequest* or *RRCResumeRequest1 when the resume procedure is not initiated for SDT.* | Upon reception of *RRCResume,* *RRCSetup, RRCRelease, RRCRelease* with *suspendConfig* or *RRCReject* message, upon cell re-selection or upon relay (re)selection. | Perform the actions as specified in 5.3.13.5. |
| T319a | Upon transmission of *RRCResumeRequest* or *RRCResumeRequest1* when the resume procedure is initiated for SDT. | Upon reception of *RRCResume,* *RRCSetup, RRCRelease,* *RRCReject* message or upon failure to resume RRC connection for SDT as specified in 5.3.13.5 or upon cell reselection. | Perform the actions as specified in 5.3.13.5. |
| T320 | Upon reception of *t320* or upon cell (re)selection to NR from another RAT with validity time configured for dedicated priorities (in which case the remaining validity time is applied). | Upon entering RRC\_CONNECTED, upon reception of *RRCRelease*, when PLMN selection or SNPN selection is performed on request by NAS, when the UE enters RRC\_IDLE from RRC\_INACTIVE, or upon cell (re)selection to another RAT (in which case the timer is carried on to the other RAT). | Discard the cell reselection priority information provided by dedicated signalling. |
| T321 | Upon receiving *measConfig* including a *reportConfig* with the *reportType* set to *reportCGI* | Upon acquiring the information needed to set all fields of *cgi-info*, upon receiving *measConfig* that includes removal of the *reportConfig* with the *reportType* set to *reportCGI* and upon detecting that a cell is not broadcasting SIB1. | Initiate the measurement reporting procedure, stop performing the related measurements. |
| T322 | Upon receiving *measConfig* including *reportConfigNR* with the *reportType* set to *reportSFTD* and *drx-SFTD-NeighMeas* is set to *true*. | Upon acquiring the SFTD measurement results, upon receiving *measConfig* that includes removal of the *reportConfig* with the *reportType* set to *reportSFTD*. | Initiate the measurement reporting procedure, stop performing the related measurements*.* |
| T325 | Upon reception of *RRCRelease* message with *deprioritisationTimer*. |  | Stop deprioritisation of all frequencies or NR signalled by *RRCRelease.* |
| T330 | Upon receiving *LoggedMeasurementConfiguration* message | Upon log volume exceeding the suitable UE memory, upon initiating the release of *LoggedMeasurementConfiguration* procedure | Perform the actions specified in 5.5a.1.4 |
| T331 | Upon receiving *RRCRelease* message with *measIdleDuration* | Upon receiving *RRCSetup, RRCResume*, *RRCRelease* with idle/inactive measurement configuration, upon cell selection/reselection to a cell that does not belong to the *validityArea* (if configured)*,* or upon cell re-selection to another RAT*.* | Perform the actions as specified in 5.7.8.3. |
| T342 | Upon transmitting *UEAssistanceInformation* message with *DelayBudgetReport*. | Upon releasing *delayBudgetReportingConfig* during the connection re-establishment/resume procedures, and upon receiving *delayBudgetReportingConfig* set to *release.* | No action. |
| T345 | Upon transmitting *UEAssistanceInformation* message with *overheatingAssistance* | Upon releasing *overheatingAssistanceConfig* during the connection re-establishment procedure, upon initiating the connection resumption procedure, and upon receiving *overheatingAssistanceConfig* set to *release.* | No action. |
| T346a (The UE maintains one instance of this timer per cell group) | Upon transmitting *UEAssistanceInformation* message with *drx-Preference*. | Upon releasing *drx-PreferenceConfig* during the connection re-establishment/resume procedures, upon receiving *drx-PreferenceConfig* set to *release*, or upon performing MR-DC release*.* | No action. |
| T346b (The UE maintains one instance of this timer per cell group) | Upon transmitting *UEAssistanceInformation* message with *maxBW-Preference*. | Upon releasing *maxBW-PreferenceConfig* during the connection re-establishment/resume procedures, upon receiving *maxBW-PreferenceConfig* set to *release*, or upon performing MR-DC release*.* | No action. |
| T346c (The UE maintains one instance of this timer per cell group) | Upon transmitting *UEAssistanceInformation* message with *maxCC-Preference*. | Upon releasing *maxCC-PreferenceConfig* during the connection re-establishment/resume procedures, upon receiving *maxCC-PreferenceConfig* set to *release*, or upon performing MR-DC release*.* | No action. |
| T346d (The UE maintains one instance of this timer per cell group) | Upon transmitting *UEAssistanceInformation* message with *maxMIMO-LayerPreference*. | Upon releasing *maxMIMO-LayerPreferenceConfig* during the connection re-establishment/resume procedures, upon receiving *maxMIMO-LayerPreferenceConfig* set to *release*, or upon performing MR-DC release*.* | No action. |
| T346e (The UE maintains one instance of this timer per cell group) | Upon transmitting *UEAssistanceInformation* message with *minSchedulingOffsetPreference*. | Upon releasing *minSchedulingOffsetPreferenceConfig* during the connection re-establishment/resume procedures, upon receiving *minSchedulingOffsetPreferenceConfig* set to *release*, or upon performing MR-DC release*.* | No action. |
| T346f | Upon transmitting *UEAssistanceInformation* message with *releasePreference*. | Upon releasing *releasePreferenceConfig* during the connection re-establishment/resume procedures, or upon receiving *releasePreferenceConfig* set to *release.* | No action. |
| T346g | Upon transmitting *UEAssistanceInformation* message with *musim-PreferredRRC-State*. | Upon receiving *RRCRelease*, or upon receiving *musim-LeaveAssistanceConfig* set to *release*. | Perform the actions as specified in 5.3.8.6. |
| T346h | Upon transmitting *UEAssistanceInformation* message with *musim-GapPreferenceList* or *musim-GapPriorityPreferenceList* Information. | Upon releasing *musim-GapAssistanceConfig* during the connection re-establishment/resume procedures, or upon receiving *musim-GapAssistanceConfig* set to *release*. | No action. |
| T346i | Upon transmitting *UEAssistanceInformation* message with *scg-DeactivationPreference* | Upon releasing *scg-DeactivationPreferenceConfig* during RRC connection re-establishment/resume or upon receiving *scg-DeactivationPreferenceConfig* set to *release*. | No action. |
| T346j (The UE maintains one instance of this timer per cell group) | Upon transmitting *UEAssistanceInformation* message with *rlm-RelaxationReportingConfig*. | Upon releasing *rlm-RelaxationReportingConfig* during the connection re-establishment/resume procedures, upon receiving *rlm-RelaxationReportingConfig* set to *release*, or upon performing MR-DC release*.* | No action. |
| T346k (The UE maintains one instance of this timer per cell group) | Upon transmitting *UEAssistanceInformation* message with *bfd-RelaxationReportingConfig*. | Upon releasing *bfd-RelaxationReportingConfig* during the connection re-establishment/resume procedures, upon receiving *bfd-RelaxationReportingConfig* set to *release*, or upon performing MR-DC release*.* | No action. |
| T346l  (The UE maintains one instance of this timer per QoS flow) | Upon transmitting *UEAssistanceInformation* message with *ul-TrafficInfo* for the concerned QoS flow. | Upon releasing *ul-TrafficInfoReportingConfig* during the connection re-establishment/resume procedures, or upon receiving *ul-TrafficInfoReportingConfig* set to *release.* | No action. |
| T346m | Upon transmitting *UEAssistanceInformation* message with *multiRx-PreferenceFR2*. | Upon releasing *multiRx-PreferenceReportingConfigFR2* during the connection re-establishment/resume procedures, upon receiving *multiRx-PreferenceReportingConfigFR2* set to release. | No action. |
| T346n | Upon transmission of MUSIM temporary restriction of *musim-CapRestriction* for constraint combination of bands and/or band(s) or combination bands to avoid | Upon releasing *musim-CapabilityRestrictionConfig* during the connection re-establishment/resume procedures, or upon receiving *musim-CapabilityRestrictionConfig* set to *release.* | No action. |
| T348 | Upon transmission of MUSIM temporary restriction of *musim-CapRestriction* for serving cell(s) with capabilities restricted, release of SCell or release of SCG. | Upon reception of *RRCReconfiguration* message that does not exceed UE temporary capability restriction transmitted via *musim-CapRestriction*. | UE may apply the temporary UE capability restriction in accordance with the one indicated in the last transmission of the *UEAssistanceInformation* message including *musim-CapRestriction*. |
| T350 | Upon transmitting *DedicatedSIBRequest* message with *requestedSIB-List* and/or *requestedPosSIB-List*. | Upon acquiring the requested SIB(s) or posSIB(s), upon releasing *onDemandSIB-Request* during the connection re-establishment procedures, upon receiving *onDemandSIB-Request* set to release, upon reception of *RRCRelease* or upon successful change of PCell while in RRC\_CONNECTED. | No action |
| T380 | Upon reception of t380 in *RRCRelease.* | Upon reception of *RRCResume*, *RRCSetup* or *RRCRelease*. | Perform the actions as specified in 5.3.13. |
| T390 | When access attempt is barred at access barring check for an Access Category. The UE maintains one instance of this timer per Access Category. | Upon cell (re)selection, upon relay (re)selection, upon entering RRC\_CONNECTED, upon reception of *RRCReconfiguration* including *reconfigurationWithSync*, upon change of PCell while in RRC\_CONNECTED, upon reception of *MobilityFromNRCommand*, or upon reception of *RRCRelease*. | Perform the actions as specified in 5.3.14.4. |
| T400 | Upon transmission of RRCReconfigurationSidelink | Upon reception of RRCReconfigurationFailureSidelink or RRCReconfigurationCompleteSidelink | Perform the Sidelink radio link failure related actions as specified in 5.8.9.3. |
| T420 | Upon reception of the *RRCReconfiguration* message including *sl-PathSwitchConfig* | Upon successfully sending *RRCReconfigurationComplete* message (i.e., PC5 RLC acknowledgement is received from target L2 U2N Relay UE) | Perform the RRC re-establishment procedure as specified in 5.3.7. |
| T421 | Upon reception of the *RRCReconfiguration* message including *sl-IndirectPathAddChange* | Upon successfully sending *RRCReconfigurationComplete* message (i.e., PC5 RLC acknowledgement is received from target L2 U2N Relay UE) if split SRB1 with duplication is configured; | Perform the Failure Information Reporting as specified in 5.7.3c. |
| T430 | Start or restart from the subframe indicated by *epochTime* upon reception of SIB19, or upon reception of *RRCReconfiguration* message for the target cell including *reconfigurationWithSync*, or upon conditional reconfiguration execution i.e. when applying a stored *RRCReconfiguration* message for the target cell including *reconfigurationWithSync.* | Stop T430, if it is running, for the source cell upon reception of *RRCReconfiguration* message including *reconfigurationWithSync*, or upon conditional reconfiguration execution i.e. when applying a stored *RRCReconfiguration* message including *reconfigurationWithSync.* | Perform the actions as specified in 5.2.2.6. |

Editor's Note: FFS the stop condition for other cases, i.e. PC5-RRC trigger, CONNECTED relay UE.